IHEDATE

Understanding
Real Estate Risk-Return

Real Estate:
A Financial Approach

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A Financial Approach

I - RE Asset Types
II - RE Investor Types
III - RE Exuberance

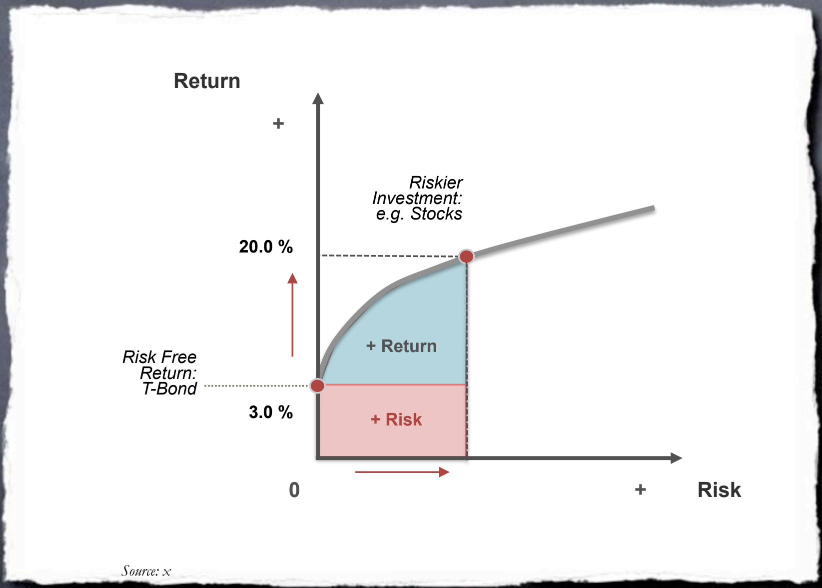
I - RE Assets Types

I - RE Asset Types

- Assets & Risk
- Assets Risk / Return
- Office Typology

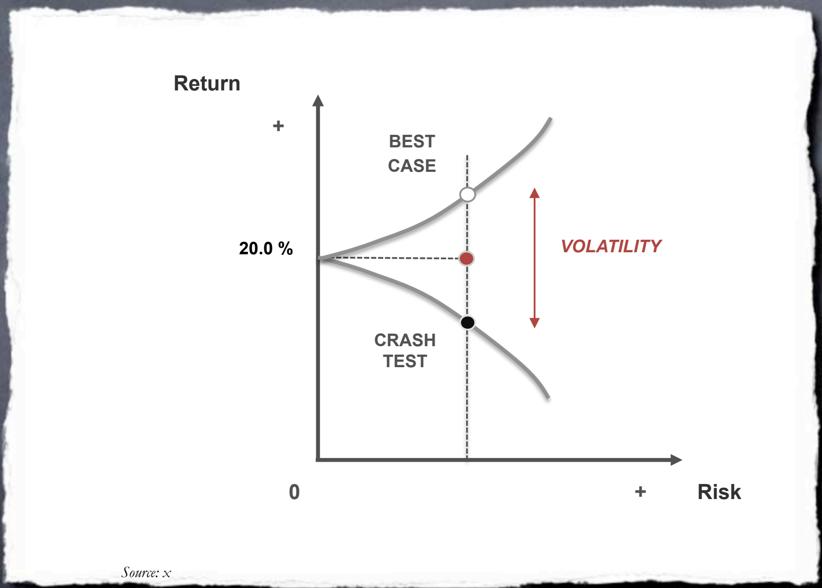
Return Should Be Correlated To Risk

- **Benchmark**
  - Zero Risk Investment present a slight yield
  - Zero Risk: Equity & yield is secured
  - T-Bound... except before Russian Revolution
- **Efficient Curve**
  - More Risk implies more return (don't be stupid)
  - Les Risk implies less return (no free lunch)



Projected Return Assessment

- **A Projection Is Not An Actual**
  - Best guess of the middle point...
  - ... between Best case scenario...
  - ... and worst case (crash test)
- **Volatility**
  - Increase with risk
  - Could lead to losses



Real Estate Risks

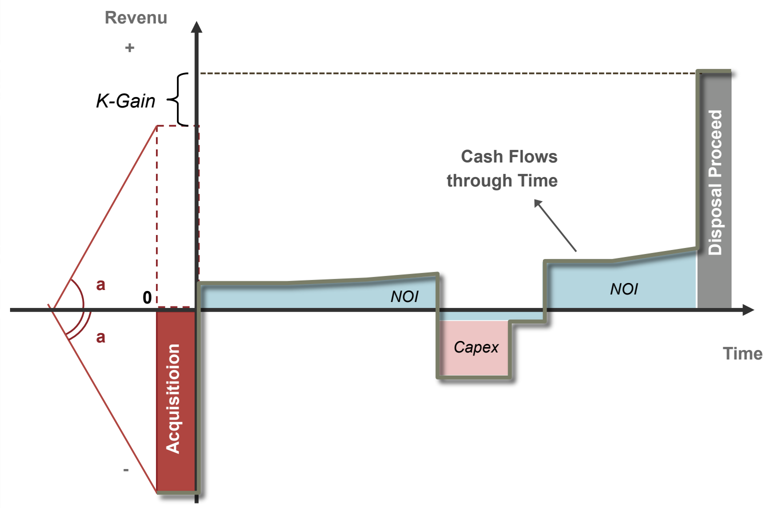
- Revenues
  - Durable vacancy or tenant departure
  - Decrease in market rent
  - Low indexation
  - Tenant default or delinquency
- Residual Value
  - No lease renewal
  - Asset obsolescence implying capex
- 4 types
  - Trophies & bad stuff
  - Cash Cows & assets needing work out

		Rental risk	
		YES	NO
risk on residual value	YES	Risky assets	cash cows
	NO	actifs with value creation	trophies

Source: x

Risk Analysis & Modeling

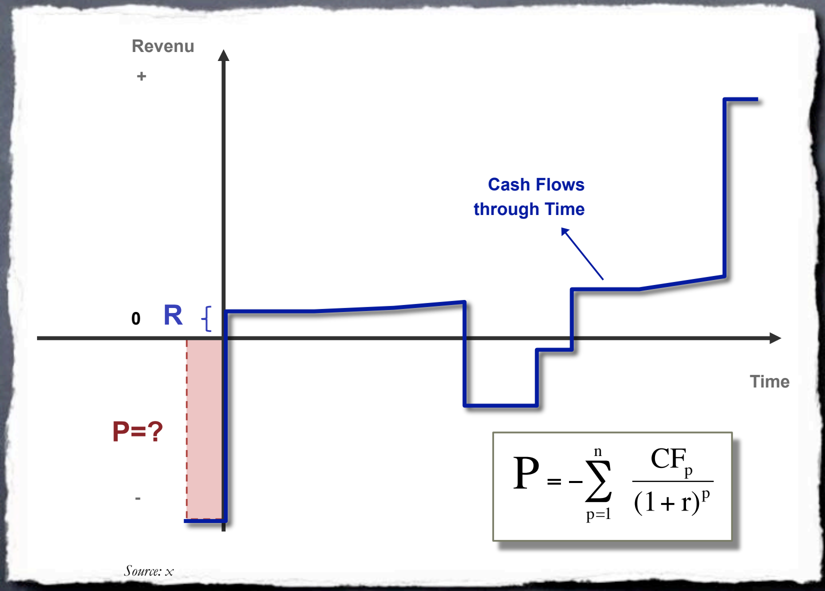
- Revenue Projection
  - Initial
  - During vacancy period
  - During 2^{nd} life
- Exit Value
  - Value
  - Timing
- Acquisition Price
  - For K-Gain...
  - ... for positive cash flows collection



Source: x

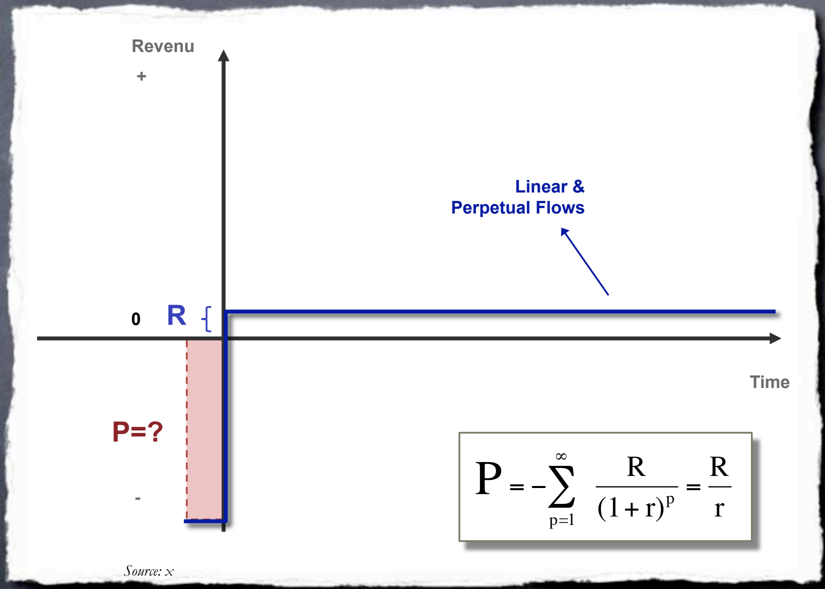
Nature Of Modeling

- ✔ Future Flows Forecast
  - Revenue evolution & timing
  - Exit value & timing
- ✔ Cash Flows Analysis
  - Addition: to see Profit
  - NPV: to assess Acquisition Price...
  - ... or IRR to validate a defined acquisition price



Easy Modeling

- ✔ Hypothesis Simplification
  - Revenue constant & perpetual
  - Fixed Expected Return
- ✔ Quick Valuation
  - NOI "capitalization"
  - Gross Price equals to NOI/cap rate (including transfer costs)
  - Net Price equals to NOI/cap rate/(1+k), k being % of transfer costs



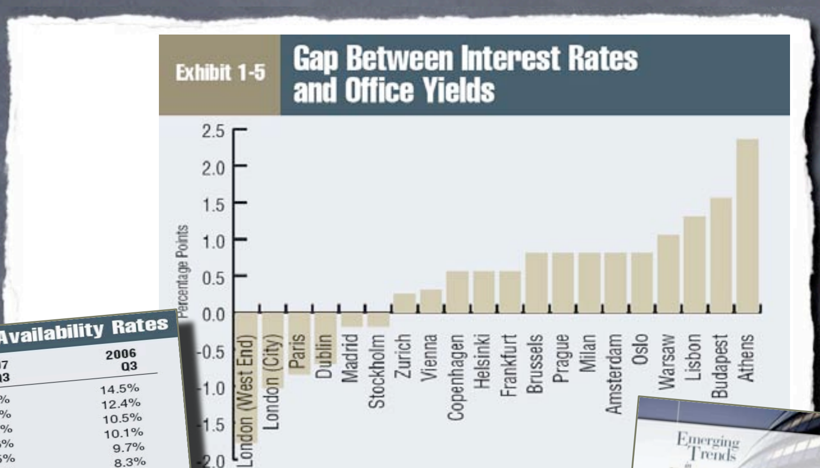
I – RE Asset Types

– Assets & Risk
– Assets Risk / Return
– Office Typology

Office Risk Return

✔ Positive Yield gap is Widening
- Interest Rate going South
- Cap rate going North

✔ Vacancy
- Above 6% ?



Source: x

Exhibit 4-24 **Office Vacancy/Availability Rates**

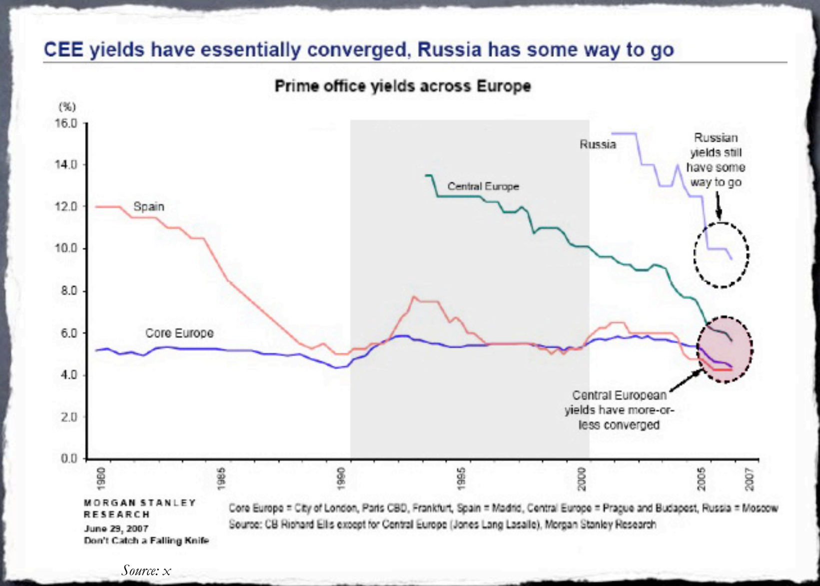
City	2007 Q3	2006 Q3
Frankfurt	12.7%	14.5%
Budapest	12.1%	12.4%
Dublin	10.2%	10.5%
Berlin	9.6%	10.1%
Brussels	9.5%	9.7%
Munich	7.5%	8.3%
Hamburg	7.4%	7.9%
Lisbon CBD	6.5%	9.3%
Madrid	6.3%	8.0%
Lyon	6.0%	7.0%
Vienna	5.7%	6.3%
Barcelona	5.3%	4.9%
Prague	5.3%	9.0%
Île-de-France	5.0%	5.2%
Moscow	5.0%	4.4%
Paris CBD	5.0%	4.7%
Zurich	4.2%	4.8%
Copenhagen	4.0%	4.7%
London (CL)	3.9%	4.9%
Warsaw	3.6%	7.9%

Source: Emerging Trends in Real Estate Europe 2008 *survey.*

Many Assets, Only One RE Risk ?

✔ Yield Convergence
- Across uses
- Across Countries
- Killing Risk Premium

✔ Which Rationale ?
- Risk Convergence ?
- Risk Mutualization ?
- ... dangerous pricing ?



I – RE Asset Types

- Assets & Risk
- Assets Risk / Return
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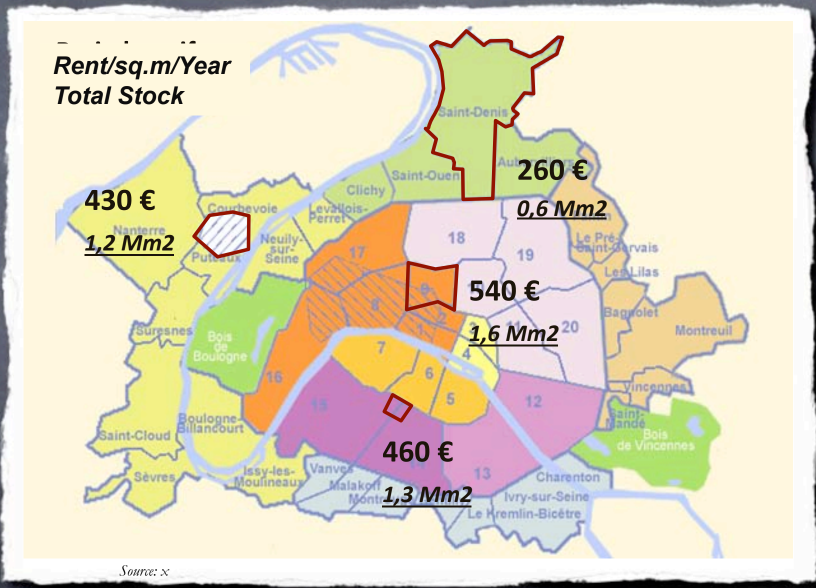
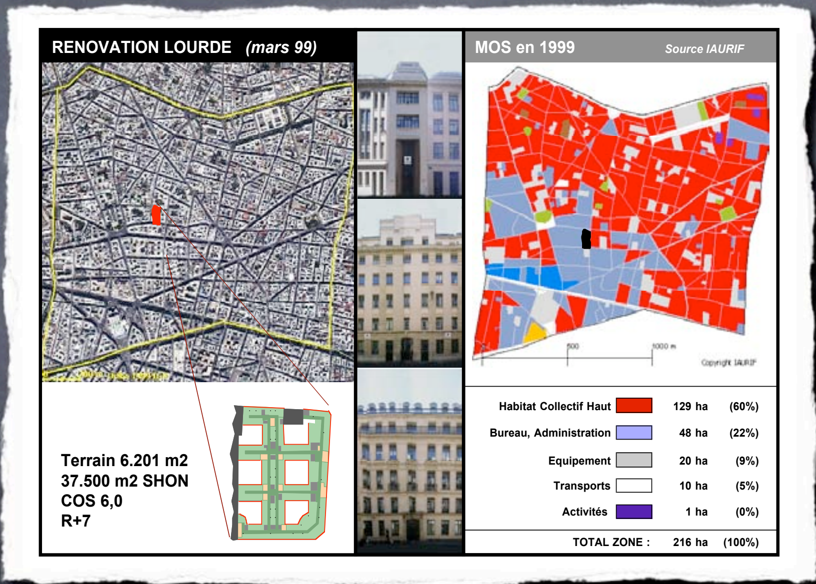
Parisian Office Example

- ✔ 4 Sites
  - Paris CBD
  - La Defense
  - Paris South (Montparnasse)
  - St Denis
- ✔ 4 Markets
  - N.B. 2003 Figures
  - Rents from € 260 to 540 /sq.m.
  - Total Stock from 0,6 to 1,6 millions sq. m.



Paris CBD (Near Opera)

- ✔ Land Use
  - Office zone within a vast multifamily residential area
  - Dense Urbanism
  - FAR: 6.0
- ✔ Building Aspect
  - Mixed Façade, Haussmaniann & 30'
  - 8 floors, Large Floors & wide open space



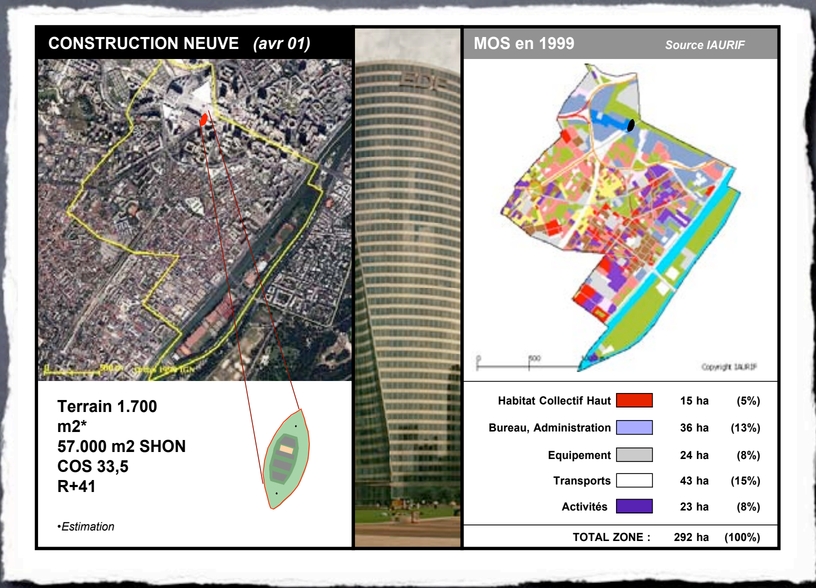
La Defense

✔ **Land Use**

- Office zone (Within La Défense) among a mixed uses area
- Hyper dense Urbanism
- FAR: 33.5 (NA)

✔ **Building Aspect**

- Skyscraper with glass curtain wall façade
- 42 floors, small floors & small open space



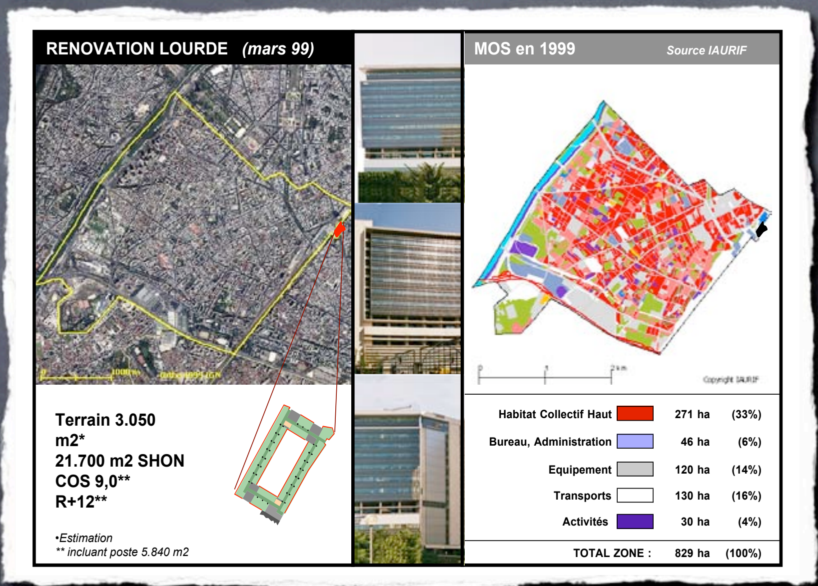
Montparnasse

✔ **Land Use**

- Office zone (around the train station) within a vast multifamily residential area
- Pretty dense Urbanism
- FAR: 12.0

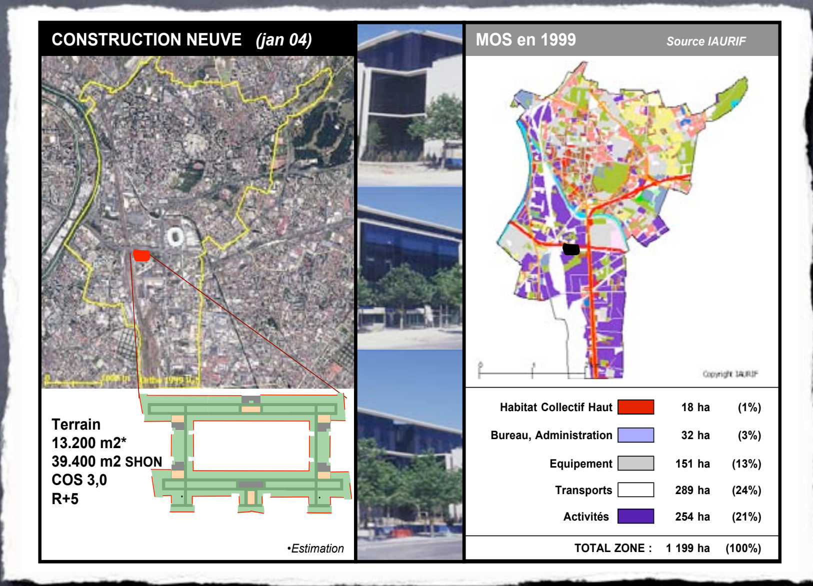
✔ **Building Aspect**

- High Building with new Curtain Wall façade (refurbishment of a 70' building)
- 12 floors, small floors & limited open space



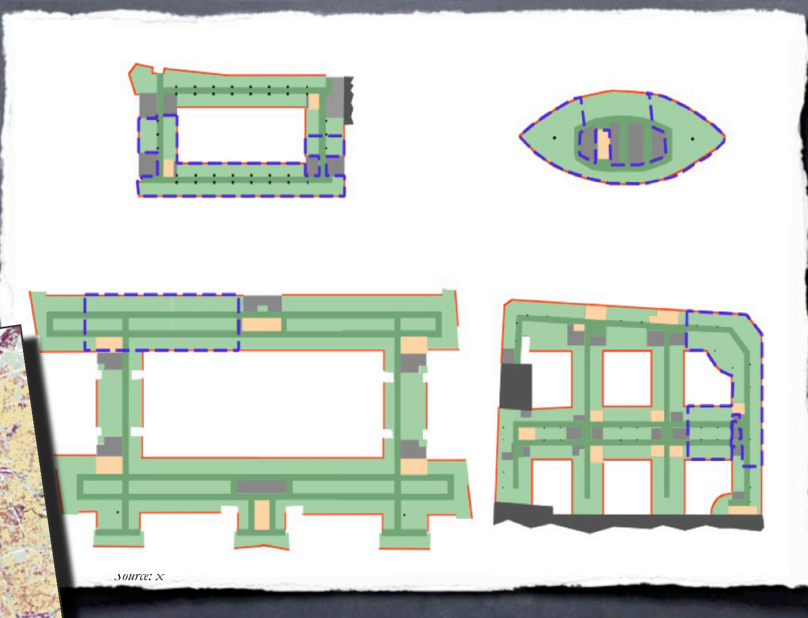
St Denis

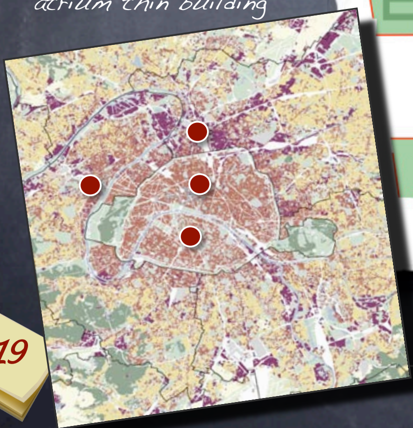
- ✓ Land Use
  - New Emerging office zone within a vast Industrial area
  - Widespread Urbanism
  - FAR: 3.0
- ✓ Building Aspect
  - Low Rise building with glass curtain wall facade
  - 6 floors, extra-large Floors & extra wide open space



4 Different Floor Plans

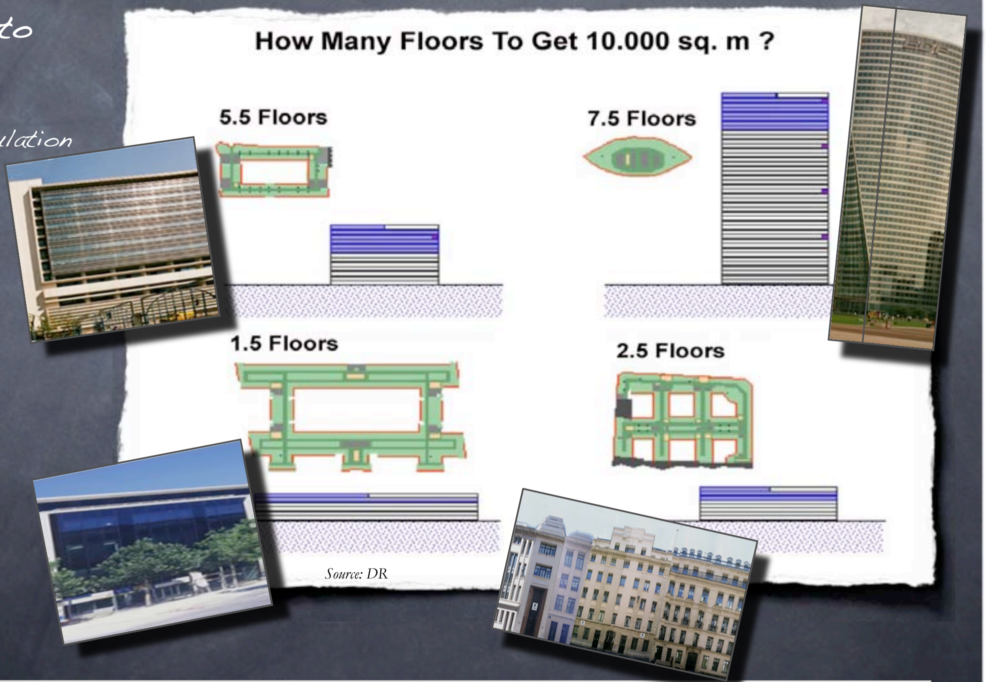
- ✓ Small Floors
  - Open vs. Closed Space
  - Atrium vs. small core
- ✓ Large Floors
  - Huge Space & atrium and thick building ...
  - ... Large Space, small atrium thin building





What About Large Tenants ?

- ✔ From floors to floors
  - Small units…
  - … vertical circulation
- ✔ From side to side
  - Large Units…
  - … horizontal circulation

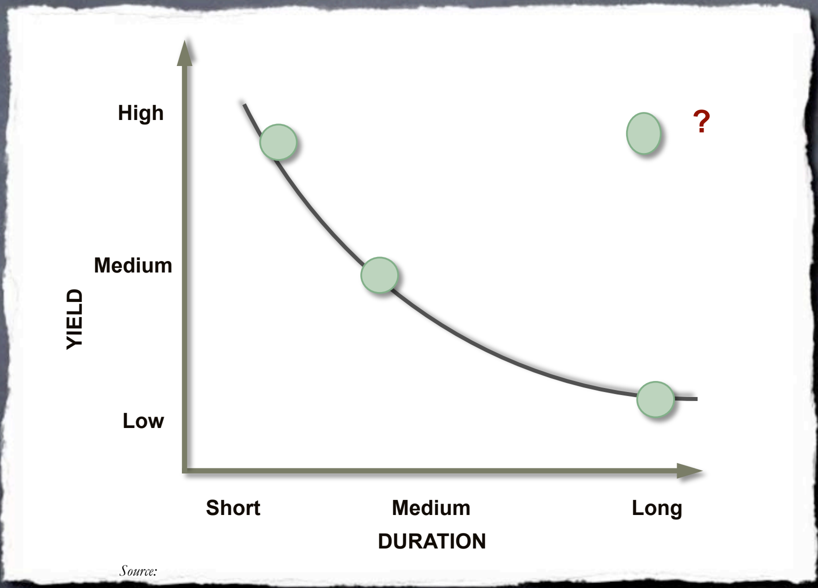


II -RE Investors Types

Correlation Between Duration & Yield

✔ Short Term Investment
- Significant return comes from K-Gain, not revenue
- K-Gain is capture once in a cycle, therefore high return is not sustainable in the long run

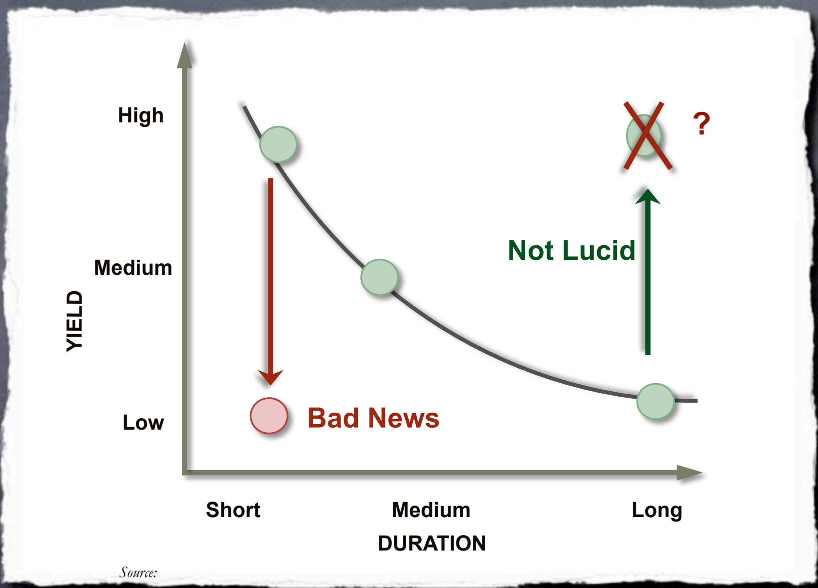
✔ Long Term Investment
- Based on income producing assets
- Kind of fixed income, low but sustainable



Dangerous Extremes

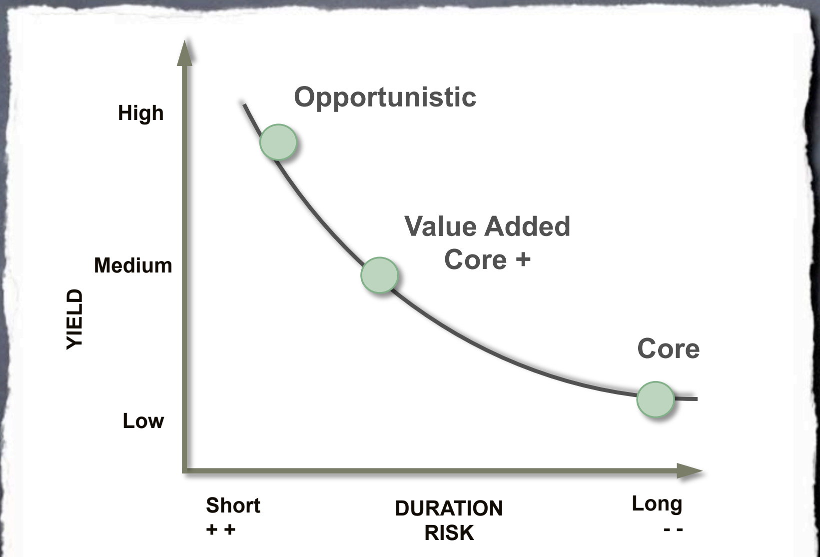
✔ Long High Return
- Dream comes true...
- ... not very lucid...
- ... arbitrage will happens to substitute cheaper equity

✔ Short Low Return, Immediate Losses
- Nightmare may come
- Rapid Reaction needed
- Split milk notion



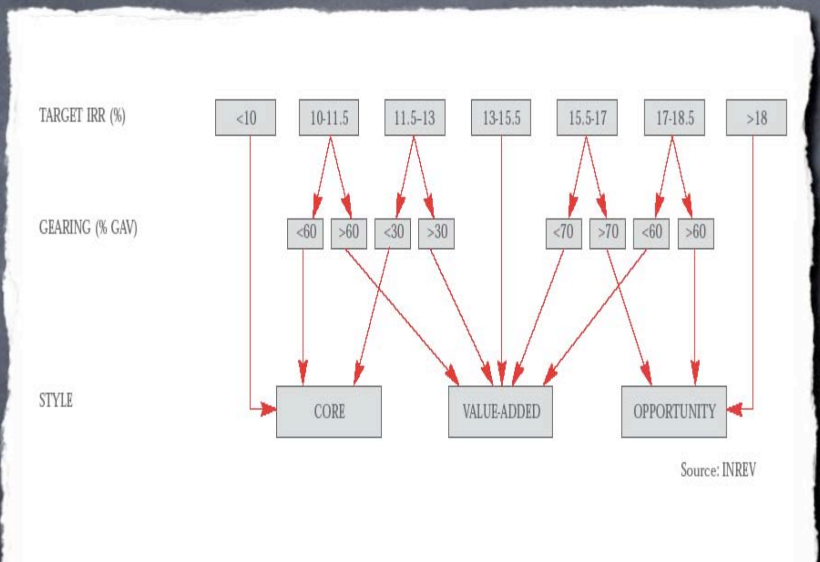
Mapping Of Investors 1/2

- ✔ Core Investors
  - Long Term
  - No Risk
  - Low Return
- ✔ Opportunistic Investors
  - Short/Middle Term
  - High Risk
  - High Return
- ✔ Value Added Investors
  - Middle/Long Term
  - Limited Risk
  - Medium/Low Return



Mapping Of Investors 1/2

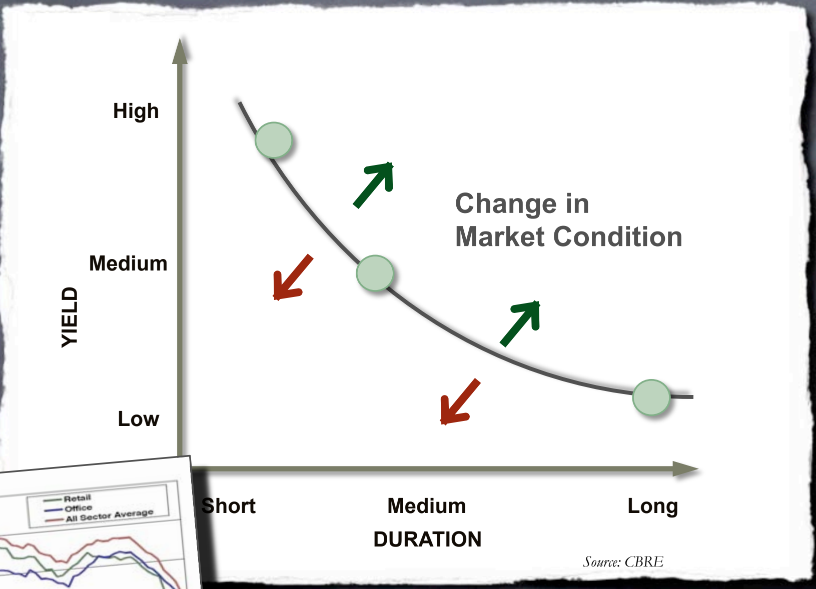
- ✔ Correlation
  - Between Risk & Return
  - Between Leveraged Return and gearing
- ✔ Cyclical Parameters
  - Boom: IRR & gearing go up
  - Recession: IRR & gearing go down

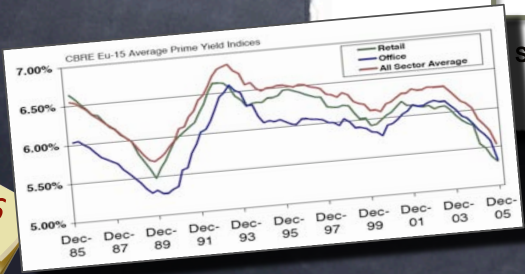


Source: INREV

Movements Are Possible 1/2

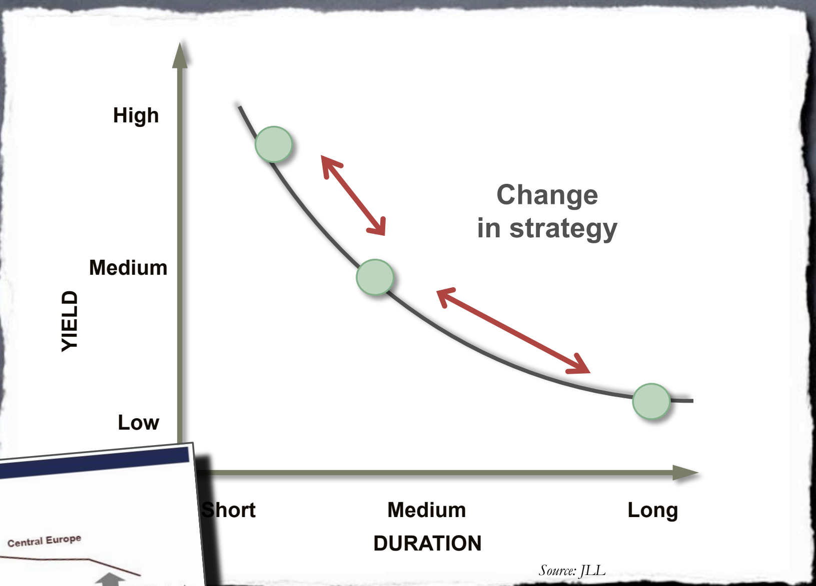
- ✔ Market May Affect
  - Duration
  - Return
- ✔ Long Term Tendency to Yield Decrease
  - Core Investment pays less
  - Risk Premium vanishes

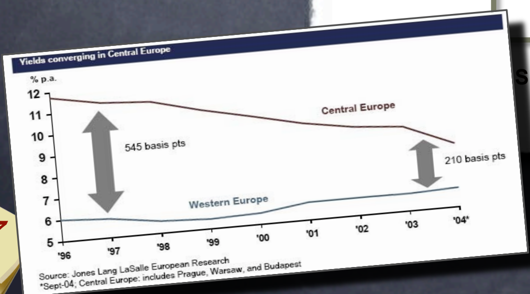




Movements Are Possible 2/2

- ✔ Strategy Change
  - Adaptive behavior
  - From core to core +
  - From Opportunistic to Value added
- ✔ Darwinist Adaptation
  - To Competition
  - To environment (risk) evolution





Simplistic Presentation

- ✔ Core
  - Highly risk adverse
  - Reasonably leveraged Investors
  - Looking for Revenues from Income producing assets
- ✔ Opportunistic
  - Highly risk taker
  - Highly leveraged Investors
  - Looking for Gains from asset work out

	Opportunistic	Core
DURATION	ST / MT	LT
Yield DEBT	IRR : 20% + LTV : 70%	CAP RATE : 6% - 7% LTV : 0 - 50%
RISK EXIT	YES YES	NO NO*
DEPENDANCY	Lenders, LT Investors	Tenants
ORIGIN EQUITY	Anglo saxon Fund Raising	French & European Fund Allocation/Raising

* Limited Impact In Cash Flows

Source:

Basic Calculus

- ✔ Weighted Cost Of Capital
  - A 9.5% return underlying investment is feasible with...
  - ... 70% debt @ 5.0%...
  - Even if equity requires 20.0%

	%	Cost	Weighted Cost
EQUITY	70%	5,0%	3,5%
DEBT	30%	20,0%	6,0%
TOTAL	100%		9,5%

	%	Cost	Weighted Cost
EQUITY	95%	5,0%	4,8%
DEBT	5%	25,0%	1,3%
TOTAL	100%		6,0%

	%	Cost	Weighted Cost
EQUITY	50%	5,0%	2,5%
DEBT	50%	7,0%	3,5%
TOTAL	100%		6,0%

LTV 70%

IRR 20%

Debt 5%

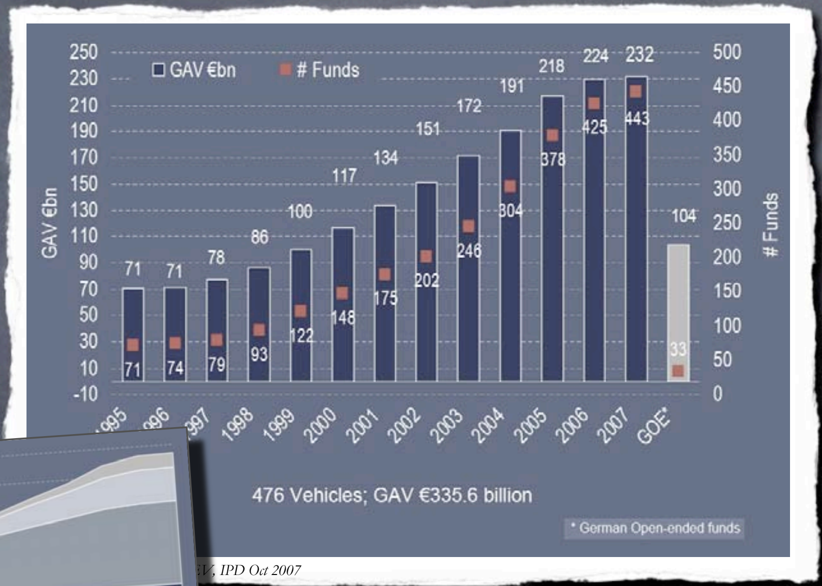
→ ULV IRR: 9,50%

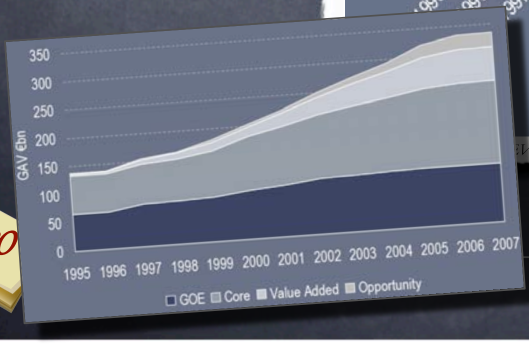
Source: x

Market Growth (Launch Year)

✔ A Growing Business
- 3 x bigger in ten years
- 5 x more players

✔ Predominance
- German Open Ended Funds
- Core Funds

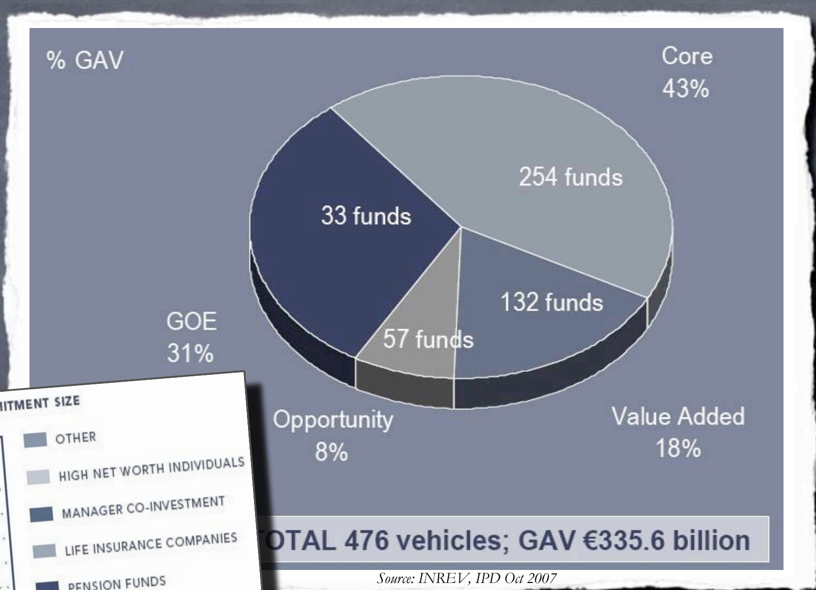




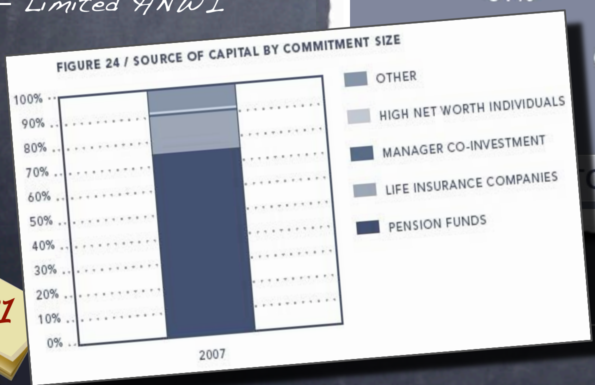
Fund By Style

✔ Typology
- From Core to "Opportunistic"
- Case of German Open Ended Funds

✔ Origin
- Mainly Pension Funds
- Limited HNWI

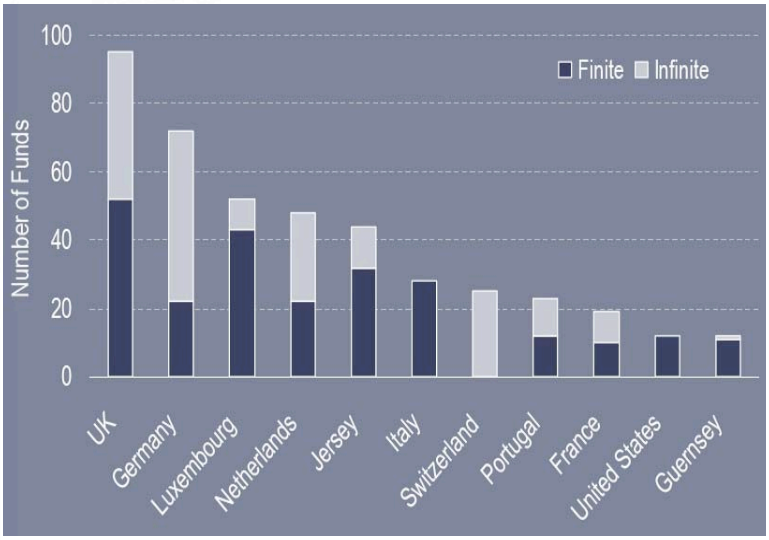


Source: INREV, IPD Oct 2007



Funds By Top Domicile

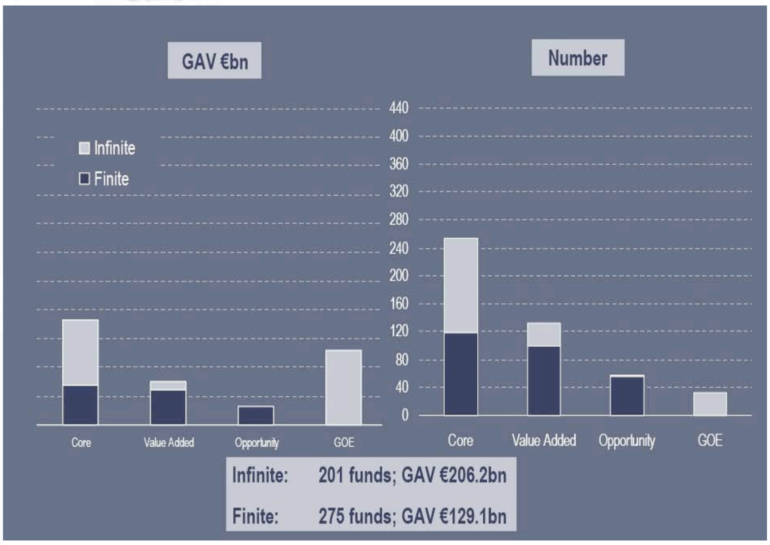
- ✔ Life Span
  - Finite...
  - ... vs. Infinite
- ✔ Domicile
  - Mainly UK, Germany
  - Luxembourg
  - Limited in France



Source: INREV, IPD Oct 2007

Funds By Style

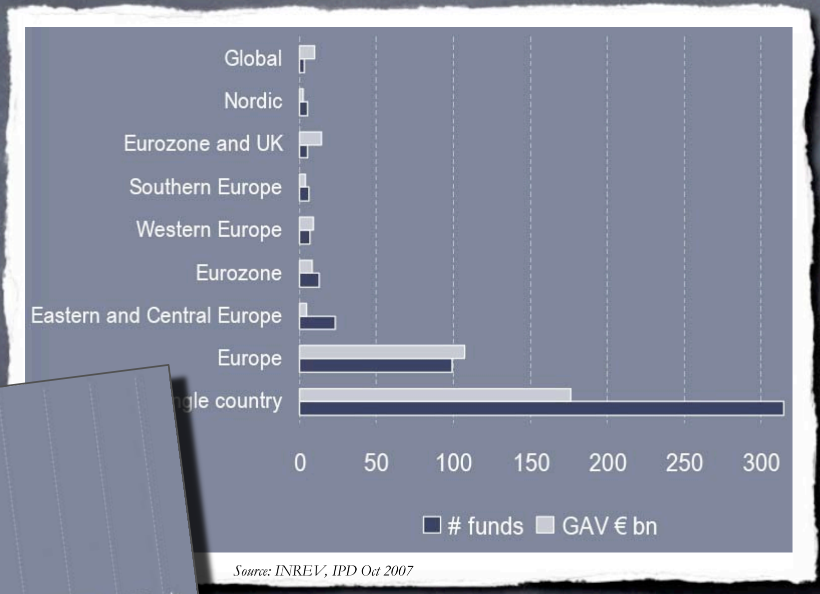
- ✔ Infinite Vehicle
  - Open Ended Fund
  - Investors could get in or out during the life of the fund without limit (except market: to go out you need a buyer)
- ✔ Finite Vehicle
  - Typical RE fund sponsored by large Investment banks
  - Whitehall, MSREF,...



Source: INREV, IPD Oct 2007

Target Sectors & Locations

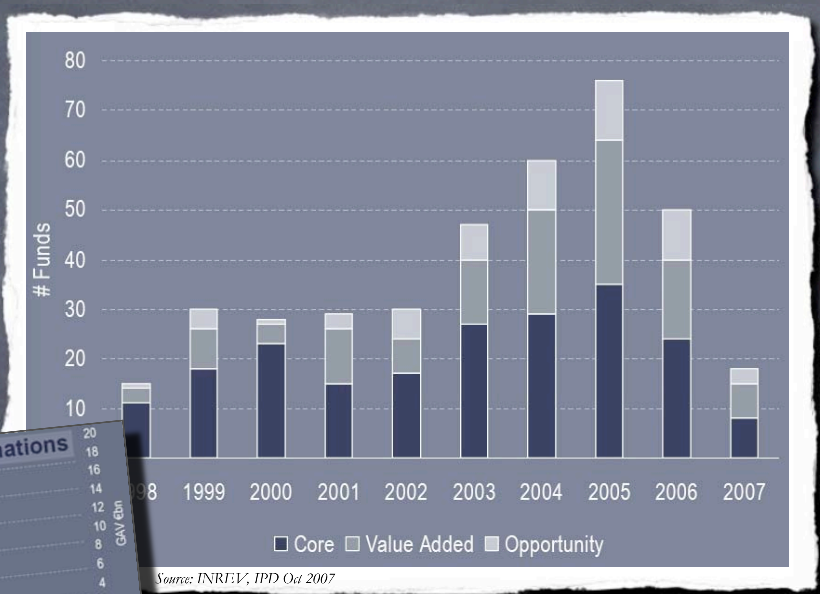
- ✔ Commitment Taken In Advance
  - Limited Geography (e.g. Western Europe)
  - Limited Activities (e.g. no office speculative development)
  - Limited Use (e.g. no residential)



Source: INREV, IPD Oct 2007

Fund Launches 1998-2007

- ✔ A Cyclical Business
  - Dependant on the underlying industry
  - Facing strong competition and constant new comers
- ✔ A Mature Industry
  - Very large multi billion $ players
  - Talented teams



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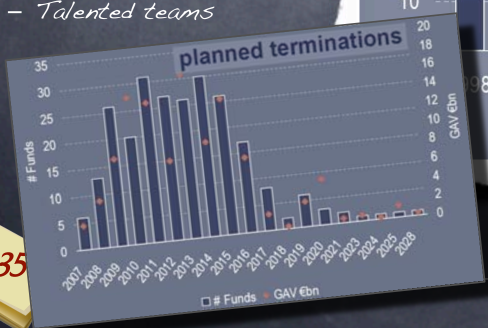


RE Market Players

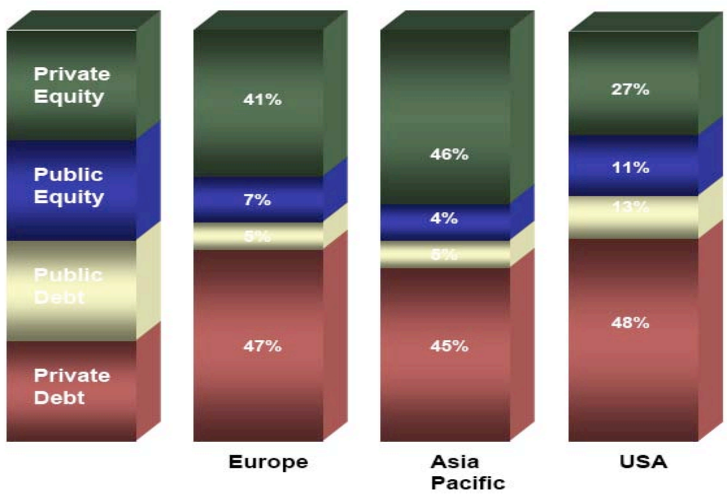
- Type Of Funding
  - Debt
  - Equity
- Source Of Funding
  - Public (Listed market)
  - Private (non listed)
- 4 Types Of Players
  - Private Equity
  - Listed Sector
  - Mortgage Bank
  - Structured Lending

	Private	Public
Equity	RE FUNDS	QUOTED PROPERTY VEHICLES
Debt	LOAN	SECURITIZATION

Source: x

Relative Market Shares

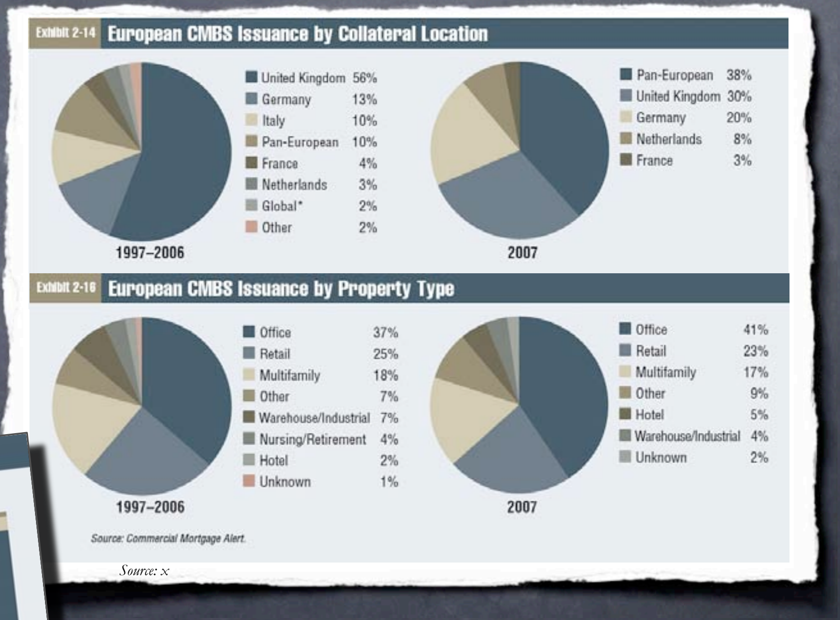
- Predominant Private Sector
  - Private Debt represents around 50%
  - Private Equity from 27 to 46%
- Public Sector
  - Public Equity is growing in the USA and Europe
  - Public Debt is (was) booming in the USA



Source: DTZ 2007

Public Debt In Europe

- ✔ Booming ?
  - Fast Growth until mid 2007...
  - ...then what ?
- ✔ Emergence Of Derivatives Sector
  - Mainly in UK
  - Generally based on IPD indexes
  - To cover some RE Exposure



Source: x

III - RE Exuberance

RE Bubble ?

- ✔ Open Discussion
  - Sub Prime
  - Other Crisis
  - Future Perspectives
- ✔ Thoughts
  - Lessons learned from History and crisis
  - The limits of highly leveraged investment
  - Net value creation or "zero sum game"?
  - "Re-buy" analysis

Source: x

Bibliography

- ✔ Forms Follows Finance
  - Carol Willis - 1995 - ISBN 1-56898-044-2 - Princeton Architectural Press.