MONEY MARKETS

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DEAMS
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AGENDA

- Nature and purpose of money markets
- Main intermediaries active in money markets
- Main financial instruments traded in money markets

NATURE AND PURPOSE

Aims:

- Provide **low-cost** and **quick** funds for short-term liquidity shortages
- Allowing **returns** and **safety** for short-term funds' availability

How?

- Trading quasi-money instruments (**not money**!)
    - often OTC
    - very liquid (active secondary market)
    - short-term (less than 1y, mostly within 3m)
- Large denomination: nominal values even in excess of millions €/$
- Low risk of default:
    - CBs/banks are the main operators, gov. bonds used extensively
    - some safety-nets

NATURE AND PURPOSE

Why so important?

- Markets are not perfectly efficient and are limited by regulation
- Banks need to cover short-term funds' excesses or deficits:
  - reserve requirements designed to avoid bank-runs
  - regulating aiming at financial stability limits competition (f.i. interest rate ceilings on bank deposits)
  - money markets host wholesale operations: less restrictions
- All make **treasury decisions** more often than they invest or borrow

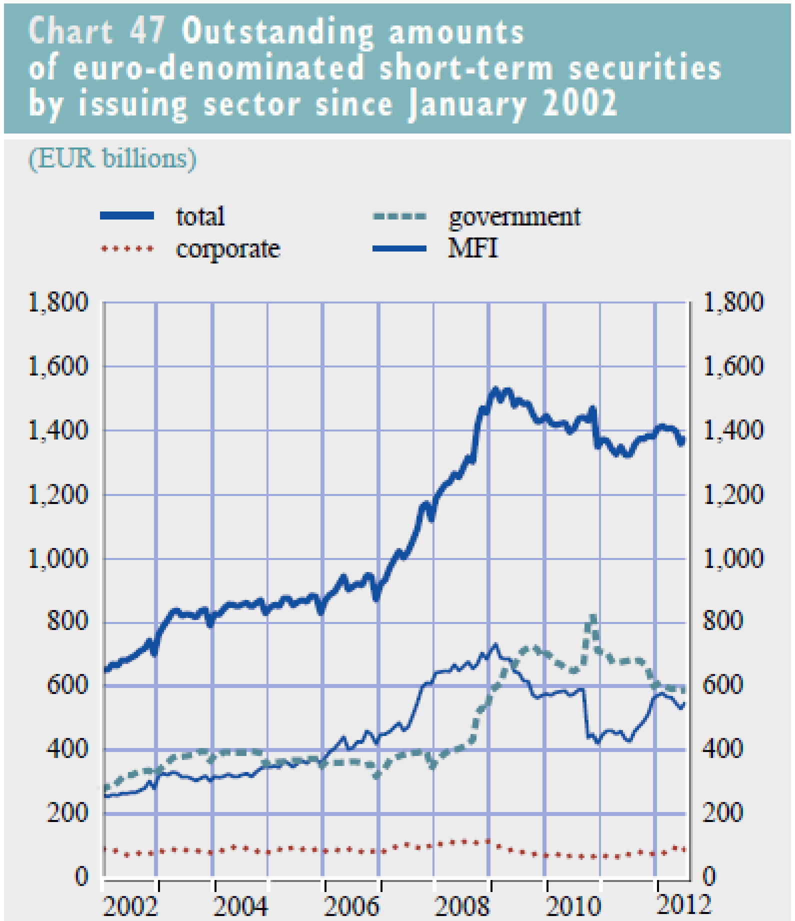
INTERMEDIARIES

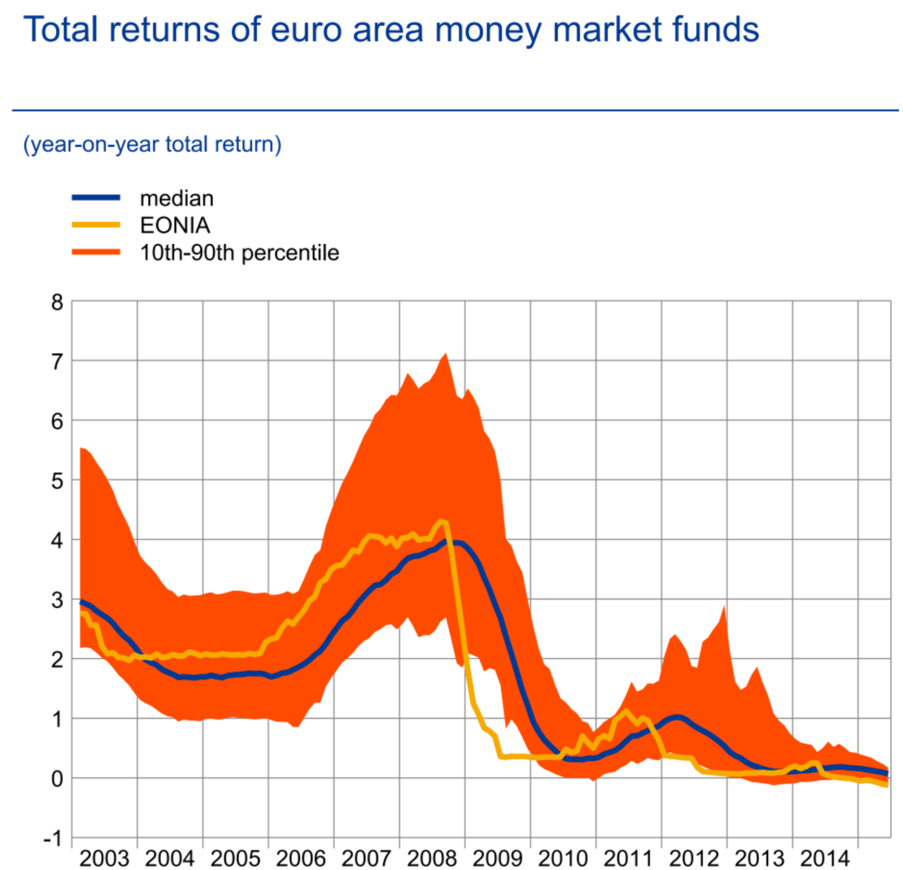
The same intermediaries act as both lenders and borrowers, from time to time

- Gov.'s treasuries: always demanding…
- Central banks: monetary policy…
- Banks: mainly short-term gov. bonds, but also others (CDs, acceptances, interbanking deposits, repos, …)
- Investment corporations and securities' firms:
    - Money brokerage firms
    - Finance companies
    - Insurers and pension funds
    - Money market mutual funds
- Few major non-financial corporations

Intermediaries

The following data, from ECB, reports figures on the overall European money market.





PRODUCTS AND SECURITIES

Short-term gov. bonds:

- Short-term liquidity shortages (f.i. gap between tax inflows and salaries of public employees)
- Usually ZC
- Very low default-risk
- Low inflation risk due to short maturity
- Low liquidity risk : market is deep and very active
- Placement usually occurs through biddings (competitive and noncompetitive)
- Dematerialisation
- Extremely low IR

BIDDINGS

Competitive bidding:

- Maturity, amount and features are announced
- Operators make P/Q bids that are classified by the offered price (H to L) or, equivalently, required yield (L to H)
- Bids are accepted until the total amount is achieved
- Each bid is priced as of the last highest accepted bid

Noncompetitive bidding:

- Bidders communicate only amounts (not prices)
- All offers are accepted and priced through a linked competitive bidding

Regulation is needed to avoid **market cornering** (f.i. see Italy)

http://www.dt.tesoro.it/it/debito_pubblico/titoli_di_stato/aste_titoli_stato.html

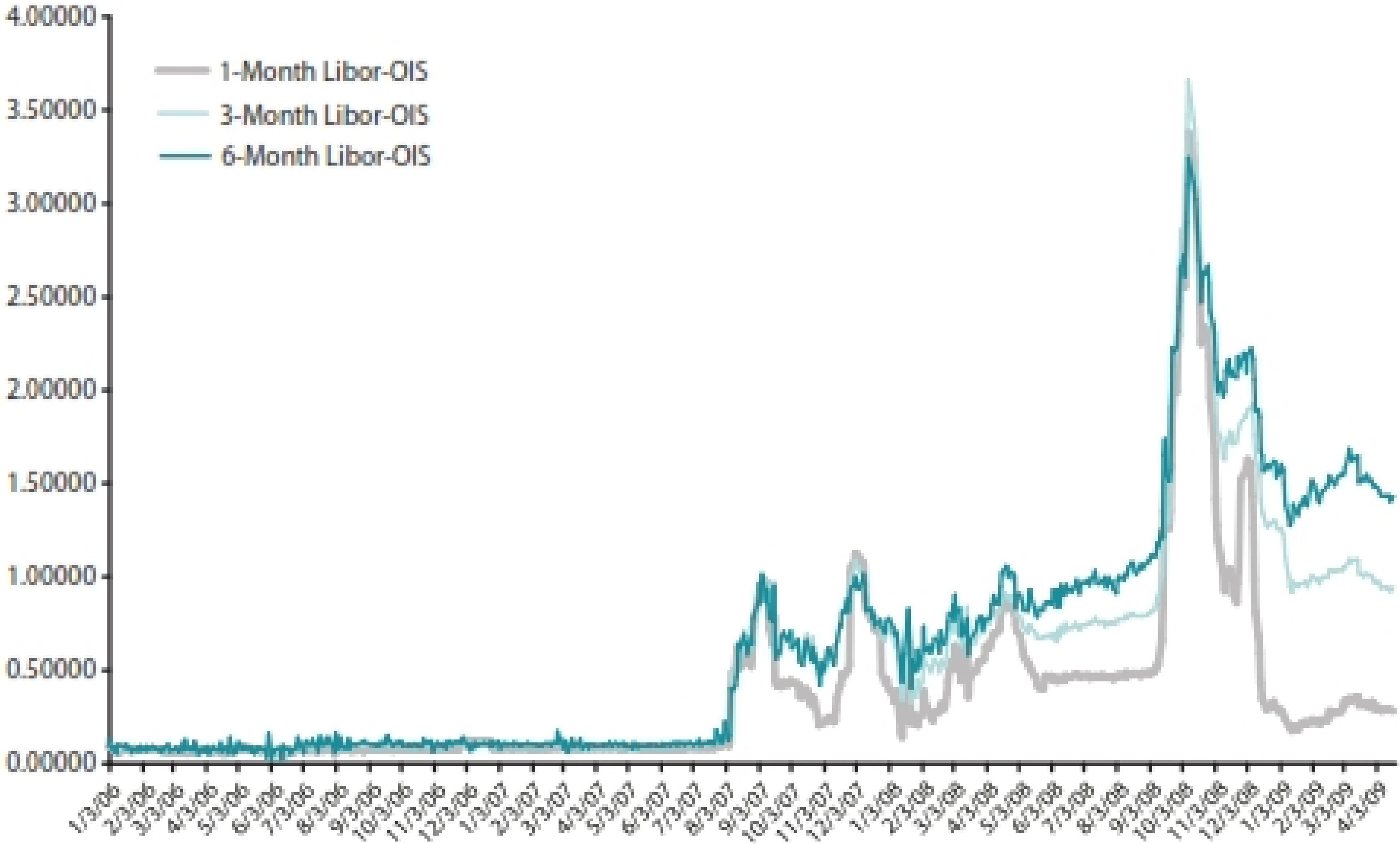
PRODUCTS AND SECURITIES

Interbanking deposits (f.i. e-MID):

- Funds mostly **extremely short-term** transferred between banks, typically 1 day
- **Vast volumes**: European overnight averaging around 20 billions € daily only
- Loans are mostly **unsecured** (no collateral), but can be secured
- Allows banks to **flexibly respect reserve requirements** from CB
- Allows banks to **cover temporary liquidity gaps**
- Typical maturities are **overnight** (t, t+1), **tomorrow next** (t+1, t+2), **spot next** (t+2, t+3), but also **on-sight** (t, n) and **broken date** (k, n) are available
- IR developed here are extremely relevant (Euribor, Eonia) and affect other IR
- CBs **influence** these rates by acting on reserves or by producing/absorbing liquidity

PRODUCTS AND SECURITIES

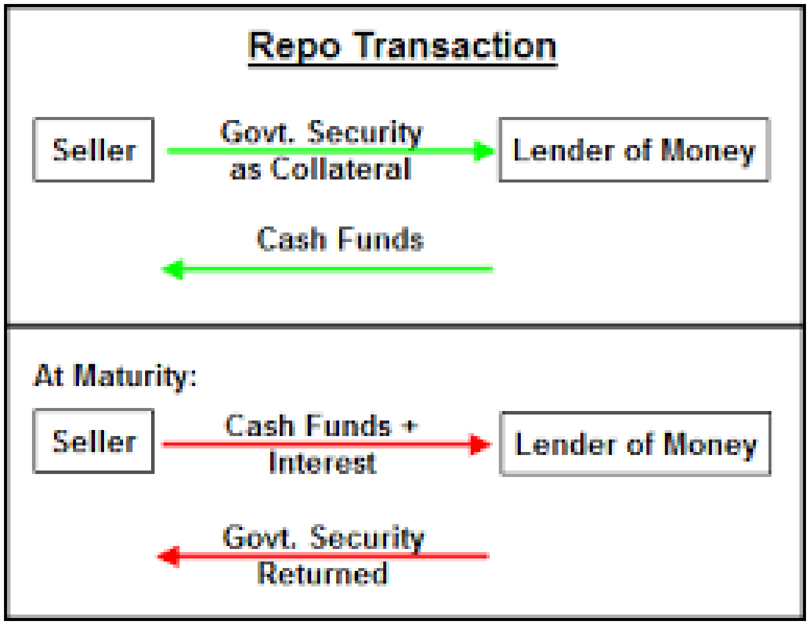
Interbanking deposits (f.i. e-MID):



PRODUCTS AND SECURITIES

REPOs:

- Very short term but longer that typical interbanking funds
- Loan is **collateralised by securities** traded in an active market (mostly, gov. bonds)



- Specified maturity, current market price, specific future price
- CBs are also active in the repo market, injecting or absorbing liquidity
- Low default risk

Products and Securities

CDs:

- Securities issued by banks documenting a deposit and bearing **a maturity date** and **interest rate** (fixed or variable)
- Usually closely tracking **inflation**
- They represent **term securities**, not demand deposits
- **Could be bearer instruments**, allowing an easier negotiability
- Their interests **follow closely short-term gov. bonds, with a premium**
- Maturities are generally **between 1m and 4m**, concentrated in shorter maturities
- **High face values**: mostly greater than 1 million $

PRODUCTS AND SECURITIES

<u>Commercial paper:</u>

- **Unsecured** promissory notes issued by (few) enterprises
- Maturity within 270 days, but most are much shorter (20-45 days)
- To allow for liquidity, **only major and secure corporations** issue such securities
- Usually, issued as ZC
- Mostly directly placed from issuer to lender, otherwise through dealers (banks)
- **Secondary markets are not deep and liquid**
- If sold through dealers, they usually allow for early (costly) repurchase
- **Could be indirectly secured by a banking line of credit**
- **Asset-backed commercial paper (ABCP)**:
  - secured by a specified asset (f.i. mortgages),
  - quality of security depends on pledged assets (as happened for RMBS)

Banker's acceptances and other instruments are generally less relevant

PRODUCTS AND SECURITIES

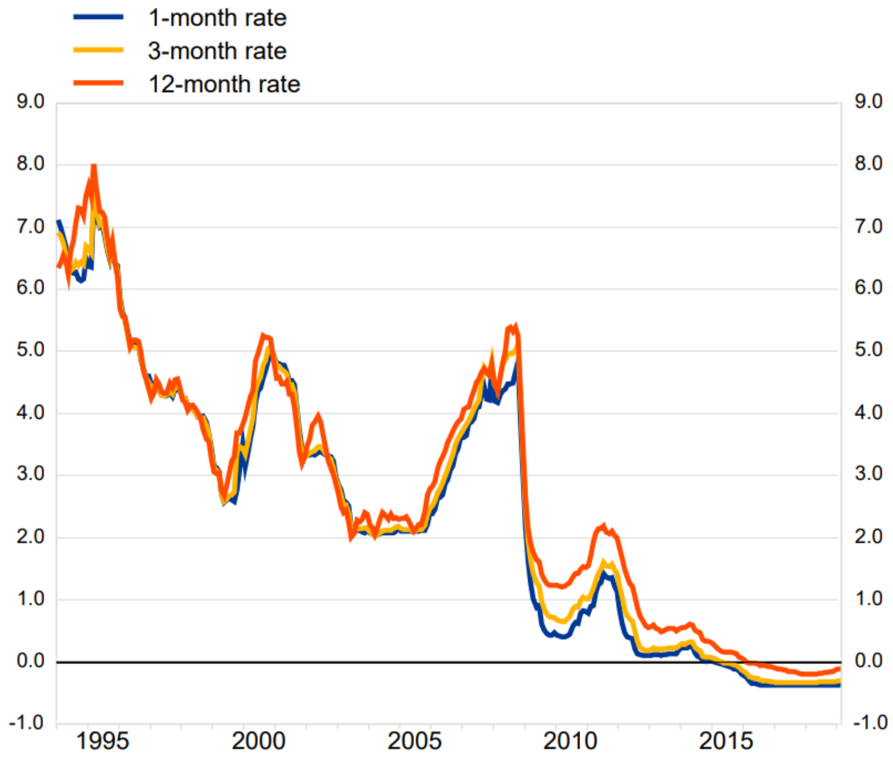
Eurodollars:

- Deposits in USD outside the US, originated by internal restrictive regulation
- Created the role of the London interbank market, developing reference IR such as LIBOR (London Interbank Offer Rate) and LIBID (London Interbank Bid Rate)
- Deep and highly competitive market
- Maturities and other features similar to interbanking funds
- Also Eurocurrencies, in general
- Also, Eurodollar CDs and other Eurocurrencies are available (yet still thin markets)

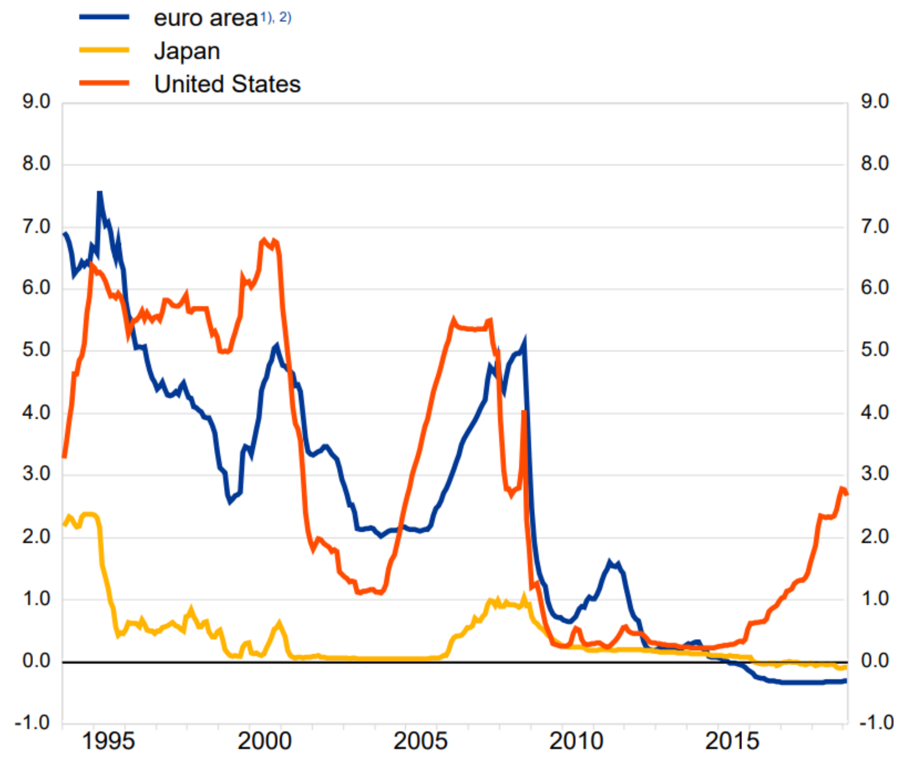
EXAMPLES

1. Consider the following data from ECB on European money market rates. Any comments?

4.6.2 Euro area money market rates [1), 2)]
(monthly averages; percentages per annum)



4.6.3 3-month money market rates
(monthly averages; percentages per annum)



EXAMPLES

2. The following graph presents the annual return on Italian short-term bonds (BOT) emerged during competitive biddings. Comments?

EXAMPLES

3. Consider the following data from ECB on European money markets. Note that this is a survey on selected banks and not an overall picture of the market. Any comments?

Chart 1 Cumulative quarterly turnover in the euro money market
(EUR trillion)

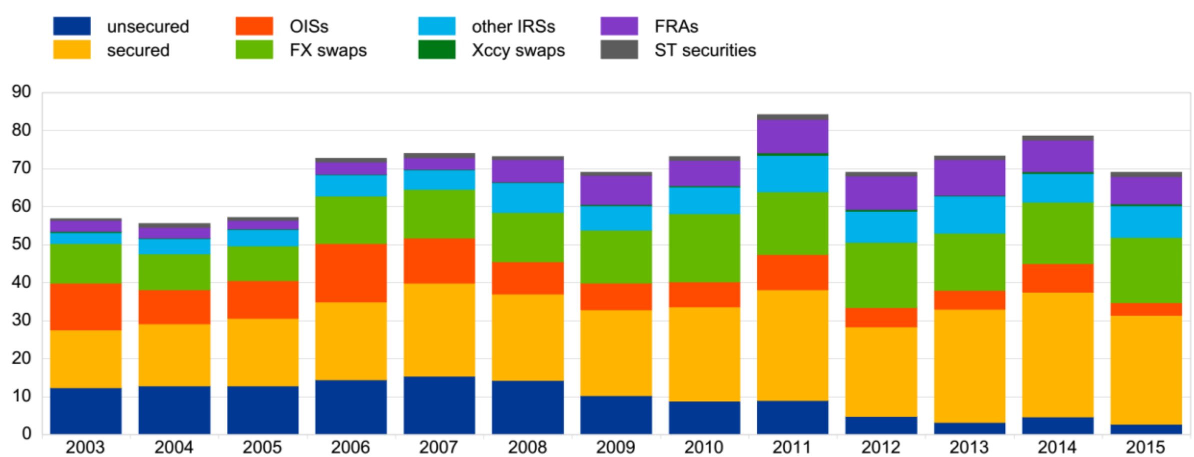
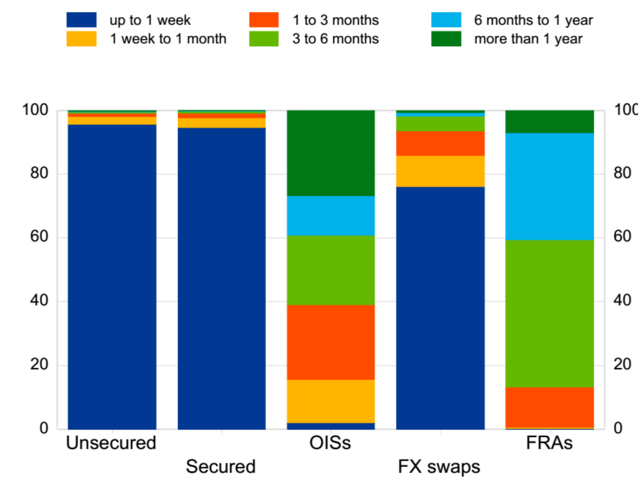


Chart 6 Maturity breakdown for various money market segments in 2015
(percentages of total)



OIS: Overnight Index Swap
FX swaps: currency swap
IRS: Interest Rate Swaps
XCCY swaps: cross-currency swap
FRAs: Forward Rate Agreement
ST: Short Term