



International
Fixed-Income
Markets

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

Overview

Chapter 16

International Fixed-Income Markets



International or “Euro-”bonds:

International
Fixed-Income
Markets

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

Overview

- ▶ deposit, loan, bond or CommPaper deal, whose currency is not the locally official currency
- ▶ originally: dollar deposits/loans in (Paris and) London—Eurodollars
 - ◊ US chased international dollar mkt from NY by silly measures and rules
 - ◊ later, London remained attractive:
 - ▷ need for a free, lightly-regulated mkt for pro's at *some* place on the globe
 - ▷ business attracts business (see Ch on stocks)
- ▶ later generalised, like Euro-BEF (¿BEF in A'dam?), and, extrapolating *ad absurdum*, Euro-EUR (¿EUR in London?)
- ▶ alternative term, “xeno”, failed to catch on: many still use “Euro-”



International or “Euro-”bonds:

International
Fixed-Income
Markets

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

Overview

- ▶ deposit, loan, bond or CommPaper deal, whose currency is not the locally official currency
- ▶ originally: dollar deposits/loans in (Paris and) London—Eurodollars
 - ◊ US chased international dollar mkt from NY by silly measures and rules
 - ◊ later, London remained attractive:
 - ▷ need for a free, lightly-regulated mkt for pro's at *some* place on the globe
 - ▷ business attracts business (see Ch on stocks)
- ▶ later generalised, like Euro-BEF (¿BEF in A'dam?), and, extrapolating *ad absurdum*, Euro-EUR (¿EUR in London?)
- ▶ alternative term, “xeno”, failed to catch on: many still use “Euro-”



International or “Euro-”bonds:

International
Fixed-Income
Markets

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

Overview

- ▶ deposit, loan, bond or CommPaper deal, whose currency is not the locally official currency
- ▶ originally: dollar deposits/loans in (Paris and) London—Eurodollars
 - ◊ US chased international dollar mkt from NY by silly measures and rules
 - ◊ later, London remained attractive:
 - ▶ need for a free, lightly-regulated mkt for pro's at *some* place on the globe
 - ▶ business attracts business (see Ch on stocks)
- ▶ later generalised, like Euro-BEF (¿BEF in A'dam?), and, extrapolating *ad absurdum*, Euro-EUR (¿EUR in London?)
- ▶ alternative term, “xeno”, failed to catch on: many still use “Euro-”



International or “Euro-”bonds:

International
Fixed-Income
Markets

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

Overview

- ▶ deposit, loan, bond or CommPaper deal, whose currency is not the locally official currency
- ▶ originally: dollar deposits/loans in (Paris and) London—Eurodollars
 - ◊ US chased international dollar mkt from NY by silly measures and rules
 - ◊ later, London remained attractive:
 - ▶ need for a free, lightly-regulated mkt for pro's at *some* place on the globe
 - ▶ business attracts business (see Ch on stocks)
- ▶ later generalised, like Euro-BEF (¿BEF in A'dam?), and, extrapolating *ad absurdum*, Euro-EUR (¿EUR in London?)
- ▶ alternative term, “xeno”, failed to catch on: many still use “Euro-”



International or “Euro-”bonds:

International
Fixed-Income
Markets

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

Overview

- ▶ deposit, loan, bond or CommPaper deal, whose currency is not the locally official currency
- ▶ originally: dollar deposits/loans in (Paris and) London—Eurodollars
 - ◊ US chased international dollar mkt from NY by silly measures and rules
 - ◊ later, London remained attractive:
 - ▶ need for a free, lightly-regulated mkt for pro's at *some* place on the globe
 - ▶ business attracts business (see Ch on stocks)
- ▶ later generalised, like Euro-BEF (¿BEF in A'dam?), and, extrapolating *ad absurdum*, Euro-EUR (¿EUR in London?)
- ▶ alternative term, “xeno”, failed to catch on: many still use “Euro-”



Overview

International
Fixed-Income
Markets

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

Overview

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

EuroBonds and EuroCommercial Paper
Bonds

Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets

Without active swap markets



Overview

International
Fixed-Income
Markets

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

Overview

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

EuroBonds and EuroCommercial Paper

Bonds

Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets

Without active swap markets



Overview

International
Fixed-Income
Markets

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

Overview

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

EuroBonds and EuroCommercial Paper

Bonds

Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets

Without active swap markets



Outline

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth
Euro-Deposits
International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Deposits and Loans

Causes of Euromoney's growth
Euro-Deposits
International Credits and Loans

EuroBonds and EuroCommercial Paper

Bonds
Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets
Without active swap markets



Proximate Causes of growth (1960s)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

▶ **liberalisation of trade and exchange**

- ◊ (only a *sine qua non*, not a positive explanation)

▶ **The US trade deficit**

- ◊ deficit on current account, aid, and FDI—paid in dollars
- ◊ (does not explain why dollars went to London not (directly) NY)

▶ **Political risks for Socialist governments**

▶ **UK capital controls and restrictions** made London banks borrow/lend USD rather than GBP.

▶ **US capital controls and restrictions** kept 'internal' interest rates low, and hindered foreign borrowing in the US:

- ◊ Interest Equalization Tax (1963-74)
- ◊ foreign credit restraints (1965, 1968-74)
- ◊ Regulation Q (1966, relaxed 1974, abolished 1986): interest ceilings
- ◊ 'voluntary'/mandatory curbs on capital exports



Proximate Causes of growth (1960s)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

▶ liberalisation of trade and exchange

- ◇ (only a *sine qua non*, not a positive explanation)

▶ The US trade deficit

- ◇ deficit on current account, aid, and FDI—paid in dollars
- ◇ (does not explain why dollars went to London not (directly) NY)

▶ Political risks for Socialist governments

▶ UK capital controls and restrictions made London banks borrow/lend USD rather than GBP.

▶ US capital controls and restrictions kept 'internal' interest rates low, and hindered foreign borrowing in the US:

- ◇ Interest Equalization Tax (1963-74)
- ◇ foreign credit restraints (1965, 1968-74)
- ◇ Regulation Q (1966, relaxed 1974, abolished 1986): interest ceilings
- ◇ 'voluntary'/mandatory curbs on capital exports



Proximate Causes of growth (1960s)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **liberalisation of trade and exchange**
 - ◇ (only a *sine qua non*, not a positive explanation)
- ▶ **The US trade deficit**
 - ◇ deficit on current account, aid, and FDI—paid in dollars
 - ◇ (does not explain why dollars went to London not (directly) NY)
- ▶ **Political risks for Socialist governments**
- ▶ **UK capital controls and restrictions** made London banks borrow/lend USD rather than GBP.
- ▶ **US capital controls and restrictions** kept 'internal' interest rates low, and hindered foreign borrowing in the US:
 - ◇ Interest Equalization Tax (1963-74)
 - ◇ foreign credit restraints (1965, 1968-74)
 - ◇ Regulation Q (1966, relaxed 1974, abolished 1986): interest ceilings
 - ◇ 'voluntary'/mandatory curbs on capital exports



Proximate Causes of growth (1960s)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **liberalisation of trade and exchange**
 - ◇ (only a *sine qua non*, not a positive explanation)
- ▶ **The US trade deficit**
 - ◇ deficit on current account, aid, and FDI—paid in dollars
 - ◇ (does not explain why dollars went to London not (directly) NY)
- ▶ **Political risks for Socialist governments**
- ▶ **UK capital controls and restrictions** made London banks borrow/lend USD rather than GBP.
- ▶ **US capital controls and restrictions** kept 'internal' interest rates low, and hindered foreign borrowing in the US:
 - ◇ Interest Equalization Tax (1963-74)
 - ◇ foreign credit restraints (1965, 1968-74)
 - ◇ Regulation Q (1966, relaxed 1974, abolished 1986): interest ceilings
 - ◇ 'voluntary'/mandatory curbs on capital exports



Proximate Causes of growth (1960s)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **liberalisation of trade and exchange**
 - ◇ (only a *sine qua non*, not a positive explanation)
- ▶ **The US trade deficit**
 - ◇ deficit on current account, aid, and FDI—paid in dollars
 - ◇ (does not explain why dollars went to London not (directly) NY)
- ▶ **Political risks for Socialist governments**
- ▶ **UK capital controls and restrictions** made London banks borrow/lend USD rather than GBP.
- ▶ **US capital controls and restrictions** kept 'internal' interest rates low, and hindered foreign borrowing in the US:
 - ◇ Interest Equalization Tax (1963-74)
 - ◇ foreign credit restraints (1965, 1968-74)
 - ◇ Regulation Q (1966, relaxed 1974, abolished 1986): interest ceilings
 - ◇ 'voluntary'/mandatory curbs on capital exports



Comparative Advantages in the Long Run

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Lower bid-offer spread, which in turn reflects the lower costs of “euro”banking relative to domestic banking:

- ▶ **A lean and mean machine**
 - ▶ wholesale, and 100% business-oriented
- ▶ **Low legal costs** because high-quality borrowers
- ▶ **Lighter regulation**
 - ▶ no deposit insurance, reserve requirements, credit restraints
- ▶ **Universal banking**
 - ▶ us: Glass-Steagal act prevented one-stop shops; ban on interstate banking kept most US banks small
- ▶ **Lower taxes**
 - ▶ use tax havens
 - ▶ Western countries followed: no withholding taxes etc



Comparative Advantages in the Long Run

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Lower bid-offer spread, which in turn reflects the lower costs of “euro”banking relative to domestic banking:

- ▶ **A lean and mean machine**
 - ▶ wholesale, and 100% business-oriented
- ▶ **Low legal costs** because high-quality borrowers
- ▶ **Lighter regulation**
 - ▶ no deposit insurance, reserve requirements, credit restraints
- ▶ **Universal banking**
 - ▶ US: Glass-Steagal act prevented one-stop shops; ban on interstate banking kept most US banks small
- ▶ **Lower taxes**
 - ▶ use tax havens
 - ▶ Western countries followed: no withholding taxes etc



Comparative Advantages in the Long Run

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Lower bid-offer spread, which in turn reflects the lower costs of “euro”banking relative to domestic banking:

- ▶ **A lean and mean machine**
 - ▶ wholesale, and 100% business-oriented
- ▶ **Low legal costs** because high-quality borrowers
- ▶ **Lighter regulation**
 - ▶ no deposit insurance, reserve requirements, credit restraints
- ▶ **Universal banking**
 - ▶ us: Glass-Steagal act prevented one-stop shops; ban on interstate banking kept most US banks small
- ▶ **Lower taxes**
 - ▶ use tax havens
 - ▶ Western countries followed: no withholding taxes etc



Comparative Advantages in the Long Run

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Lower bid-offer spread, which in turn reflects the lower costs of “euro”banking relative to domestic banking:

- ▶ **A lean and mean machine**
 - ▶ wholesale, and 100% business-oriented
- ▶ **Low legal costs** because high-quality borrowers
- ▶ **Lighter regulation**
 - ▶ no deposit insurance, reserve requirements, credit restraints
- ▶ **Universal banking**
 - ▶ US: Glass-Steagal act prevented one-stop shops; ban on interstate banking kept most US banks small
- ▶ **Lower taxes**
 - ▶ use tax havens
 - ▶ Western countries followed: no withholding taxes etc



Comparative Advantages in the Long Run

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

Lower bid-offer spread, which in turn reflects the lower costs of “euro”banking relative to domestic banking:

- ▶ **A lean and mean machine**
 - ▶ wholesale, and 100% business-oriented
- ▶ **Low legal costs** because high-quality borrowers
- ▶ **Lighter regulation**
 - ▶ no deposit insurance, reserve requirements, credit restraints
- ▶ **Universal banking**
 - ▶ US: Glass-Steagal act prevented one-stop shops; ban on interstate banking kept most US banks small
- ▶ **Lower taxes**
 - ▶ use tax havens
 - ▶ Western countries followed: no withholding taxes etc



Now: a Truly International Market

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

- ▶ **Proximate causes were only “the grain of sand in the oyster”**
- ▶ **Playing field is now more level**
 - ▶ deregulation (US, later UK), “regulatory arbitrage”
 - ▶ information exchange amongst states for tax purposes; withholding taxes; end of secret bank accounts or fiscal anonymity
- ▶ **An international market**
 - ▶ London keeps gaining market share because of network effects (business attracts business), not because of excess regulation elsewhere



Now: a Truly International Market

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits
International Credits and Loans

Bonds and Commercial Paper

How to Weigh your
Alternatives

- ▶ **Proximate causes were only “the grain of sand in the oyster”**
- ▶ **Playing field is now more level**
 - ▶ deregulation (US, later UK), “regulatory arbitrage”
 - ▶ information exchange amongst states for tax purposes; withholding taxes; end of secret bank accounts or fiscal anonymity
- ▶ **An international market**
 - ▶ London keeps gaining market share because of network effects (business attracts business), not because of excess regulation elsewhere



Now: a Truly International Market

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits
International Credits and Loans

Bonds and Commercial Paper

How to Weigh your
Alternatives

- ▶ **Proximate causes were only “the grain of sand in the oyster”**
- ▶ **Playing field is now more level**
 - ▶ deregulation (US, later UK), “regulatory arbitrage”
 - ▶ information exchange amongst states for tax purposes; withholding taxes; end of secret bank accounts or fiscal anonymity
- ▶ **An international market**
 - ▶ London keeps gaining market share because of network effects (business attracts business), not because of excess regulation elsewhere

Euro-Deposits



International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

▶ Forms

- ▶ time deposits v CDs, 1 week to (rare:) 7 yrs
- ▶ fixed- v floating-rate (reset 2nd working day before re-start, typically as ?IBOR $-x$ or USTbill $-x$)



International Credits and Loans (1)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

▶ **Consortia (syndicates)**

- ▶ **mandated arranger**(s) led by **book runner** (s)—formerly called lead manager(s) or lead bank
- ▶ **participating** banks
- ▶ **underwriters** (co-managers, co-leads)
- ▶ **paying agent** or **facility agent**

Why consortia?

- to spread the 'objective' risks.
- to avoid the moral hazard that the borrower might just pay off the larger banks



International Credits and Loans (1)

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

▶ **Consortia (syndicates)**

- ▶ **mandated arranger**(s) led by **book runner** (s)—formerly called lead manager(s) or lead bank
- ▶ **participating** banks
- ▶ **underwriters** (co-managers, co-leads)
- ▶ **paying agent** or **facility agent**

Why consortia?

- to spread the 'objective' risks.
- to avoid the moral hazard that the borrower might just pay off the larger banks



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

\$500m Turkish bank loan syndication for Vakifbank signed in Dubai

UAE Central Bank governor addresses signing ceremony

6 December 2004; Dubai, UAE: A US\$500 million syndicated term loan agreement for Vakifbank (Türkiye Vakıflar Bankası T.A.O.) one of the strongest banks in Turkey, was signed in Dubai today by a syndicate of 56 blue-chip regional and international banks. The loan was raised to pre-finance Turkish export contracts and has a margin of 60 basis points per annum. VakifBank is currently rated Bpi by S&P, B+ by Fitch, and B2 by Moody's. On 1st of November 2004 Fitch increased the National Long Term Rating of VakifBank by two notches to A-(tur).

Bookrunners: Citibank NA, Standard Bank London Limited and WestLB AG

Documentation Agent: Standard Bank London Limited

Facility Agent: Sumitomo Mitsui Banking Corporation Europe Limited

Information Memorandum: WestLB AG

Coordination, Publicity and Signing: Standard Bank London Limited

Mandated Arrangers: ABN AMRO Bank N.V., Al Ahli Bank of Kuwait, Alpha Bank A.E., American Express Bank GmbH, Banque Saudi Fransi, The Bank of Tokyo-Mitsubishi, Ltd., Burgan Bank, Citibank N.A., Demir-Halk Bank (Nederland) N.V., Deutsche Bank AG London; Dresdner Kleinwort Wasserstein (acting through Dresdner Bank AG, Niederlassung Luxemburg), GarantiBank International N.V., Gulf Bank KSC, HVB Group (represented by members of HVB Group), ING, J.P. Morgan plc, Mashreqbank P.S.C., Natexis Banques Populaires, Raiffeisen Zentralbank Österreich AG, Standard Bank London Limited, Standard Chartered Bank, Sumitomo Mitsui Banking Corporation Europe Limited, UFJ Bank Limited; Wachovia Bank, National Association and WestLB AG, London Branch.

Co Arrangers: Gulf International Bank B.S.C., HSH Nordbank AG, Samba Financial Group, Managers, Doha Bank, Arab African International Bank, Banque Misr – Overseas Branch, Erste Bank (Malta) Limited, Finansbank (Holland) N.V., Raiffeisenlandesbank Oberösterreich Aktiengesellschaft, The Bank of Nova Scotia, The Commercial Bank Of Qatar (Q.S.C.), The Saudi National Commercial Bank, Bahrain, UBAE Arab Italian Bank Spa

Participants: Bankmuscat S.A.O.G., Arab Bank plc, Baden-Württembergische Bank Aktiengesellschaft, Banca Nazionale del Lavoro S.p.A., London Branch, Banco Bilbao Vizcaya Argentina S.A., Bank Hapoalim B.M., Bank of Ireland, Banque Internationale De Commerce – BRED, Credit Suisse, First Gulf Bank, Misr International Bank S.A.E., Sabanci Bank PLC, United Bank Limited, UAE, Zivnostenská Banka, a.s., Banca Monte Dei Paschi di Siena s.p.a., Habib Bank AG Zürich, London Forfaiting Company Limited, Tunis International Bank

International Credits and Loans (2)



International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **Revolving or Floating-Rate Loans** to reduce bank's interest risk
 - ▶ reset every n months, typically on basis of ?IBOR
 - ▶ capped rate: equivalent to giving **borrower** a **put** option on PN with capped yield.
 - ▶ rate with floor: equivalent to giving **lender** a **call** option on PN with minimum yield.

Example

100m, reset 6mo LIBOR+0.5%, cap 4.5% floor 3.5% *p.a.*

LIBOR	rates (%)		equivalent PN story			mood		option ex'ed
	rate on loan	face value	fair PV	proceeds	bank	you		
3	$3.5/2 = 1.75$	101.75	100.25	100	☺	☹	bank's call	
3.5	$3.5/2 = 1.75$	101.75	100.00	100				
4	$4.0/2 = 2.00$	102.00	100.00	100				
4.5	$4.5/2 = 2.25$	102.25	100.00	100				
5	$4.5/2 = 2.25$	102.25	99.76	100	☹	☺	your put	

International Credits and Loans (2)



International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **Revolving or Floating-Rate Loans** to reduce bank's interest risk
 - ▶ reset every n months, typically on basis of ?IBOR
 - ▶ capped rate: equivalent to giving **borrower** a **put** option on PN with capped yield.
 - ▶ rate with floor: equivalent to giving **lender** a **call** option on PN with minimum yield.

Example

100m, reset 6mo LIBOR+0.5%, cap 4.5% floor 3.5% *p.a.*

rates (%)		equivalent PN story			mood		
LIBOR	rate on loan	face value	fair PV	proceeds	bank	you	option ex'ed
3	$3.5/2 = 1.75$	101.75	100.25	100	☺	☹	bank's call
3.5	$3.5/2 = 1.75$	101.75	100.00	100			
4	$4.0/2 = 2.00$	102.00	100.00	100			
4.5	$4.5/2 = 2.25$	102.25	100.00	100			
5	$4.5/2 = 2.25$	102.25	99.76	100	☹	☺	your put

International Credits and Loans (2)



International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **Revolving or Floating-Rate Loans** to reduce bank's interest risk
 - ▶ reset every n months, typically on basis of ?IBOR
 - ▶ capped rate: equivalent to giving **borrower** a **put** option on PN with capped yield.
 - ▶ rate with floor: equivalent to giving **lender** a **call** option on PN with minimum yield.

Example

100m, reset 6mo LIBOR+0.5%, cap 4.5% floor 3.5% *p.a.*

rates (%)		equivalent PN story			mood		
LIBOR	rate on loan	face value	fair PV	proceeds	bank	you	option ex'ed
3	$3.5/2 = 1.75$	101.75	100.25	100	☺	☹	bank's call
3.5	$3.5/2 = 1.75$	101.75	100.00	100			
4	$4.0/2 = 2.00$	102.00	100.00	100			
4.5	$4.5/2 = 2.25$	102.25	100.00	100			
5	$4.5/2 = 2.25$	102.25	99.76	100	☹	☺	your put

International Credits and Loans (2)



International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

- ▶ **Revolving or Floating-Rate Loans** to reduce bank's interest risk
 - ▶ reset every n months, typically on basis of ?IBOR
 - ▶ capped rate: equivalent to giving **borrower** a **put** option on PN with capped yield.
 - ▶ rate with floor: equivalent to giving **lender** a **call** option on PN with minimum yield.

Example

100m, reset 6mo LIBOR+0.5%, cap 4.5% floor 3.5% *p.a.*

LIBOR	rates (%)		equivalent PN story			mood		
	rate on loan	face value	fair PV	proceeds	bank	you	option ex'ed	
3	3.5/2 = 1.75	101.75	100.25	100	☺	☹	bank's call	
3.5	3.5/2 = 1.75	101.75	100.00	100				
4	4.0/2 = 2.00	102.00	100.00	100				
4.5	4.5/2 = 2.25	102.25	100.00	100				
5	4.5/2 = 2.25	102.25	99.76	100	☹	☺	your put	

International Credits and Loans



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

▶ **Costs**

- ▶ (up front:) management fee and participation fee, usually 0.25 to 1%.
- ▶ paying agent's fee (a few basis points)
- ▶ risk-spread above the risk-free rate: depends on
 - quality of the borrower or the political risk of his country,
 - the maturity and grace period, and
 - the up-front fee
 - market situation.

Trading of up-front fees for spread? We need an overall measure of cost.

International Credits and Loans



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

▶ **Costs**

- ▶ (up front:) management fee and participation fee, usually 0.25 to 1%.
- ▶ paying agent's fee (a few basis points)
- ▶ risk-spread above the risk-free rate: depends on
 - quality of the borrower or the political risk of his country,
 - the maturity and grace period, and
 - the up-front fee
 - market situation.

Trading of up-front fees for spread? We need an overall measure of cost.

International Credits and Loans



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

▶ **Costs**

- ▶ (up front:) management fee and participation fee, usually 0.25 to 1%.
- ▶ paying agent's fee (a few basis points)
- ▶ risk-spread above the risk-free rate: depends on
 - quality of the borrower or the political risk of his country,
 - the maturity and grace period, and
 - the up-front fee
 - market situation.

Trading of up-front fees for spread? We need an overall measure of cost.



Translating a fee into an equiv. spread, v1

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

Up-front fee of USD 425,000; five-year bullet loan of USD 10,000,000 with an annual interest payment of 5 percent (including spread 0.5%). IRR (y)?:

$$\text{find } y: 9,575,000 = \frac{500,000}{1+y} + \frac{500,000}{(1+y)^2} + \dots + \frac{10,500,000}{(1+y)^5}.$$

$\text{YIELD}(\underbrace{\text{"1/1/2001"}}, \underbrace{\text{"12/31/2005"}}, \underbrace{0.05}, \underbrace{95.75}, \underbrace{100}, \underbrace{1,1}) =$	% 6.01 % 4.50 % 1.51
swap rate	
all-in spread	

some start date 5 years later coupon V_t V_T don't ask

(More precise yield: 6.0092%.)



Translating a fee into an equiv. spread, v2

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

Up-front fee of USD 425,000; five-year bullet loan of USD 10,000,000 with an annual interest payment of 5 percent (including spread 0.5%). Total equivalent fee? Use the loan rate or, if available, the (fixed-rate) all-in cost. Here we take the loan rate:

$$\begin{aligned}\text{find EqAn: } 425,000 &= \frac{EqAn}{1.05} + \frac{EqAn}{1.05^2} + \dots + \frac{EqAn}{(1.05^5)} \\ &= EqAn \times 4.214364; \\ \Rightarrow EqAn &= \frac{425,000}{4.214364} = 100,893.5\end{aligned}$$



Translating a spread into an equiv. fee

International
Fixed-Income
Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

NOTE: when comparing loans with different currencies of denomination and, therefore, different risk-free rates, spreads above the proxy risk-free rate (the swap rate) do not say enough:

- 0.85% extra on top of 12%, versus
- 0.84% extra on top of 2%??.

So we rely on PV'ed values not % spreads.

Translating a 0.5% spread into an equivalent upfront fee:

$$PV = 0.5m \times \sum_t \frac{1}{1.06^t} = 0.5m \times 4.212364 = 4106182.$$

Credit lines



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

An option on a spread—the right to borrow up to X at $n\%$ above LIBOR.

- ▶ **standard**

- ▶ amounts taken up are callable by bank at all times; agreement is short-term

- ▶ **revolving commitment**

- ▶ will be rolled over a fixed spread nor n years

Costs:

- ▶ commitment fee on unused portion
- ▶ e.g. LIBOR + $n\%$ on used portion

Credit lines



International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

An option on a spread—the right to borrow up to X at $n\%$ above LIBOR.

▶ **standard**

- ▶ amounts taken up are callable by bank at all times; agreement is short-term

▶ **revolving commitment**

- ▶ will be rolled over a fixed spread nor n years

Costs:

- ▶ commitment fee on unused portion
- ▶ e.g. LIBOR + $n\%$ on used portion



Credit lines

International Fixed-Income Markets

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

Deposits and Loans

Causes of Euromoney's growth

Euro-Deposits

International Credits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

An option on a spread—the right to borrow up to X at $n\%$ above LIBOR.

▶ **standard**

- ▶ amounts taken up are callable by bank at all times; agreement is short-term

▶ **revolving commitment**

- ▶ will be rolled over a fixed spread nor n years

Costs:

- ▶ commitment fee on unused portion
- ▶ e.g. LIBOR + $n\%$ on used portion



Outline

International Fixed-Income Markets

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

Deposits and Loans

Bonds and Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your Alternatives

Deposits and Loans

Causes of Euromoney's growth
Euro-Deposits
International Credits and Loans

EuroBonds and EuroCommercial Paper

Bonds
Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets
Without active swap markets



Overview

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

Banking v Securities

Banking	Securities
<p>Money Market</p> <ul style="list-style-type: none">– short-term loan– short-term credit line– rolled-over credit line– revolving commitment	<p>Short-term</p> <p>Commercial Paper (CP) Market</p> <ul style="list-style-type: none">– CP issue– CP program– note issuing facility (NIF)– revolving underwritten facility (RUF)
<p>Longer-term loans</p> <ul style="list-style-type: none">– fixed-rate loans– floating-rate (“revolving”) loan– FR loan with cap– FR loan with floor	<p>Medium- and Long-term</p> <p>Notes and Bonds</p> <ul style="list-style-type: none">– fixed-rate bond– floating-rate note (FRN)– HIBO (higher-bound) bond– LOBO (lower-bound) bond



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ **Large issues**
- ▶ **Disintermediation:**
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ **Large issues**
- ▶ **Disintermediation:**
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ **Large issues**
- ▶ **Disintermediation:**
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ Large issues
- ▶ Disintermediation:
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ **Large issues**
- ▶ **Disintermediation:**
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Why Eurbonds exist

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

A cheap source of capital for big, high-quality players:

- ▶ **Fewer regulations** for “euro” public issues in terms of publication requirements, vetting, issuing calendars (and queues), rating requirements
- ▶ **Swift and efficient private placement.** For loans privately placed with a limited number of professional investors there are virtually no requirements.
- ▶ **Simple contracts** (high-grade, known borrowers)
- ▶ **Tax games:** anonymous bearer bonds, often no withholding tax.
- ▶ **Large issues**
- ▶ **Disintermediation:**
 - many banks lost their first-rate creditworthiness (crisis in markets for sovereign debt and real estate loans).
 - lower profits from lending/borrowing and stiffened capital adequacy rules: banks preferred immediate fee income without need for capital.



Terms and Conditions

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Bearer securities; coupons, mantle.**
- ▶ **Interest payments.**
 - ▷ fixed coupons;
 - ▷ FRN, sometimes with cap (LOBO bond) or floor (HIBO bond);
 - ▷ perpetual FRN's.
- ▶ **Amortization.**
 - ▷ bullet bonds.
 - ▷ sinking fund or purchase fund provision.
- ▶ **Currency of denomination.**
 - ▷ single currency (especially the EUR, USD, GBP, CHF, JPY).
 - ▷ basket (ECU; rarer: SDR, EUA)
 - ▷ dual currency bond: choice between e.g. USD 100K or EUR 100K (=option—what kind(s)?)



Terms and Conditions

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Bearer securities; coupons, mantle.**
- ▶ **Interest payments.**
 - ▷ fixed coupons;
 - ▷ FRN, sometimes with cap (LOBO bond) or floor (HIBO bond);
 - ▷ perpetual FRN's.
- ▶ **Amortization.**
 - ▷ bullet bonds.
 - ▷ sinking fund or purchase fund provision.
- ▶ **Currency of denomination.**
 - ▷ single currency (especially the EUR, USD, GBP, CHF, JPY).
 - ▷ basket (ECU; rarer: SDR, EUA)
 - ▷ dual currency bond: choice between e.g. USD 100K or EUR 100K (=option—what kind(s)?)



Terms and Conditions

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Bearer securities; coupons, mantle.**
- ▶ **Interest payments.**
 - ▷ fixed coupons;
 - ▷ FRN, sometimes with cap (LOBO bond) or floor (HIBO bond);
 - ▷ perpetual FRN's.
- ▶ **Amortization.**
 - ▷ bullet bonds.
 - ▷ sinking fund or purchase fund provision.
- ▶ **Currency of denomination.**
 - ▷ single currency (especially the EUR, USD, GBP, CHF, JPY).
 - ▷ basket (ECU; rarer: SDR, EUA)
 - ▷ dual currency bond: choice between e.g. USD 100K or EUR 100K (=option—what kind(s)?)



Terms and Conditions

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Bearer securities; coupons, mantle.**
- ▶ **Interest payments.**
 - ▷ fixed coupons;
 - ▷ FRN, sometimes with cap (LOBO bond) or floor (HIBO bond);
 - ▷ perpetual FRN's.
- ▶ **Amortization.**
 - ▷ bullet bonds.
 - ▷ sinking fund or purchase fund provision.
- ▶ **Currency of denomination.**
 - ▷ single currency (especially the EUR, USD, GBP, CHF, JPY).
 - ▷ basket (ECU; rarer: SDR, EUA)
 - ▷ dual currency bond: choice between e.g. USD 100K or EUR 100K (=option—what kind(s)?)



Terms and Conditions

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Stripped bonds:** coupons and principal are sold separately.
 - ▷ for the apprentice stripper: use a pair of scissors
 - ▷ professionals: placing bonds in a trust, issuing separate claims against principal and coupons
- Why?**
 - ▷ to make the market for zeros more complete
 - ▷ tax games (if capital gains are tax free)



Placement procedures (1)

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

► **Syndicated Issues**

- book runner(s) (lead bank, lead manager), arranger(s).
- underwriters (managers, co-leads)
- placing agents
- fiscal agent
- trustee bank

Prospectus, red herring; grey market period.

Fees paid via discounts:

Example

	% com- mission specs	the bank buys at	... and sells at	
lead manager	0.5%	9,750	9,800	(to underwriters)
underwriters	1.0%	9,800	9,900	(to selling agents)
sellers	1.0%	9,900	10,000	(to public, or back to underwriters)



Placement procedures (1)

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

► **Syndicated Issues**

- book runner(s) (lead bank, lead manager), arranger(s).
- underwriters (managers, co-leads)
- placing agents
- fiscal agent
- trustee bank

Prospectus, red herring; grey market period.

Fees paid via discounts:

Example

	% com- mission specs	the bank buys at	... and sells at	
lead manager	0.5%	9,750	9,800	(to underwriters)
underwriters	1.0%	9,800	9,900	(to selling agents)
sellers	1.0%	9,900	10,000	(to public, or back to underwriters)



Placement procedures (1)

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

▶ **Syndicated Issues**

- ▶ book runner(s) (lead bank, lead manager), arranger(s).
- ▶ underwriters (managers, co-leads)
- ▶ placing agents
- ▶ fiscal agent
- ▶ trustee bank

Prospectus, red herring; grey market period.

Fees paid via discounts:

Example

	% com- mission specs	the bank buys at	... and sells at	
lead manager	0.5%	9,750	9,800	(to underwriters)
underwriters	1.0%	9,800	9,900	(to selling agents)
sellers	1.0%	9,900	10,000	(to public, or back to underwriters)



Alternative (and Faster) Issue Procedures

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

▶ **Bought deal**

- ▶ one bank buys the whole lot, then re-replaces paper at its own risk

▶ **Fixed-Price Re-offer**

- ▶ no underwriting—Issuer Risks All to Save Penny

▶ **Yield Pricing**

- ▶ no underwriting; last-minute pricing via mkt yields

▶ **“On tap” or “MTN-style” issue**

- ▶ passive: just wait for takers—so no prospectus
- ▶ no underwriting, no placing



Alternative (and Faster) Issue Procedures

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

▶ **Bought deal**

- ▶ one bank buys the whole lot, then re-replaces paper at its own risk

▶ **Fixed-Price Re-offer**

- ▶ no underwriting—Issuer Risks All to Save Penny

▶ **Yield Pricing**

- ▶ no underwriting; last-minute pricing via mkt yields

▶ **“On tap” or “MTN-style” issue**

- ▶ passive: just wait for takers—so no prospectus
- ▶ no underwriting, no placing



Alternative (and Faster) Issue Procedures

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

▶ **Bought deal**

- ▶ one bank buys the whole lot, then re-replaces paper at its own risk

▶ **Fixed-Price Re-offer**

- ▶ no underwriting—Issuer Risks All to Save Penny

▶ **Yield Pricing**

- ▶ no underwriting; last-minute pricing via mkt yields

▶ **“On tap” or “MTN-style” issue**

- ▶ passive: just wait for takers—so no prospectus
- ▶ no underwriting, no placing



Alternative (and Faster) Issue Procedures

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds
Euro Commercial Paper

How to Weigh your
Alternatives

- ▶ **Bought deal**
 - ▶ one bank buys the whole lot, then re-replaces paper at its own risk

- ▶ **Fixed-Price Re-offer**
 - ▶ no underwriting—Issuer Risks All to Save Penny

- ▶ **Yield Pricing**
 - ▶ no underwriting; last-minute pricing via mkt yields

- ▶ **“On tap” or “MTN-style” issue**
 - ▶ passive: just wait for takers—so no prospectus
 - ▶ no underwriting, no placing



Euro Commercial Paper

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

Disintermediated counterpart of short-term bank loans.

▶ Types

- ▶ PNs, 7 to 360d; discount issues
- ▶ Notes (1-7 yrs); fixed- or floating-rate
- ▶ CDs: PNs or notes issued by banks

▶ Issue Procedures

- ▶ one-shot issues (rare)
- ▶ ECP program, using the same banks all the time
 - ▷ Note issuing facility (NIF): underwritten, at a fixed spread
 - ▷ Revolving Underwritten Facility (RUF): underwritten at a capped spread.

Relative to the NIF, the RUF avoids the hassle of renegotiating when the required spread goes down.



Euro Commercial Paper

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

Disintermediated counterpart of short-term bank loans.

▶ Types

- ▶ PNs, 7 to 360d; discount issues
- ▶ Notes (1-7 yrs); fixed- or floating-rate
- ▶ CDs: PNs or notes issued by banks

▶ Issue Procedures

- ▶ one-shot issues (rare)
- ▶ ECP program, using the same banks all the time
 - ▷ Note issuing facility (NIF): underwritten, at a fixed spread
 - ▷ Revolving Underwritten Facility (RUF): underwritten at a capped spread.

Relative to the NIF, the RUF avoids the hassle of renegotiating when the required spread goes down.



A RUF for Kertih

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

Bonds

Euro Commercial Paper

How to Weigh your
Alternatives

Kertih Terminals Signs RM500 Million Financing Agreement For Bulk Chemical Storage Project

Kertih Terminals Sdn Bhd (KTSB) has signed an agreement with RHB Sakura Merchant Bankers Bhd as Arranger and Agent for a RM500 million Revolving Underwritten Facility (RUF) with Term Loan Conversion to finance the development of its centralised liquid bulk chemical storage and handling facility in Kertih, Terengganu. The financing agreement was signed today in Kuala Lumpur between KTSB, RHB Sakura Merchant Bankers and a group of financial institutions as underwriters and tender panel members of the RUF.

Under the agreement, KTSB, taking advantage of the prevailing favourable interest rates, will issue short-term negotiable debt instruments directly to investors during the first five years of the RUF, after which the facility is convertible into a four-year Term Loan. Additional features of the RUF, which has been assigned a short-term rating of MARC-1 by Malaysian Rating Corporation Bhd, include the option to raise fixed rate debts via conventional borrowings, structured debts (bonds) instruments or Islamic financing instruments.

KTSB, a joint venture between PETRONAS (40 percent), GATX Terminals (Pte) Ltd (30 percent) and Dialog Equity Sdn Bhd (30 percent), is undertaking the centralised chemical storage project which forms an integral part of the Kertih Integrated Petrochemical Complex (IPC) currently being developed by PETRONAS. Phase one of the storage project is at an advanced stage of construction. When fully operational, the facility will have 37 tanks with a total storage capacity of 403,358 cubic metres to cater to a host of users and customers at the Kertih IPC. These include Vinyl Chloride (Malaysia) Sdn Bhd, PETRONAS Ammonia Sdn Bhd, BP PETRONAS Acetyls Sdn Bhd, Aromatics Malaysia Sdn Bhd and the Union Carbide Corporation-PETRONAS' derivatives joint venture.

Issued by:

Kertih Terminals Sdn Bhd
109 Block G, Phileo Damansara 1
No 9 Jalan 16/11
46350 PETALING JAYA
Tel: 03-7551199



Outline

International Fixed-Income Markets

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

Deposits and Loans

Bonds and Commercial Paper

How to Weigh your Alternatives

With active swap markets
Without active swap markets

Deposits and Loans

Causes of Euromoney's growth
Euro-Deposits
International Credits and Loans

EuroBonds and EuroCommercial Paper

Bonds
Euro Commercial Paper (ECP)

How to Weigh your Alternatives

With active swap markets
Without active swap markets



Comparing offers (1): with swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

- swap has zero value, *i.e.* swapping does not change PV of obligations; so we compare offers on basis of what you pay over&above the swap rate

- two methods, producing similar outcomes:

- ◊ *IRR-based*: IRR is an overall cost that merges

- (i) the discount rate R , incl risk premium, and

- (ii) compensation for services (prospectus, ads, etc.),

so $IRR > R$. We look at

- IRR in excess of swap rate, and
 - more crucially, its “PV”—done at IRR.

- ◊ *EqAn* of all PV'ed costs. PV'ing comes first, and is at the loan rate (or even swap rate, as one does for swaps) not at the IRR.

Afterwards, you can also compute a percentage cost, the relative EqAn, to please any spread-obsessed bosses.



Comparing offers (1): with swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

- swap has zero value, *i.e.* swapping does not change PV of obligations; so we compare offers on basis of what you pay over&above the swap rate

- two methods, producing similar outcomes:

- ◊ *IRR-based*: IRR is an overall cost that merges

- (i) the discount rate R , incl risk premium, and

- (ii) compensation for services (prospectus, ads, etc.),

so $IRR > R$. We look at

- IRR in excess of swap rate, and
 - more crucially, its “PV”—done at IRR.

- ◊ *EqAn* of all PV'ed costs. PV'ing comes first, and is at the loan rate (or even swap rate, as one does for swaps) not at the IRR.

Afterwards, you can also compute a percentage cost, the relative EqAn, to please any spread-obsessed bosses.



Comparing offers (1): with swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

- swap has zero value, *i.e.* swapping does not change PV of obligations; so we compare offers on basis of what you pay over&above the swap rate

- two methods, producing similar outcomes:

- ◊ *IRR-based*: IRR is an overall cost that merges

- (i) the discount rate R , incl risk premium, and

- (ii) compensation for services (prospectus, ads, etc.),

so $IRR > R$. We look at

- IRR in excess of swap rate, and
 - more crucially, its “PV”—done at IRR.

- ◊ *EqAn* of all PV'ed costs. PV'ing comes first, and is at the loan rate (or even swap rate, as one does for swaps) not at the IRR.

Afterwards, you can also compute a percentage cost, the relative EqAn, to please any spread-obsessed bosses.



Comparing offers (1): with swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

- swap has zero value, *i.e.* swapping does not change PV of obligations; so we compare offers on basis of what you pay over&above the swap rate
- two methods, producing similar outcomes:
 - ◇ **IRR-based**: IRR is an overall cost that merges
 - (i) the discount rate R , incl risk premium, and
 - (ii) compensation for services (prospectus, ads, etc.),so $IRR > R$. We look at
 - IRR in excess of swap rate, and
 - more crucially, its “PV”—done at IRR.
 - ◇ **EqAn** of all PV'ed costs. PV'ing comes first, and is at the loan rate (or even swap rate, as one does for swaps) not at the IRR. Afterwards, you can also compute a percentage cost, the relative EqAn, to please any spread-obsessed bosses.



(w. swap mkts): Method 1, IRR

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets
Without active swap markets

IRR of a HC and FC loan

Data: US Cy wants to borrow EUR (USD 200m gross, or, at the spot rate of USD/EUR 1.25, EUR 160m gross); 7-year bullet loan; swap rates 4% in USD and 3.8% EUR.

USD loan: Risk spread 0.5%; upfront costs 2%. Total cost=?

$$\text{YIELD}(\overbrace{("1/1/2001", "12/31/2007")}, \text{some start date}, \overbrace{0.045}, \text{7 years later}, \overbrace{98}, \text{coupon}, \overbrace{100}, V_T, \overbrace{1, 1}), \text{don't ask} = \begin{array}{l} \% 4.844 \\ \% 4.000 \\ \% 0.844 \\ \text{cost in USD: } 200\text{m} \times [0.00844 \times 5.81928233] = \text{USD } 9.82\text{m} \end{array}$$

swap rate
all-in spread

EUR loan: Risk spread 0.55%; upfront costs 1.75%. Total cost=?

$$\text{YIELD}("1/1/2001", "12/31/2007", 0.0435, 98.25, 100, 1, 1) = \begin{array}{l} \% 4.649 \\ \% 3.800 \\ \% 0.849 \\ \text{cost in USD: } 1.25 \{ \times 160\text{m} \times [0.00849 \times 5.86077876] \} = \text{USD } 9.95\text{m} \end{array}$$

swap rate
all-in spread



(w. swap mkts): Method 1, IRR

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets
Without active swap markets

IRR of a HC and FC loan

Data: US Cy wants to borrow EUR (USD 200m gross, or, at the spot rate of USD/EUR 1.25, EUR 160m gross); 7-year bullet loan; swap rates 4% in USD and 3.8% EUR.

USD loan: Risk spread 0.5%; upfront costs 2%. Total cost=?

$$\text{YIELD}(\overbrace{("1/1/2001", "12/31/2007")^{\text{some start date}}}, \overbrace{0.045}^{\text{7 years later coupon}}, \overbrace{98}^{V_t}, \overbrace{100}^{V_T}, \overbrace{(1, 1)}^{\text{don't ask}}) = \begin{array}{l} \% 4.844 \\ \% 4.000 \\ \% 0.844 \\ \text{cost in USD: } 200\text{m} \times [0.00844 \times 5.81928233] = \text{USD } 9.82\text{m} \end{array}$$

swap rate
all-in spread

EUR loan: Risk spread 0.55%; upfront costs 1.75%. Total cost=?

$$\text{YIELD}("1/1/2001", "12/31/2007", 0.0435, 98.25, 100, 1, 1) = \begin{array}{l} \% 4.649 \\ \% 3.800 \\ \% 0.849 \\ \text{cost in USD: } 1.25 \{ \times 160\text{m} \times [0.00849 \times 5.86077876] \} = \text{USD } 9.95\text{m} \end{array}$$

swap rate
all-in spread



(w. swap mkts: via % EqAn of PV'ed costs)

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

% EqAn of a HC or FC loan

Data (p.m.): US Cy wants to borrow EUR (USD 200m gross, or, at the spot rate of USD/EUR 1.25, EUR 160m gross); 7-year bullet loan; swap rates % in USD and 3.8% EUR.

USD loan: Risk spread 0.5%; upfront costs 2%. Total cost=?

This time we PV everything and then get the equivalent annuity:

risk spreads (PV)	$200m \times 0.005 \times 6.00205467 =$	USD 6,002,055
upfront	$200m \times 0.02 =$	4,000,000
total cost		<u>10,002,055</u>
equivalent annuity	$10,002,055 / 6.00205467 =$	1,666,420
same, in percent	$1,666,420 / 200m =$	% 0.83

Q: Why is cost estimate, 0.83%, lower than IRR-based one, 0.84%?

EUR loan: Risk spread 0.55%; upfront costs 1.75%. Total cost=?

risk spreads (PV)	$200m \times 0.005541 \times 6.00205467 =$	USD 6,651,335
upfront	$200m \times 0.0175 =$	3,500,000
total cost		<u>10,151,335</u>
equivalent annuity	$10,151,335 / 6.00205467 =$	1,691,310
same, in percent	$1,691,310 / 200m =$	% 0.84



(w. swap mkts: via % EqAn of PV'ed costs)

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

% EqAn of a HC or FC loan

Data (p.m.): US Cy wants to borrow EUR (USD 200m gross, or, at the spot rate of USD/EUR 1.25, EUR 160m gross); 7-year bullet loan; swap rates % in USD and 3.8% EUR.

USD loan: Risk spread 0.5%; upfront costs 2%. Total cost=?

This time we PV everything and then get the equivalent annuity:

risk spreads (PV)	$200m \times 0.005 \times 6.00205467 =$	USD 6,002,055
upfront	$200m \times 0.02 =$	4,000,000
total cost		<u>10,002,055</u>
equivalent annuity	$10,002,055 / 6.00205467 =$	1,666,420
same, in percent	$1,666,420 / 200m =$	% 0.83

Q: Why is cost estimate, 0.83%, lower than IRR-based one, 0.84%?

EUR loan: Risk spread 0.55%; upfront costs 1.75%. Total cost=?

risk spreads (PV)	$200m \times 0.005541 \times 6.00205467 =$	USD 6,651,335
upfront	$200m \times 0.0175 =$	3,500,000
total cost		<u>10,151,335</u>
equivalent annuity	$10,151,335 / 6.00205467 =$	1,691,310
same, in percent	$1,691,310 / 200m =$	% 0.84



(w. swap mkts: via % EqAn of PV'ed costs)

International
Fixed-Income
Markets

P. Sercu,
International
Finance: Theory into
Practice

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets
Without active swap markets

% EqAn of a HC or FC loan

Data (p.m.): US Cy wants to borrow EUR (USD 200m gross, or, at the spot rate of USD/EUR 1.25, EUR 160m gross); 7-year bullet loan; swap rates % in USD and 3.8% EUR.

USD loan: Risk spread 0.5%; upfront costs 2%. Total cost=?

This time we PV everything and then get the equivalent annuity:

risk spreads (PV)	$200m \times 0.005 \times 6.00205467 =$	USD 6,002,055
upfront	$200m \times 0.02 =$	4,000,000
total cost		<u>10,002,055</u>
equivalent annuity	$10,002,055 / 6.00205467 =$	1,666,420
same, in percent	$1,666,420 / 200m =$	% 0.83

Q: Why is cost estimate, 0.83%, lower than IRR-based one, 0.84%?

EUR loan: Risk spread 0.55%; upfront costs 1.75%. Total cost=?

risk spreads (PV)	$200m \times 0.005541 \times 6.00205467 =$	USD 6,651,335
upfront	$200m \times 0.0175 =$	3,500,000
total cost		<u>10,151,335</u>
equivalent annuity	$10,151,335 / 6.00205467 =$	1,691,310
same, in percent	$1,691,310 / 200m =$	% 0.84



Comparing offers (2): without swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

Compare USD to CNY one. No long-term forwards or swaps, no liquid government-bond market; exchange controls. Take $CNY/USD = 8.00$ (rounded for simplicity), so loan would be CNY 1.600m, 7-year bullet loan.

Terms: 6.75% and total upfront fee of 1 percent.

Risk-free rate?

PB rates (with band -10% / $+30\%$ "depending on quality"):

lending rate		savings rate	
		3 months	1.80%
6 months	5.58%	6 months	2.25%
6-12months	6.12%	1 year	2.52%
1-3 years	6.30%	2 years	3.06%
3-5 years	6.48%	3 years	3.69%
> 5 years	6.84%	5 years	4.14%



Comparing offers (2): without swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

Compare USD to CNY one. No long-term forwards or swaps, no liquid government-bond market; exchange controls. Take $CNY/USD = 8.00$ (rounded for simplicity), so loan would be CNY 1.600m, 7-year bullet loan.

Terms: 6.75% and total upfront fee of 1 percent.

Risk-free rate?

PB rates (with band -10% / $+30\%$ “depending on quality”):

lending rate		savings rate	
		3 months	1.80%
6 months	5.58%	6 months	2.25%
6-12months	6.12%	1 year	2.52%
1-3 years	6.30%	2 years	3.06%
3-5 years	6.48%	3 years	3.69%
> 5 years	6.84%	5 years	4.14%



Comparing offers (2): without swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

Issues:

- ◇ We have no precise risk-free-rate proxy; bid-ask spread is huge
- ◇ Even if we had them, China's capital controls mean that switching from risk-free CNY to risk-free USD loans *can* add or destroy value: $NPV \neq 0$ when no free access.

So we lose justification for just considering costs above risk-free rates. All we can do is compare CNY and USD IRRs, and “think of” Xrate changes.

Borrow Yuan or Dollar?

- USD IRR is 4.84
- CNY IRR is 6.94
- break-even if CNY moves by $\frac{1.0484}{1.0694} - 1 = -1.96\%$ *p.a.* on average
- But CNY will almost surely appreciate, so you borrow USD



Comparing offers (2): without swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

Issues:

- ◇ We have no precise risk-free-rate proxy; bid-ask spread is huge
- ◇ Even if we had them, China's capital controls mean that switching from risk-free CNY to risk-free USD loans *can* add or destroy value: $NPV \neq 0$ when no free access.

So we lose justification for just considering costs above risk-free rates. All we can do is compare CNY and USD IRRs, and “think of” Xrate changes.

Borrow Yuan or Dollar?

- USD IRR is 4.84
- CNY IRR is 6.94
- break-even if CNY moves by $\frac{1.0484}{1.0694} - 1 = -1.96\%$ *p.a.* on average
- But CNY will almost surely appreciate, so you borrow USD



Comparing offers (2): without swap markets

International
Fixed-Income
Markets

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

Deposits and Loans

Bonds and
Commercial Paper

How to Weigh your
Alternatives

With active swap markets

Without active swap markets

Issues:

- ◇ We have no precise risk-free-rate proxy; bid-ask spread is huge
- ◇ Even if we had them, China's capital controls mean that switching from risk-free CNY to risk-free USD loans *can* add or destroy value: $NPV \neq 0$ when no free access.

So we lose justification for just considering costs above risk-free rates. All we can do is compare CNY and USD IRRs, and “think of” Xrate changes.

Borrow Yuan or Dollar?

- USD IRR is 4.84
- CNY IRR is 6.94
- break-even if CNY moves by $\frac{1.0484}{1.0694} - 1 = -1.96\%$ *p.a.* on average
- But CNY will almost surely appreciate, so you borrow USD