

# International Lease Pricing

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# Warren & Selbert

- Makers of **ABC** – the leading software for financial optimization in any jurisdiction
- Helping our clients optimize their financial transactions since 1971



# International Lease Pricing

- Lease Pricing Fundamentals
- UK Lease Pricing
- US Lease Pricing
- Japanese Operating Lease Pricing
- Conclusions



# International Lease Pricing

- 
- Lease Pricing Fundamentals
    - Enhancing Lease Economics
  - UK Lease Pricing
  - US Lease Pricing
  - Japanese Operating Lease Pricing
  - Conclusions

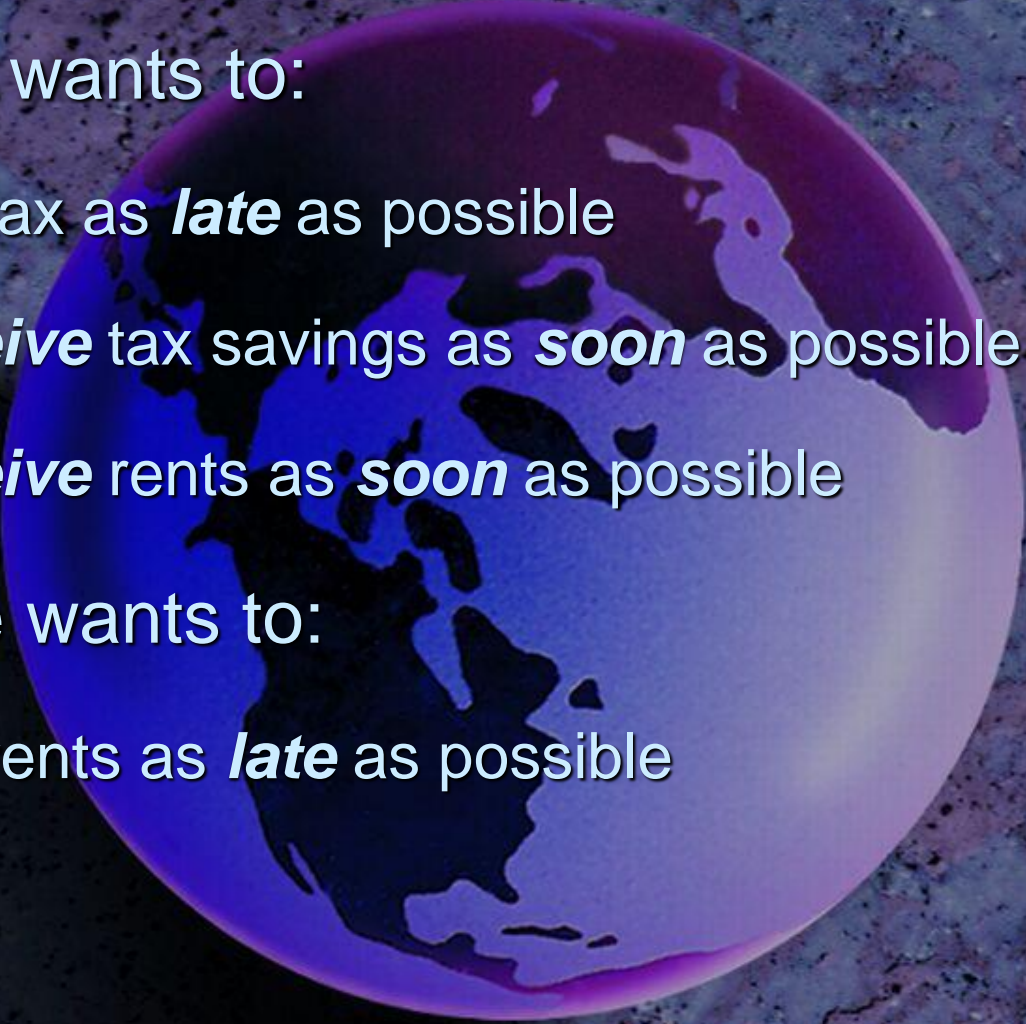


# Lease Pricing Fundamentals

- Fundamental concept is the *time value of money*:
  - Beneficial to **receive** payments as **soon** as possible, and
  - **Make** payments as **late** as possible



# Lease Pricing Fundamentals

- 
- Lessor wants to:
    - **Pay** tax as **late** as possible
    - **Receive** tax savings as **soon** as possible
    - **Receive** rents as **soon** as possible
  - Lessee wants to:
    - **Pay** rents as **late** as possible




# Lease Pricing Fundamentals

- Lessor wants to:
  - *Pay* tax as *late* as possible
  - *Receive* tax savings as *soon* as possible
  - *Receive* rents as *soon* as possible
- Lessee wants to:
  - *Pay* rents as *late* as possible
- Rents usually deferred as lessee has a higher time value of money

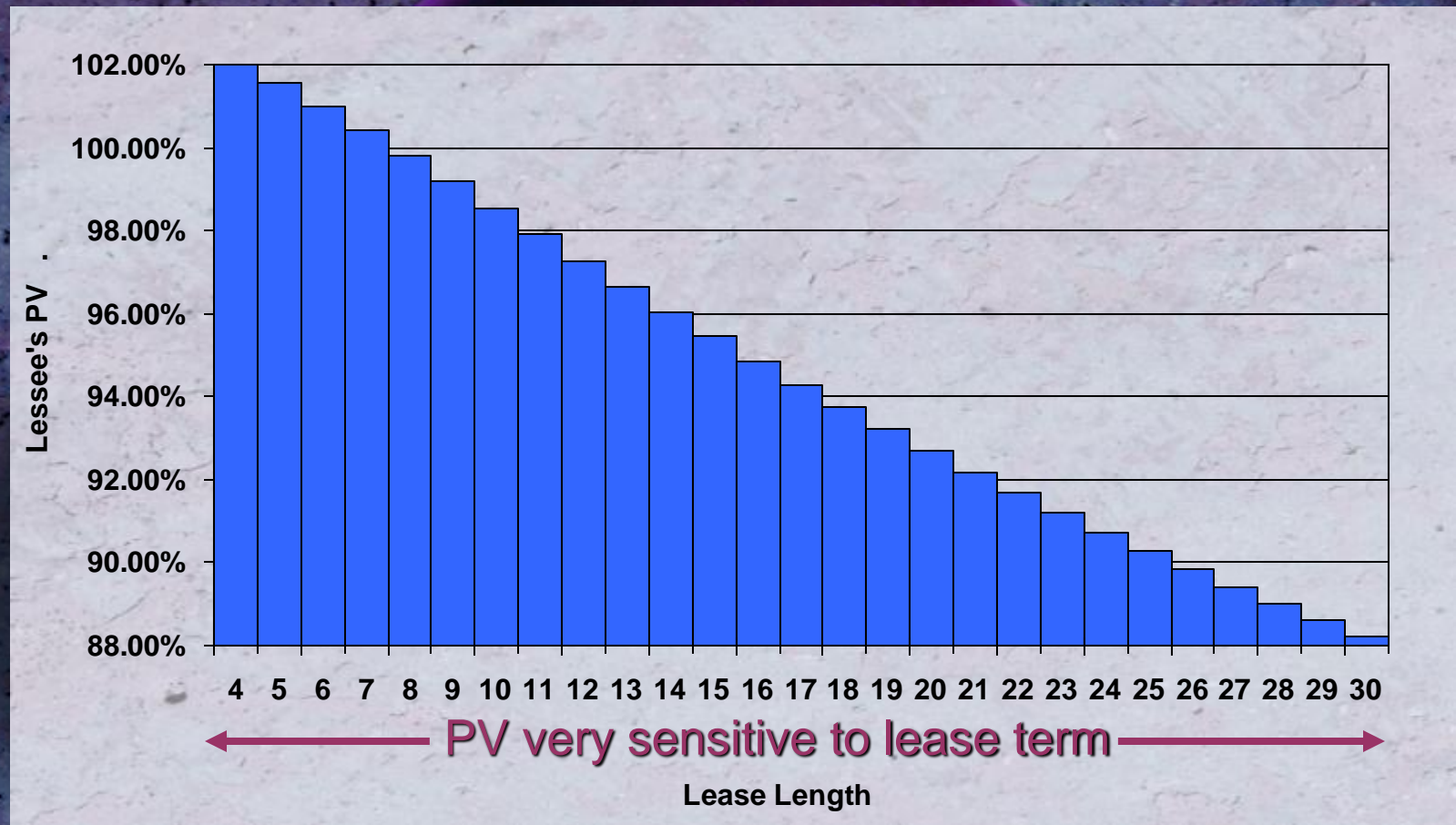


# Lease Pricing Fundamentals: Enhancing Lease Economics

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- Rental deferral for the lessee
    - Long lease terms
    - Rental escalation or rent holidays
    - Low rents followed by a large purchase option
  - Tax deferral for the lessor
    - Fast asset depreciation (capital allowances)
    - A back-ended tax recognition of rents
  - High interest rates

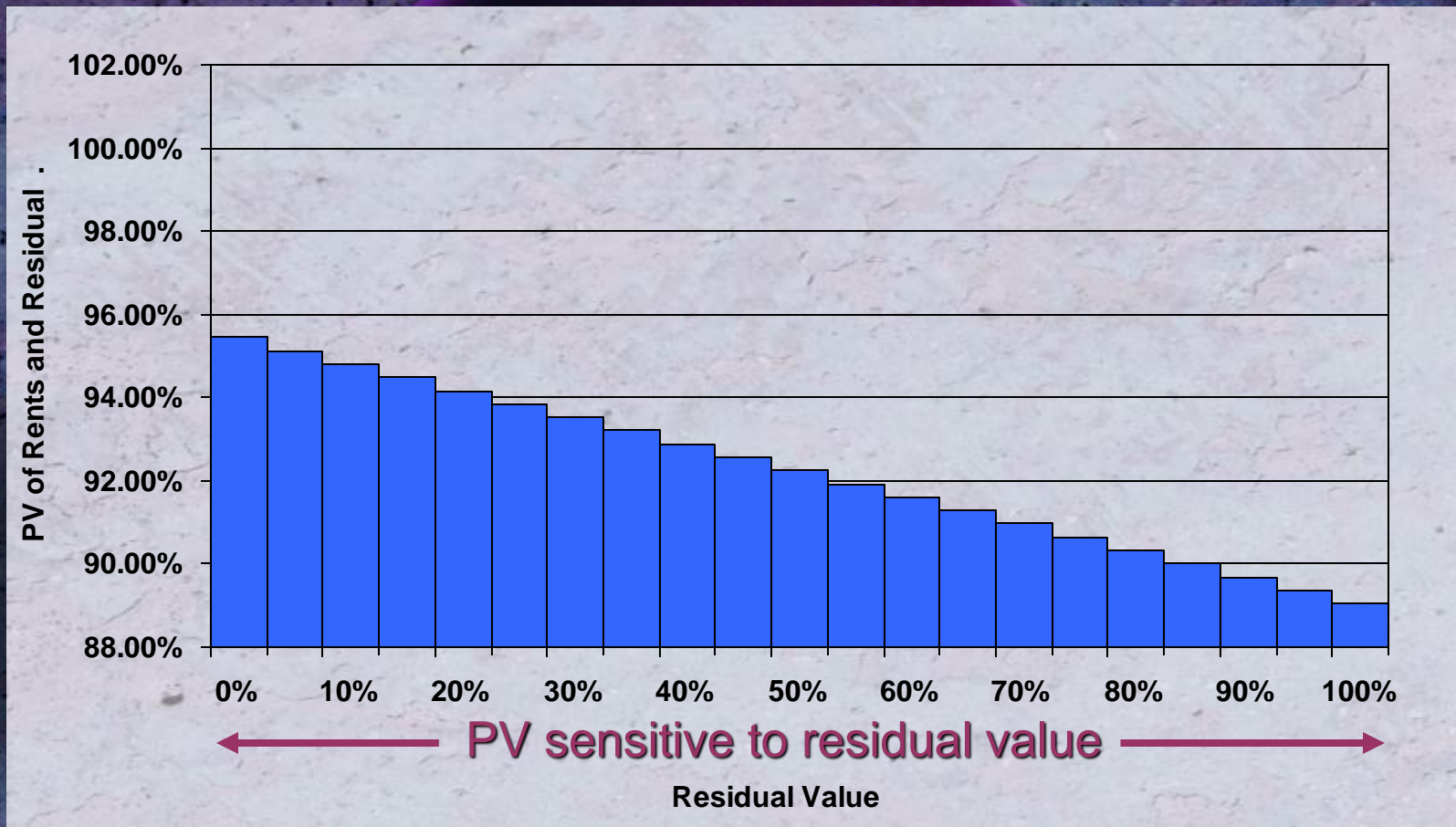


# Lease Pricing Fundamentals: Sensitivity of PV to Lease Length



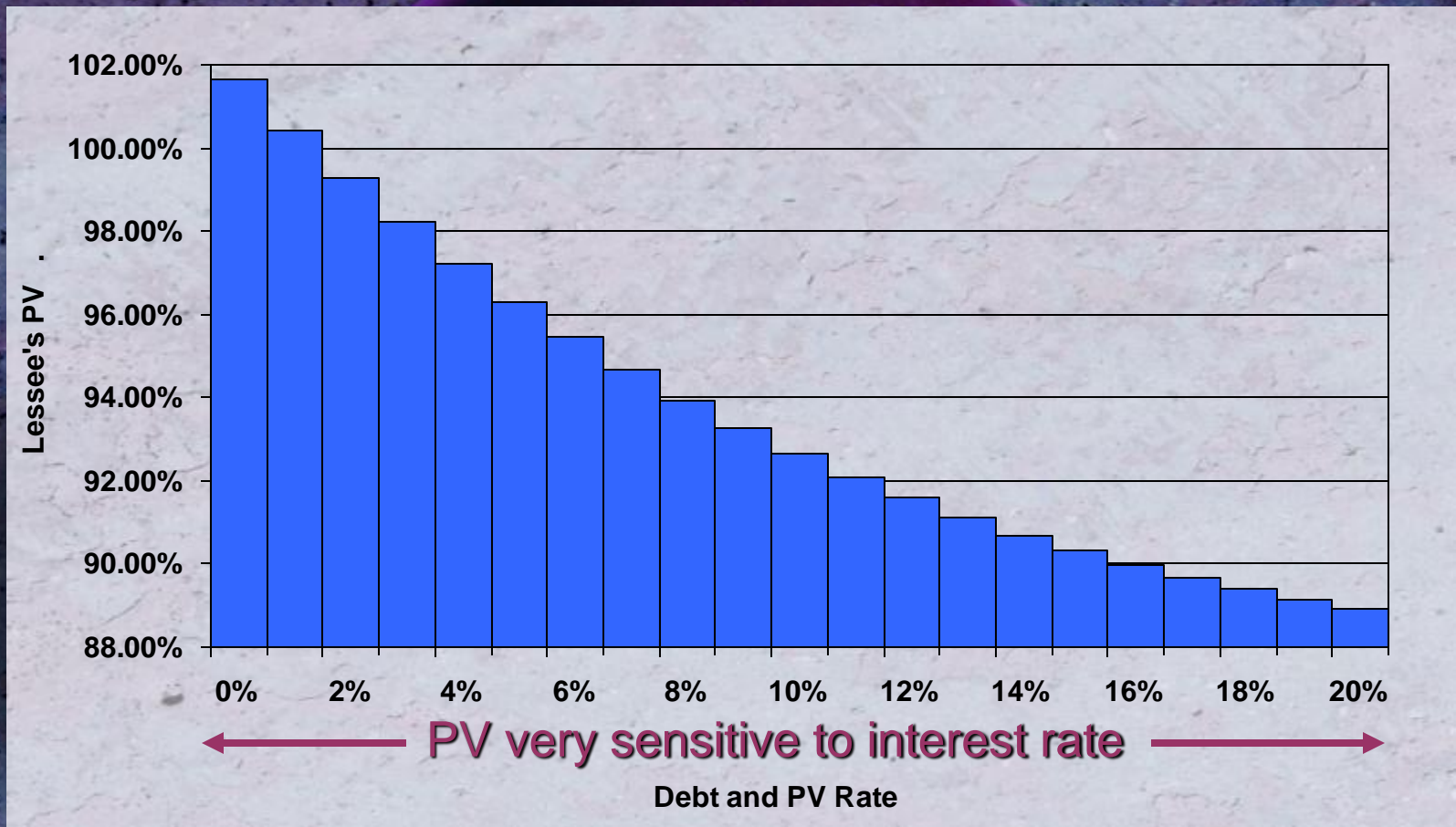


# Lease Pricing Fundamentals: Sensitivity of PV to Residual Value





# Lease Pricing Fundamentals: Sensitivity of PV to Interest Rate





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# International Lease Pricing

## Lease Pricing Fundamentals

### ■ UK Lease Pricing

- Long Funding Lease Taxation
- Accounting under IAS

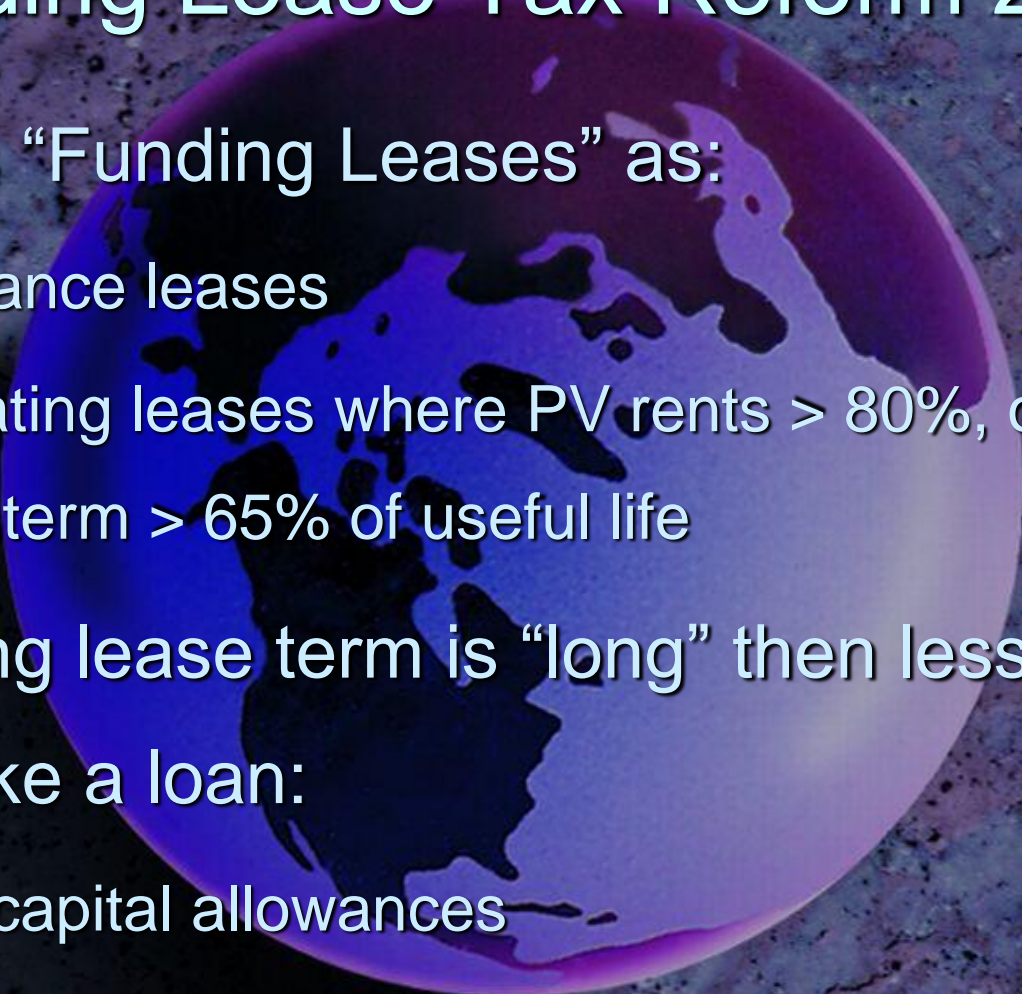
### ■ US Lease Pricing

### ■ Japanese Operating Lease Pricing

### ■ Conclusions

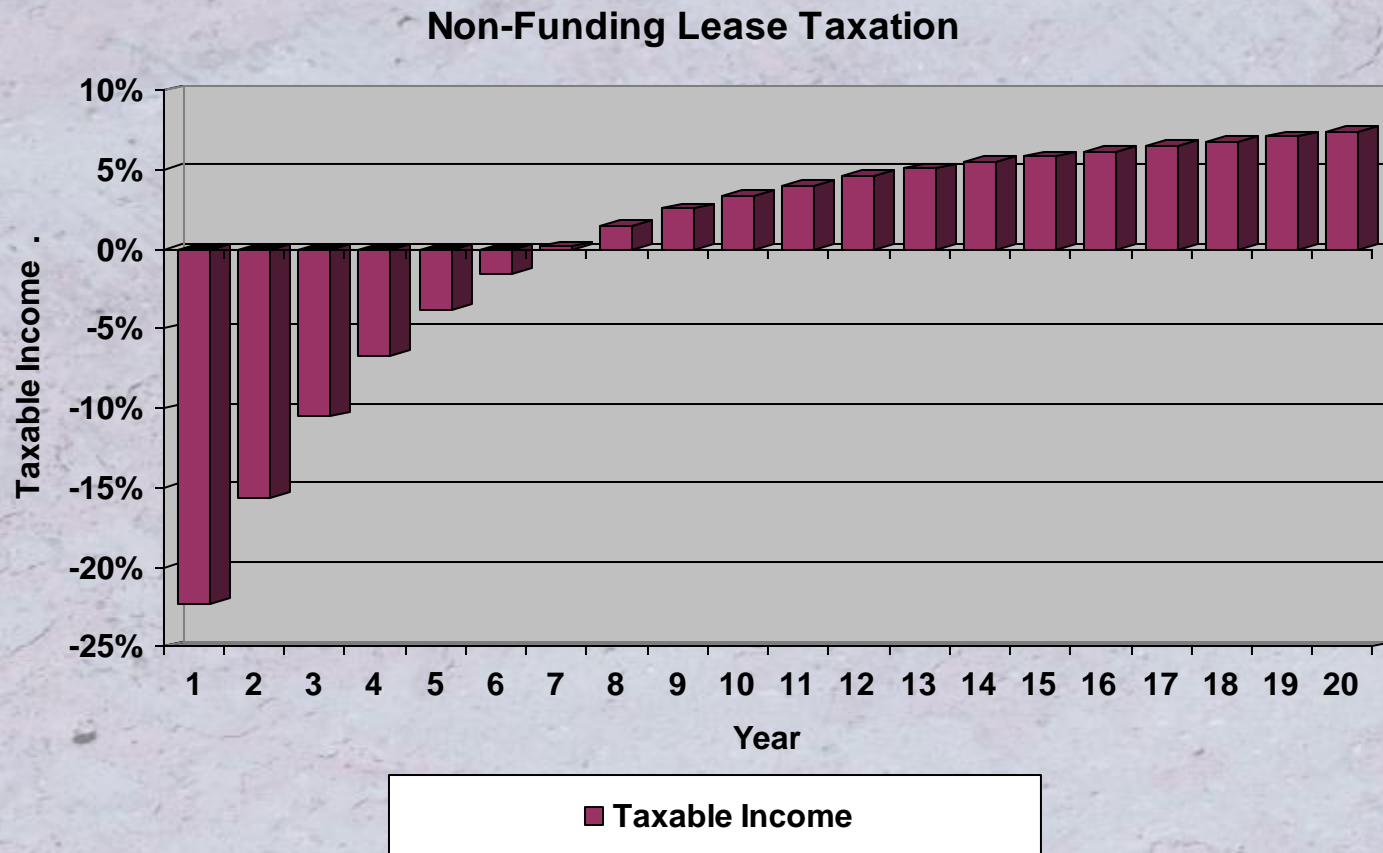


# UK Lease Pricing: Funding Lease Tax Reform 2006

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- Defines “Funding Leases” as:
    - All finance leases
    - Operating leases where PV rents > 80%, or lease term > 65% of useful life
  - If funding lease term is “long” then lessor taxed like a loan:
    - Lose capital allowances
    - Pay tax on interest element of rent instead



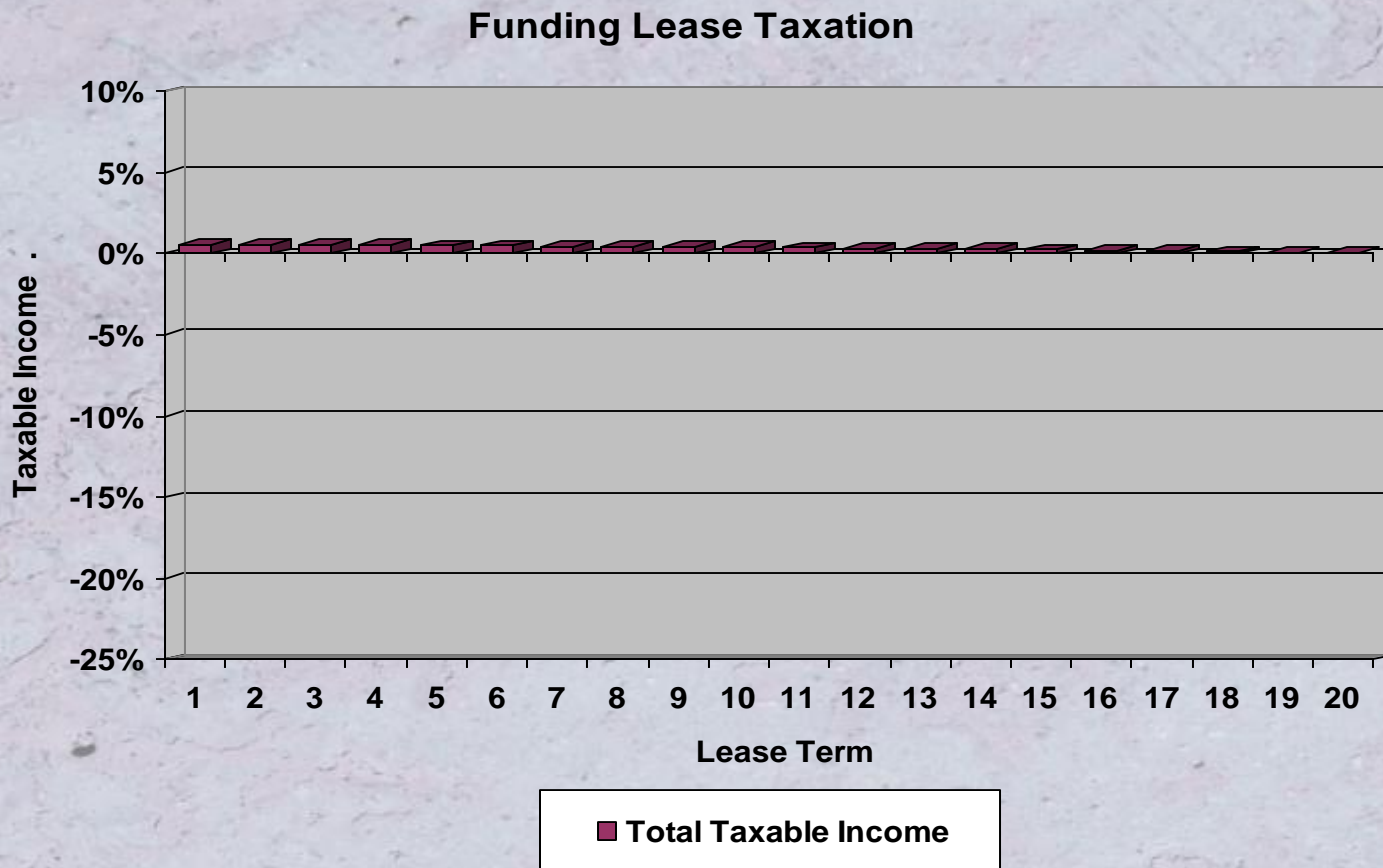
# UK Lease Pricing: Non-Funding Lease Taxation



Tax savings in early years



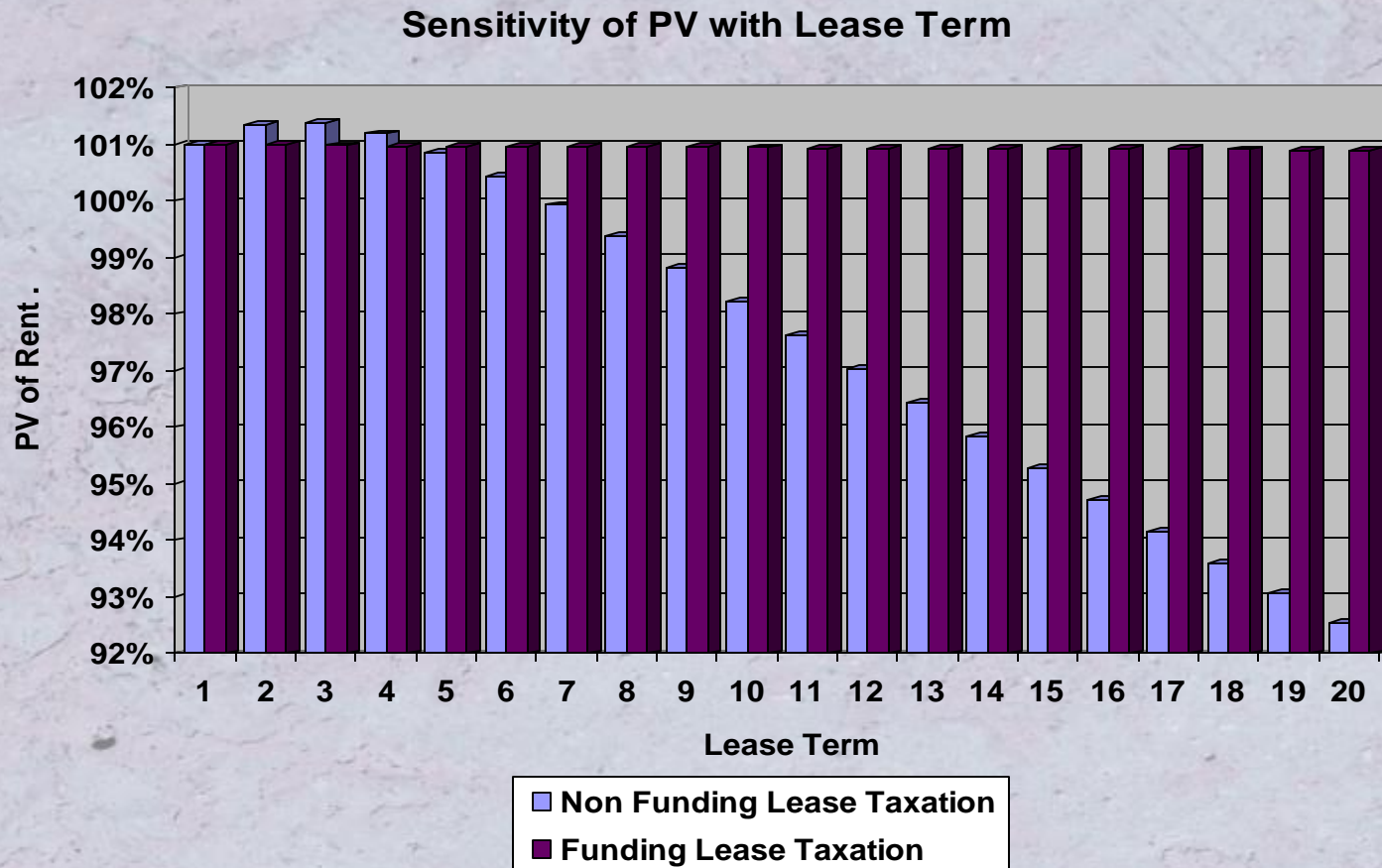
# UK Lease Pricing: Funding Lease Taxation



No tax deferral



# UK Lease Pricing: Sensitivity to Lease Length



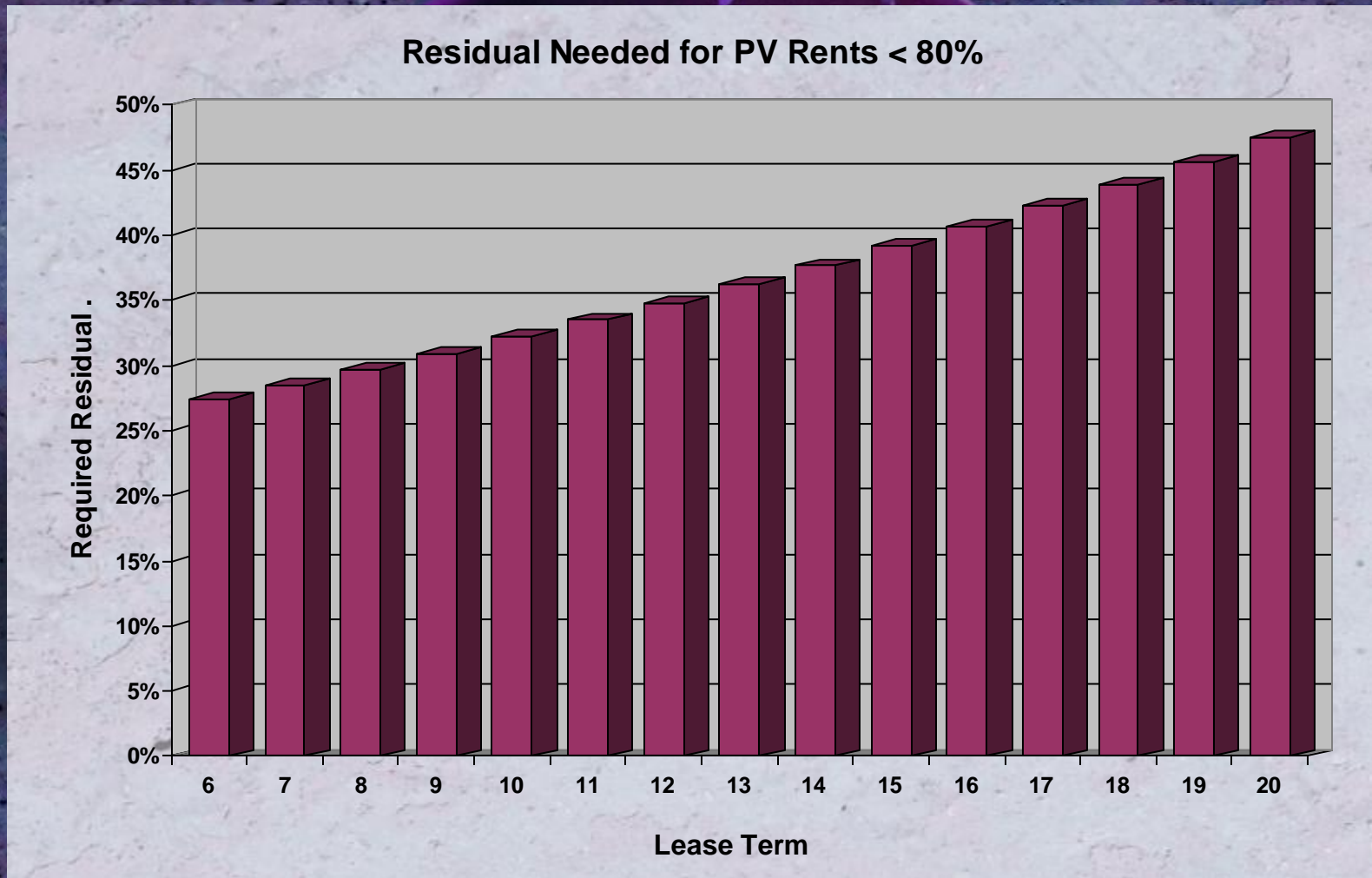


# UK Lease Pricing: Avoiding Long Funding Lease Taxation

- Avoid long funding lease taxation if lease is a:
  - Ship lease to a tonnage tax company, or
  - “Short” lease (covered later), or
  - Non-funding lease:
    - Operating lease, and
    - Lease term  $< 65\%$  of useful life, and
    - PV Rents (at implicit rate)  $< 80\%$
- 80% PV test requires large RV assumptions...



# UK Lease Pricing: Avoiding Funding Lease Taxation





# UK Lease Pricing: Avoiding Funding Lease Taxation

- “Short lease” if term is
  - less than 5 years, or
  - between 5 and 7 years, and
    - Residual value less than 5%, and
    - 1<sup>st</sup> year rent is more than 90% of 2<sup>nd</sup> year rent, and
    - 3<sup>rd</sup> year onwards rents are less than 110% of 2<sup>nd</sup> year rent
- These short lease definitions give rise to two theoretical optimized rent profiles...



# UK Lease Pricing: Optimal Short Leases



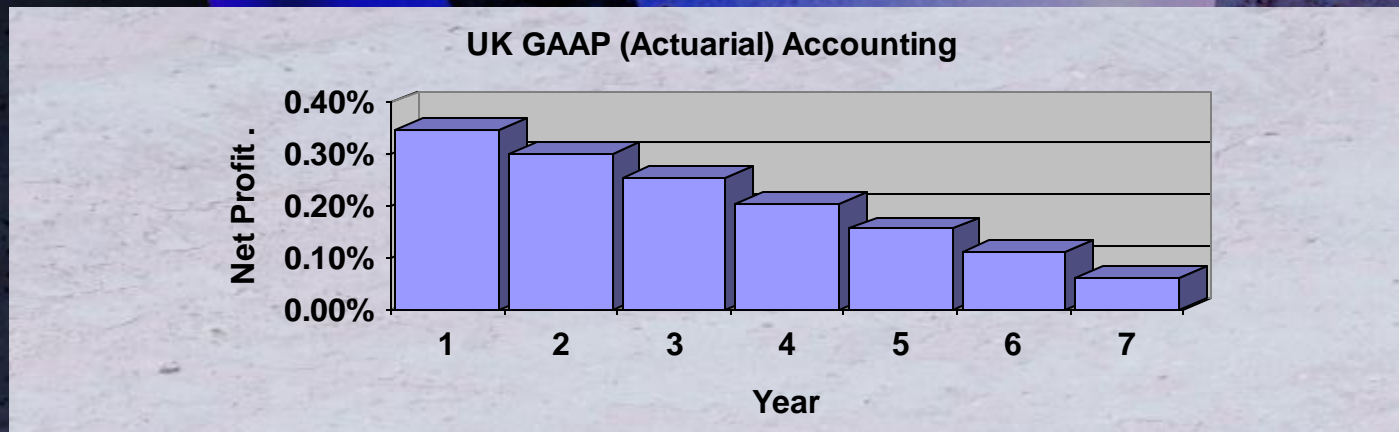
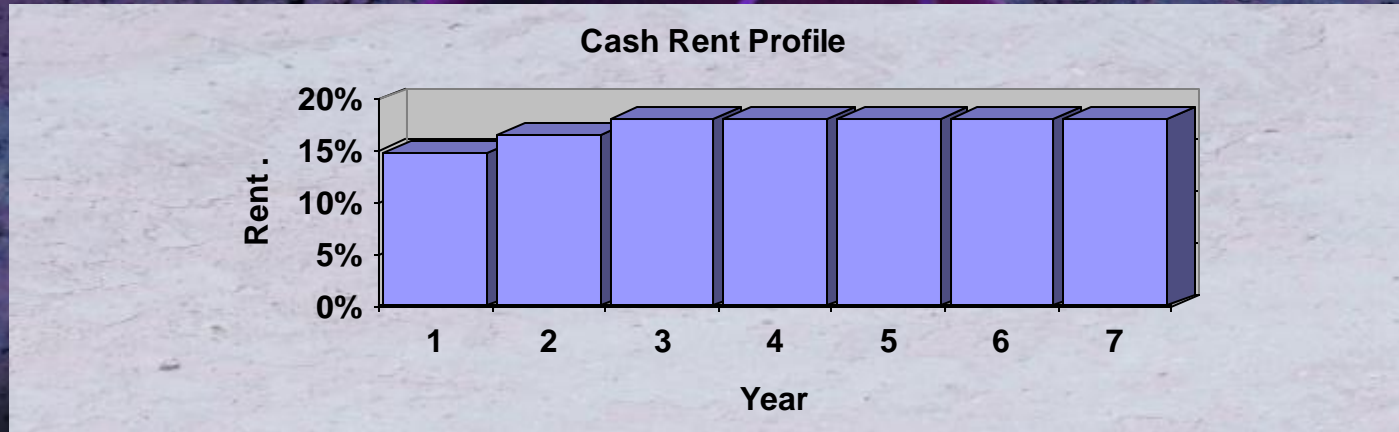


# UK Lease Pricing: UK GAAP

- UK leases priced by charging a margin on an after-tax investment balance
- UK GAAP uses a similar method:
  - Profit in finance lease spread according to after-tax investment balance (actuarial accounting)
- This means that the profits are front-ended



# UK Lease Pricing: UK GAAP



Actuarial profit spread in proportion to after tax investment balance



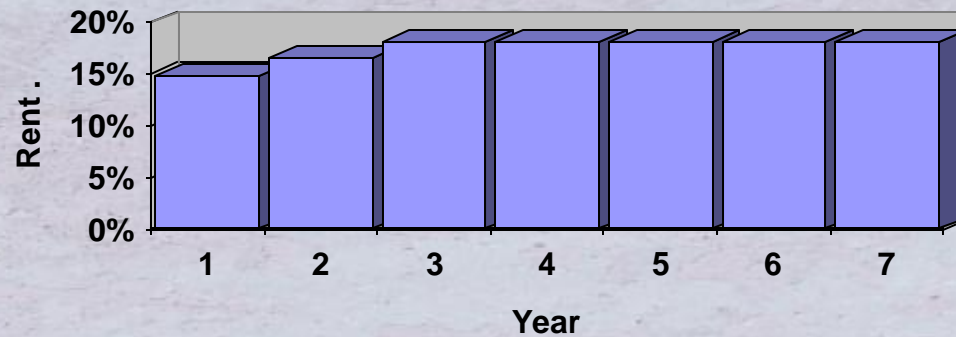
# UK Lease Pricing: IAS Accounting

- UK companies now use IAS accounting
- IAS profit is difference between
  - Gross income (essentially interest element of rent)
  - Lessor's costs (cost of funds interest)
- This can mean the profit in the early years is a lot less

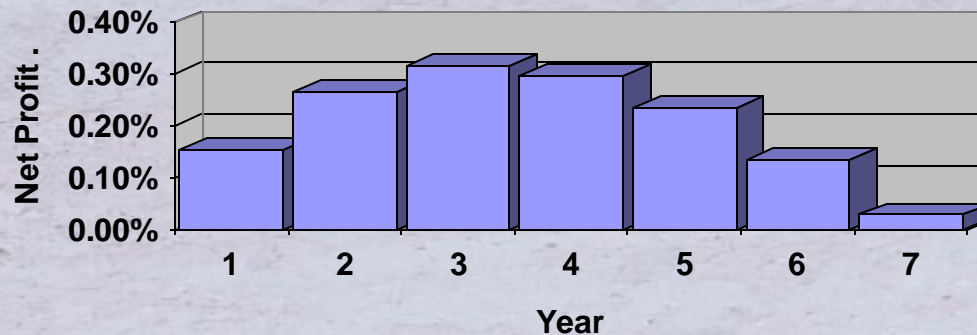


# UK Lease Pricing: IAS Accounting

Cash Rent Profile



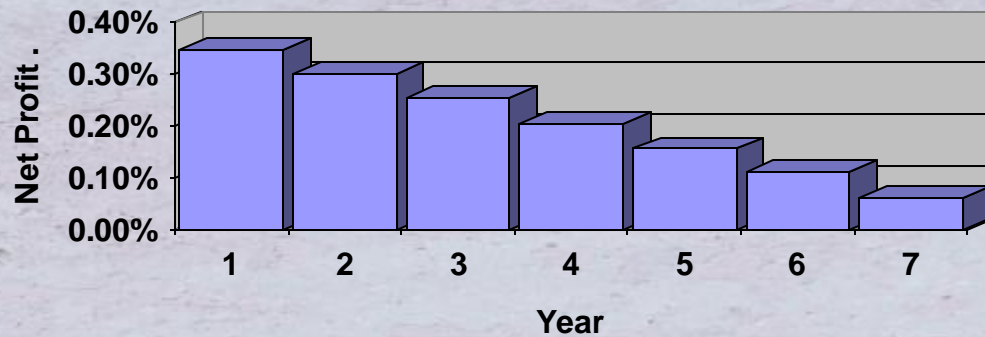
IAS Accounting



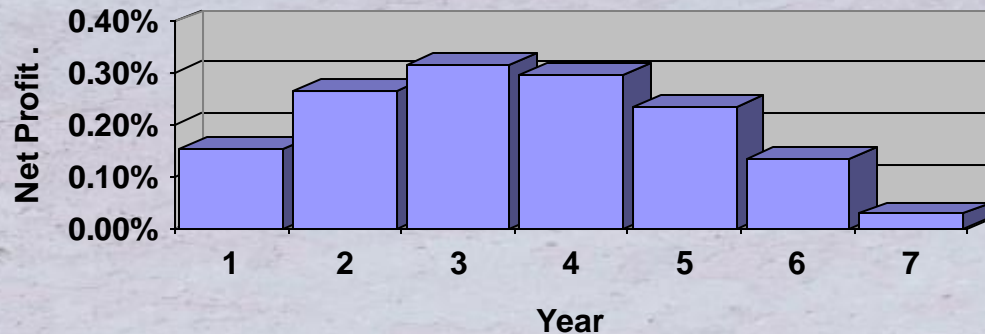


# UK Lease Pricing: UK GAAP vs. IAS Accounting

UK GAAP (Actuarial) Accounting



IAS Accounting





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# International Lease Pricing

☒ Lease Pricing Fundamentals

☒ UK Lease Pricing

■ US Lease Pricing

– MISF Yield and Leveraging

– FASB Accounting

■ Japanese Operating Lease Pricing

■ Conclusions

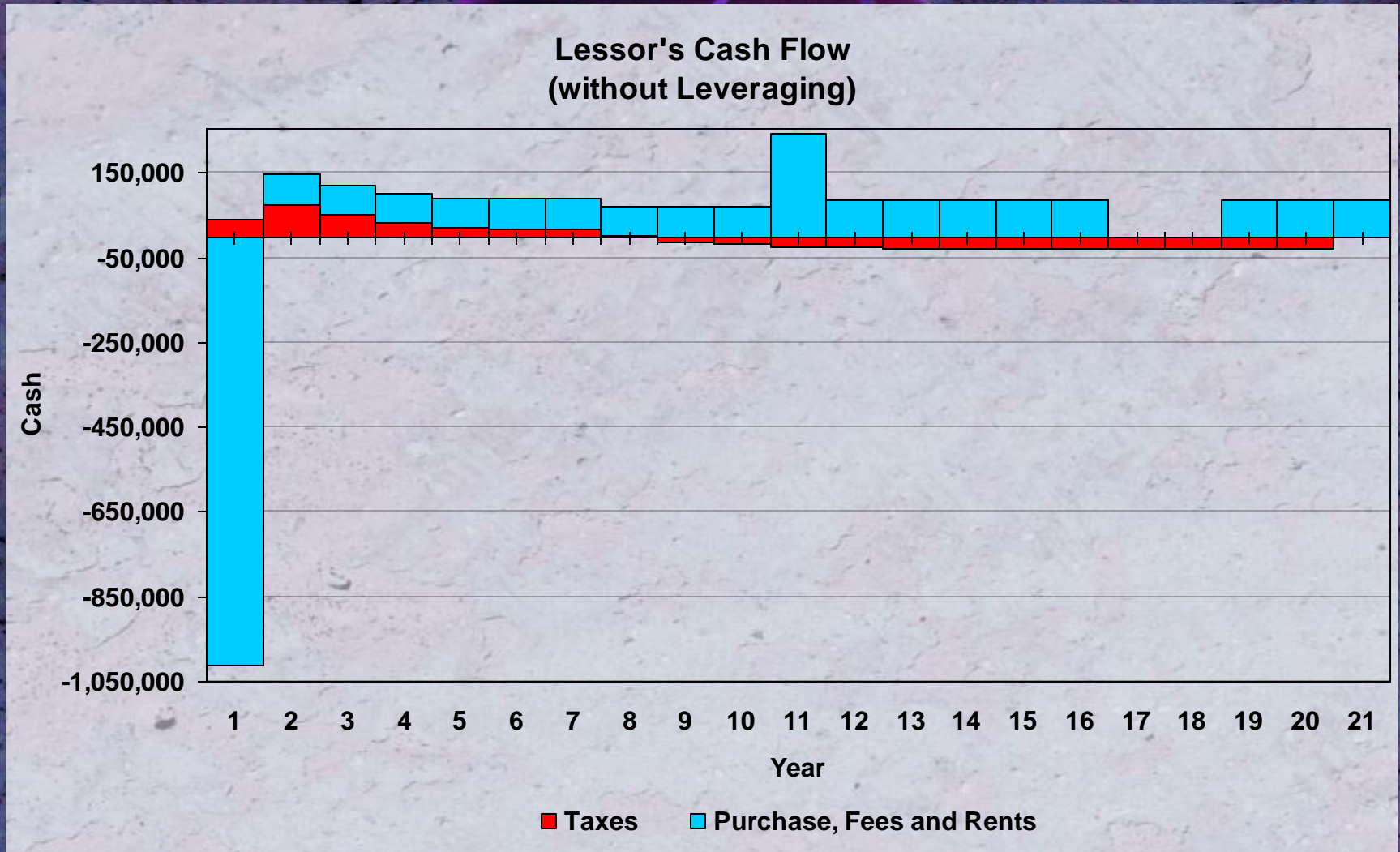


# US Lease Pricing: Multiple Investment Sinking Fund

- US lessors price return as an MISF yield on their invested equity
- Similar to cost-of-funds plus margin in the UK
- Yield rate charged when invested
- But 0% rate when in sinking fund (re-invested)

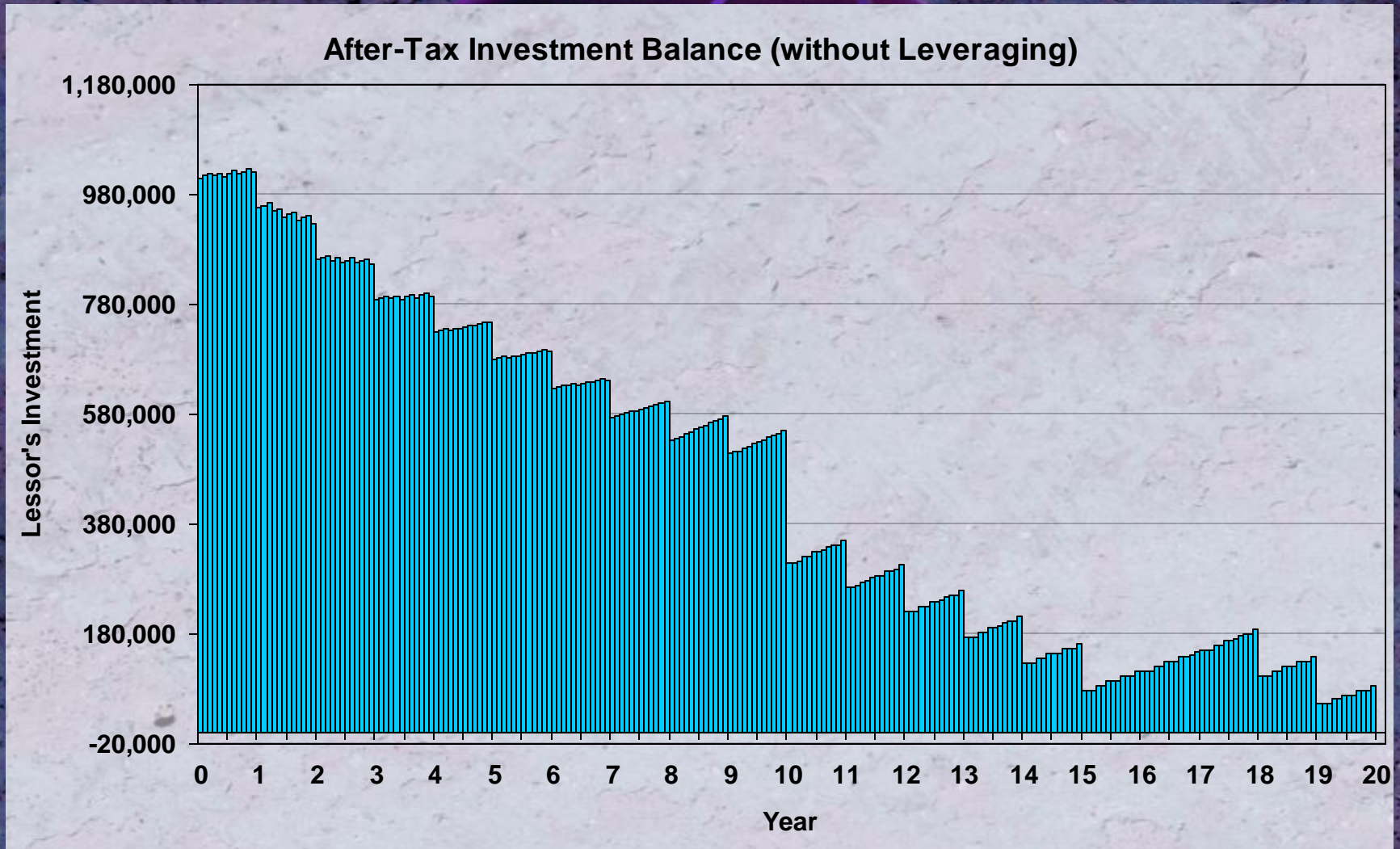


# US Lease Pricing: Cash Flow (without Leveraging)





# US Lease Pricing: After-Tax Investment Balance



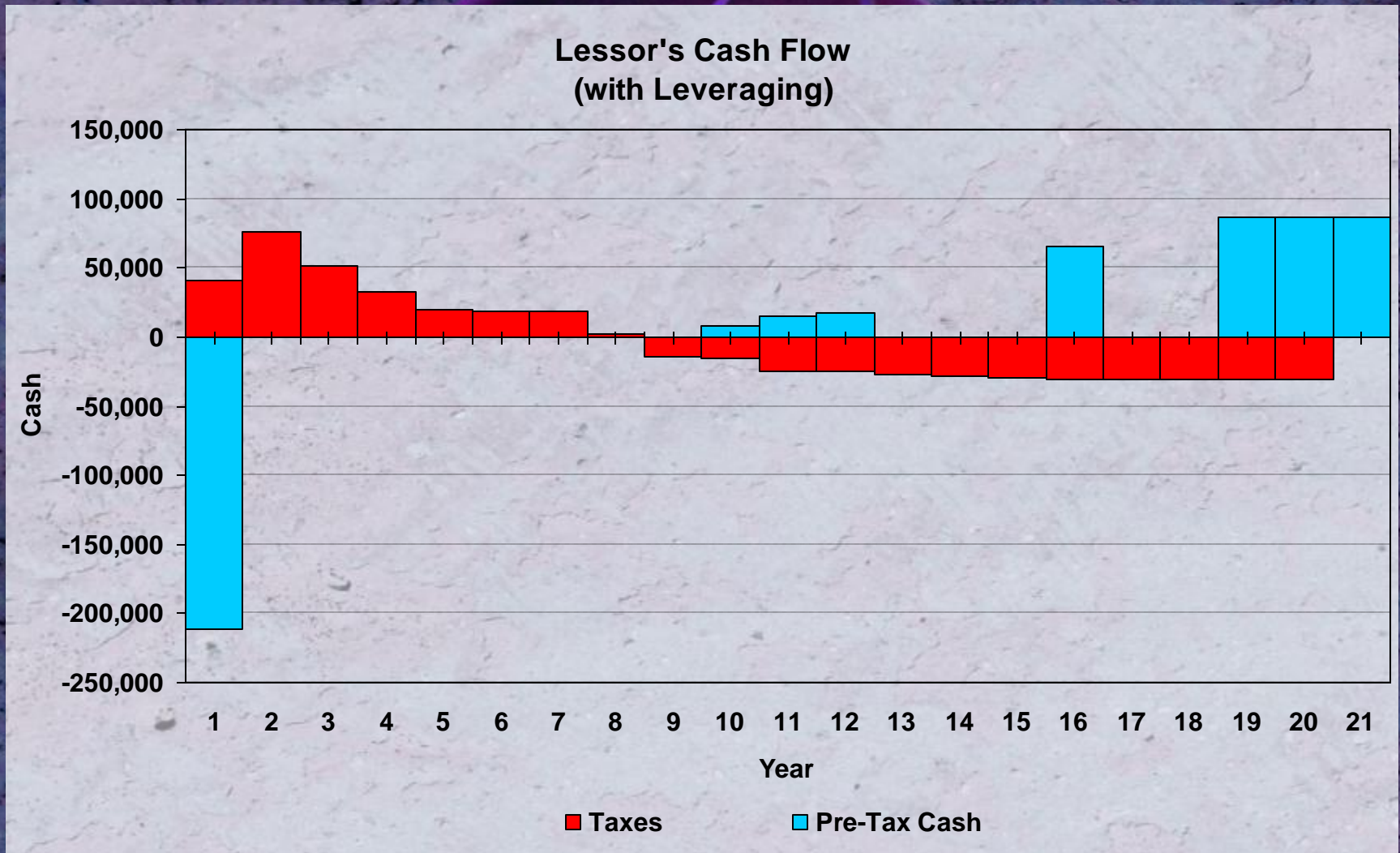


# US Lease Pricing: Leveraging

- US leases are often leveraged:
  - Lessor borrows up to 80% (sometimes 87%) non-recourse debt
  - After-tax debt is cheaper than their required MISF yield
  - Leveraging enhances economics

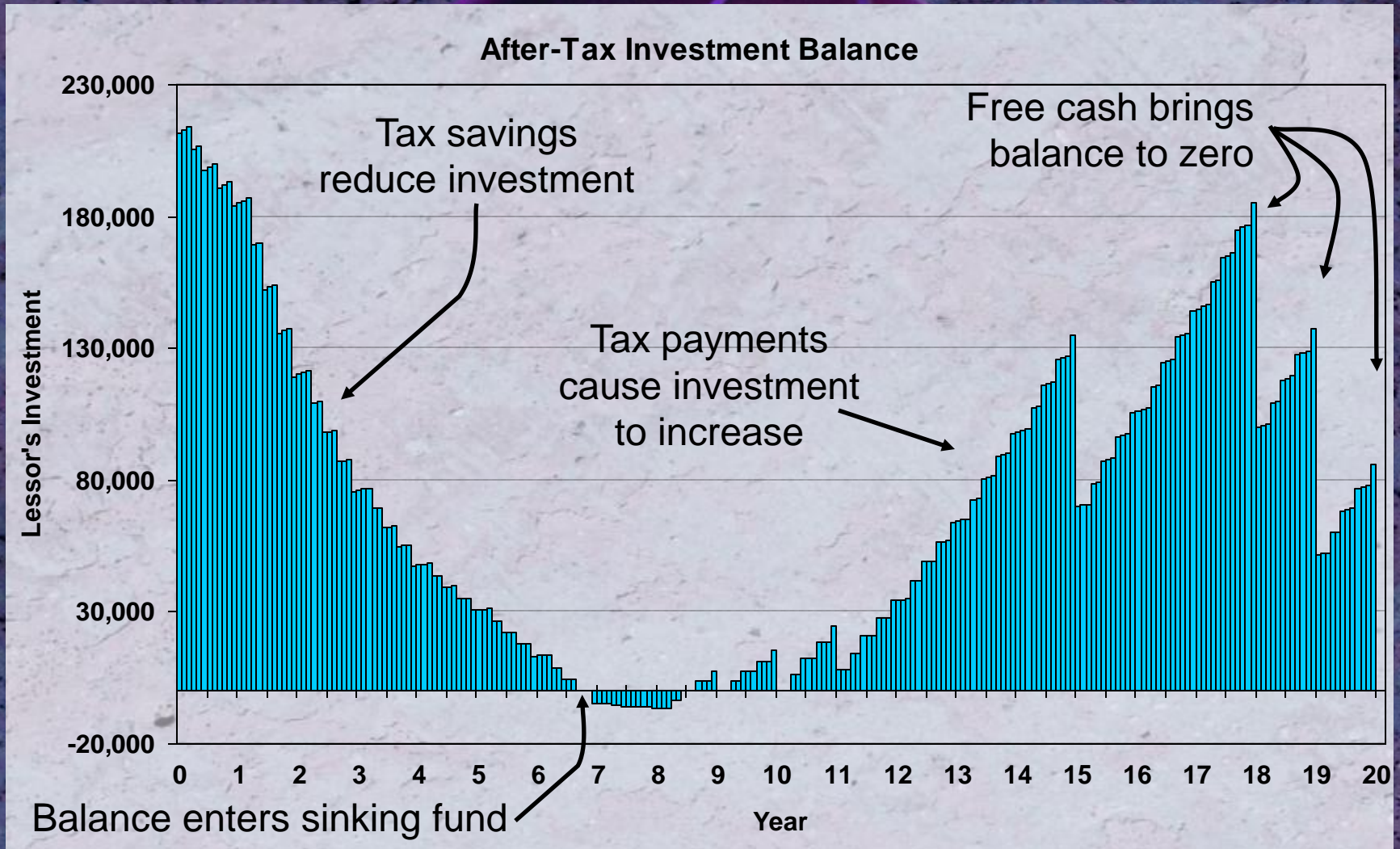


# US Lease Pricing: Cash Flow (with Leveraging)



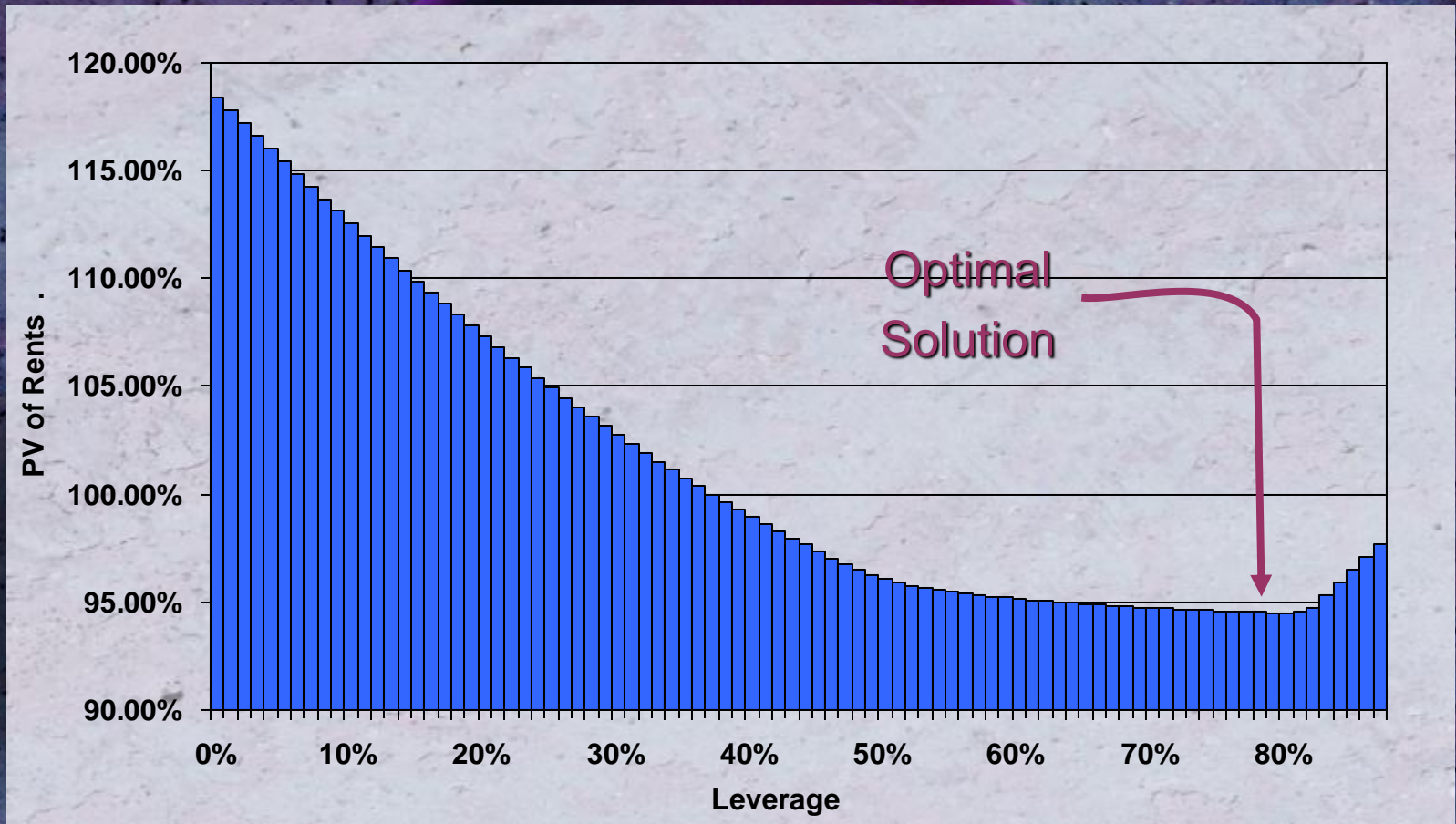


# US Lease Pricing: After-Tax Investment Balance





# US Lease Pricing: Sensitivity of PV to Leverage



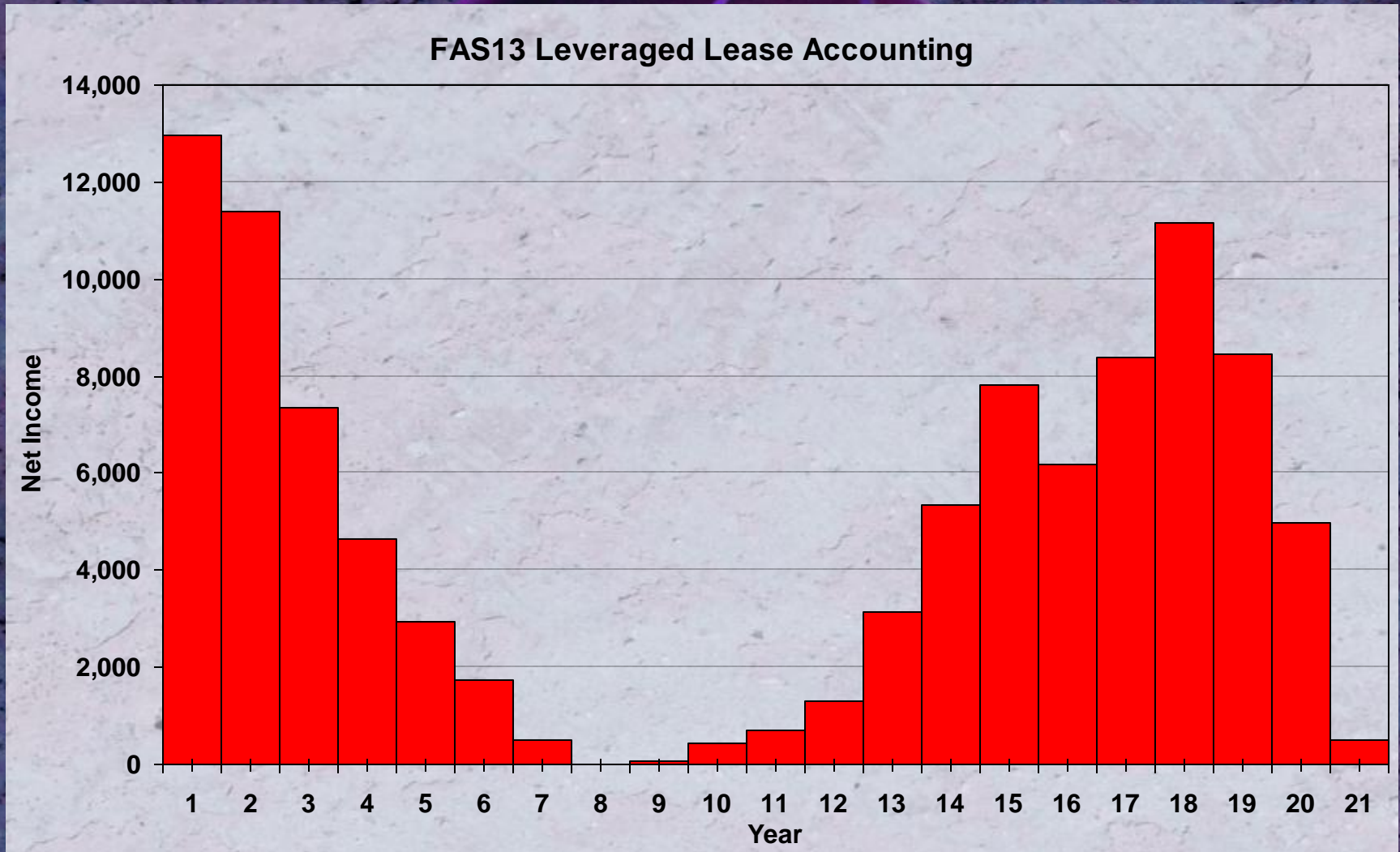


# US Lease Pricing: FAS Leveraged Lease Accounting

- FAS leveraged lease accounting calculates earnings in the same way as MISF yield method
- Profit spread according to after-tax investment balance
- Leads to large up-front profit



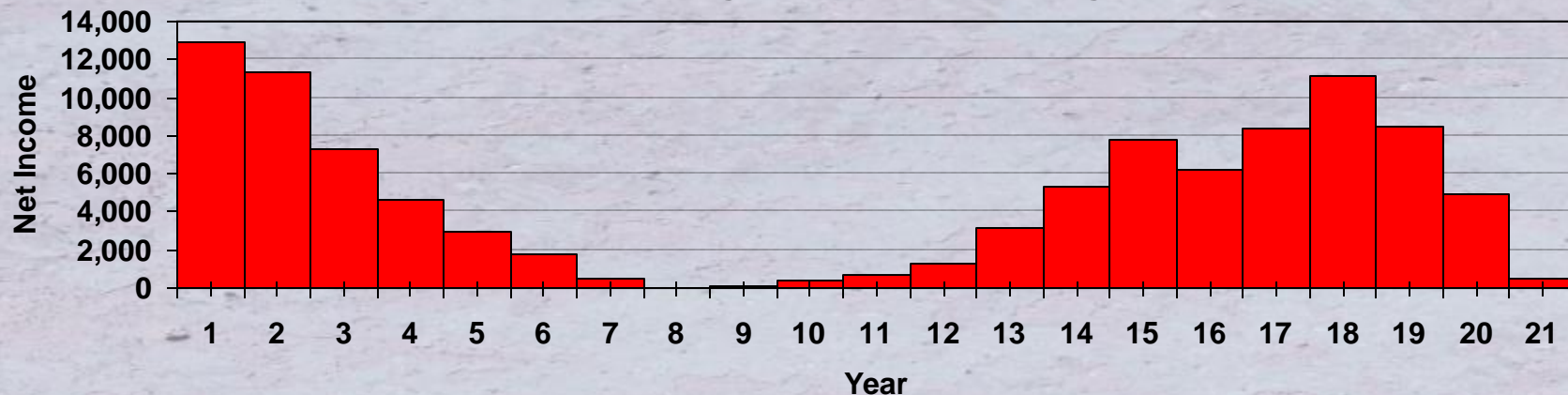
# US Lease Pricing: FAS13 LL Accounting Income



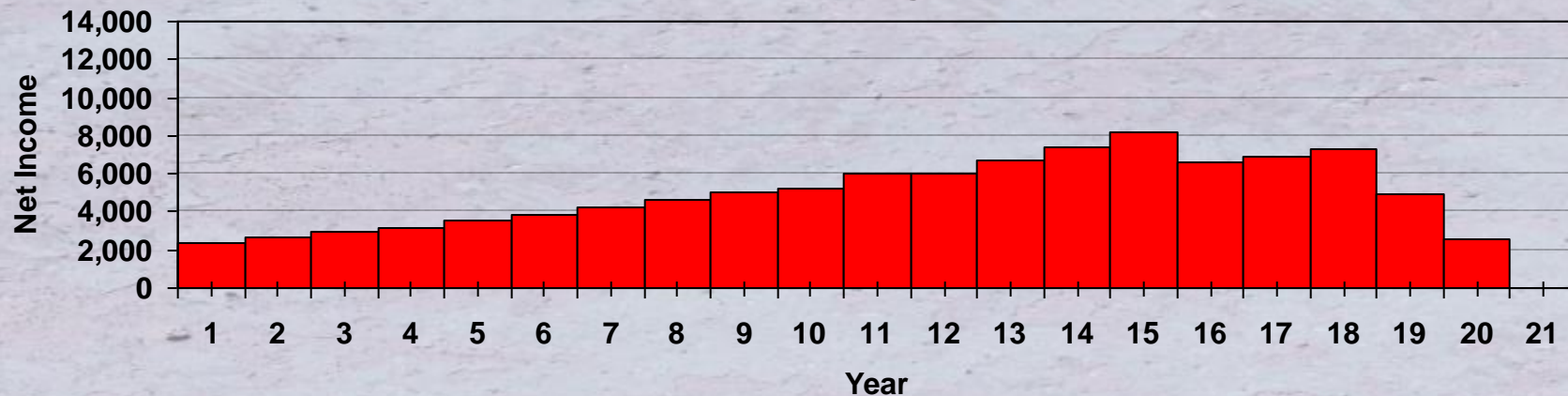


# US Lease Pricing: FAS vs. IAS

**FAS13 Leveraged Lease Accounting**



**IAS Accounting**





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■ Japanese Operating Lease Pricing

— Return Measures

— Recent Developments

■ Conclusions



# JOL Optimization: Lessor Return

- MISF yield not very important
- Investors look at:
  - Cash Return Ratio
  - Loss Ratio



# JOL Optimization: Lessor Return – Cash Return Ratio

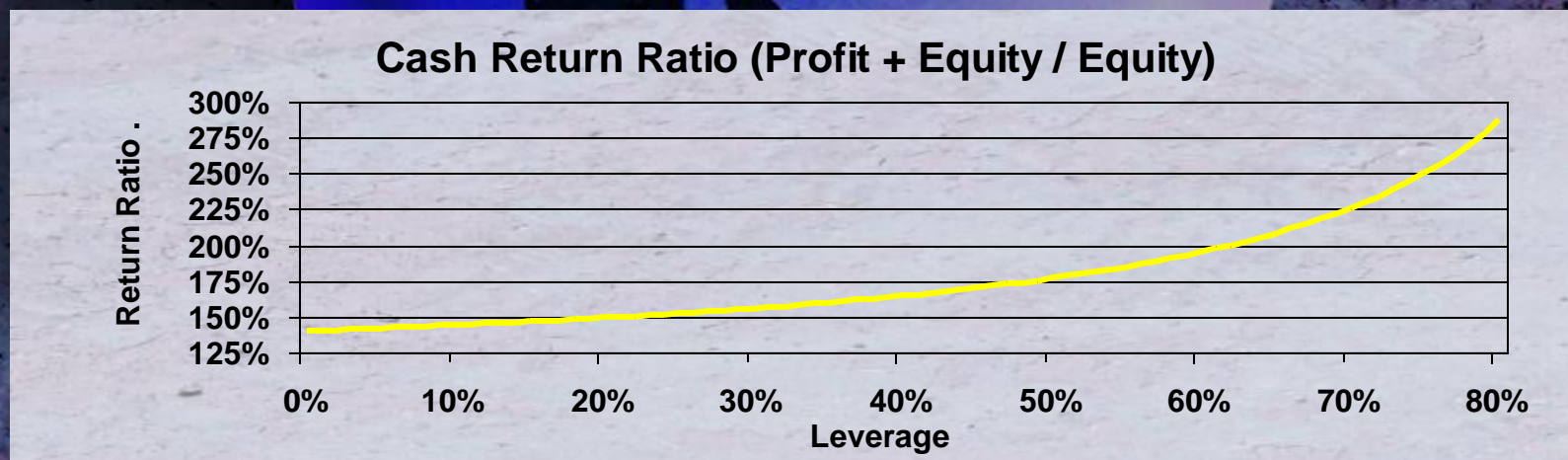
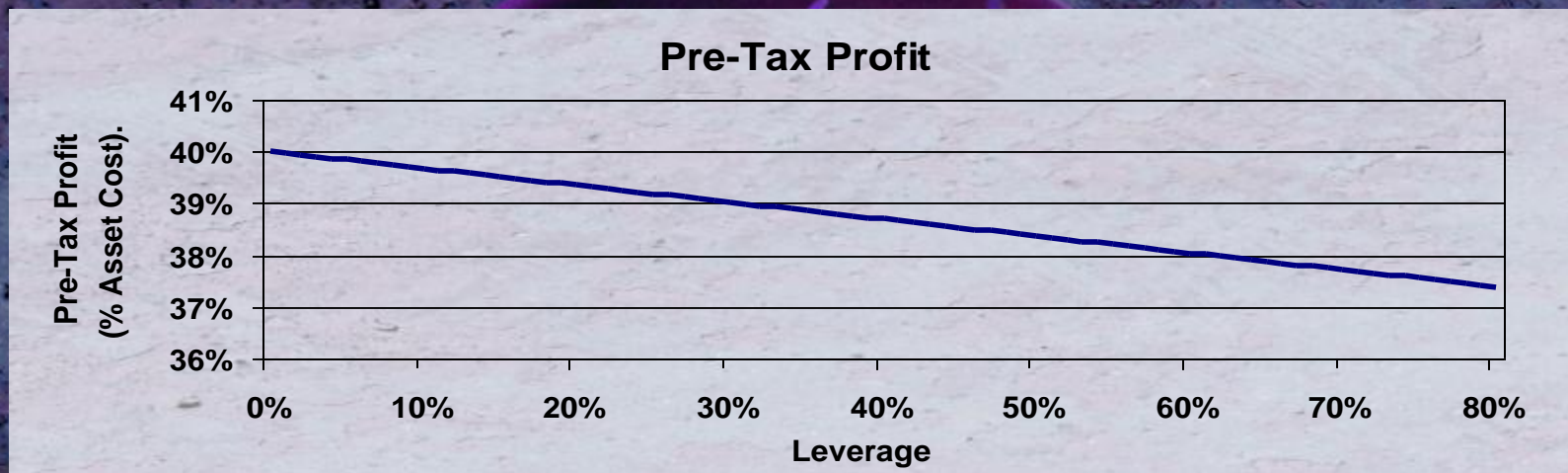
- Pre-Tax Cash Return Ratio defined as:

$$\frac{\text{Pre-Tax Profit} + \text{Invested Equity}}{\text{Invested Equity}}$$

- Thus a Cash Return Ratio of 150% means the pre-tax profit is 50% of invested equity



# JOL Optimization: Cash Ratio – Sensitivity to Leverage





# JOL Optimization: Lessor Return – Loss Ratio

- Loss Ratio defined as:

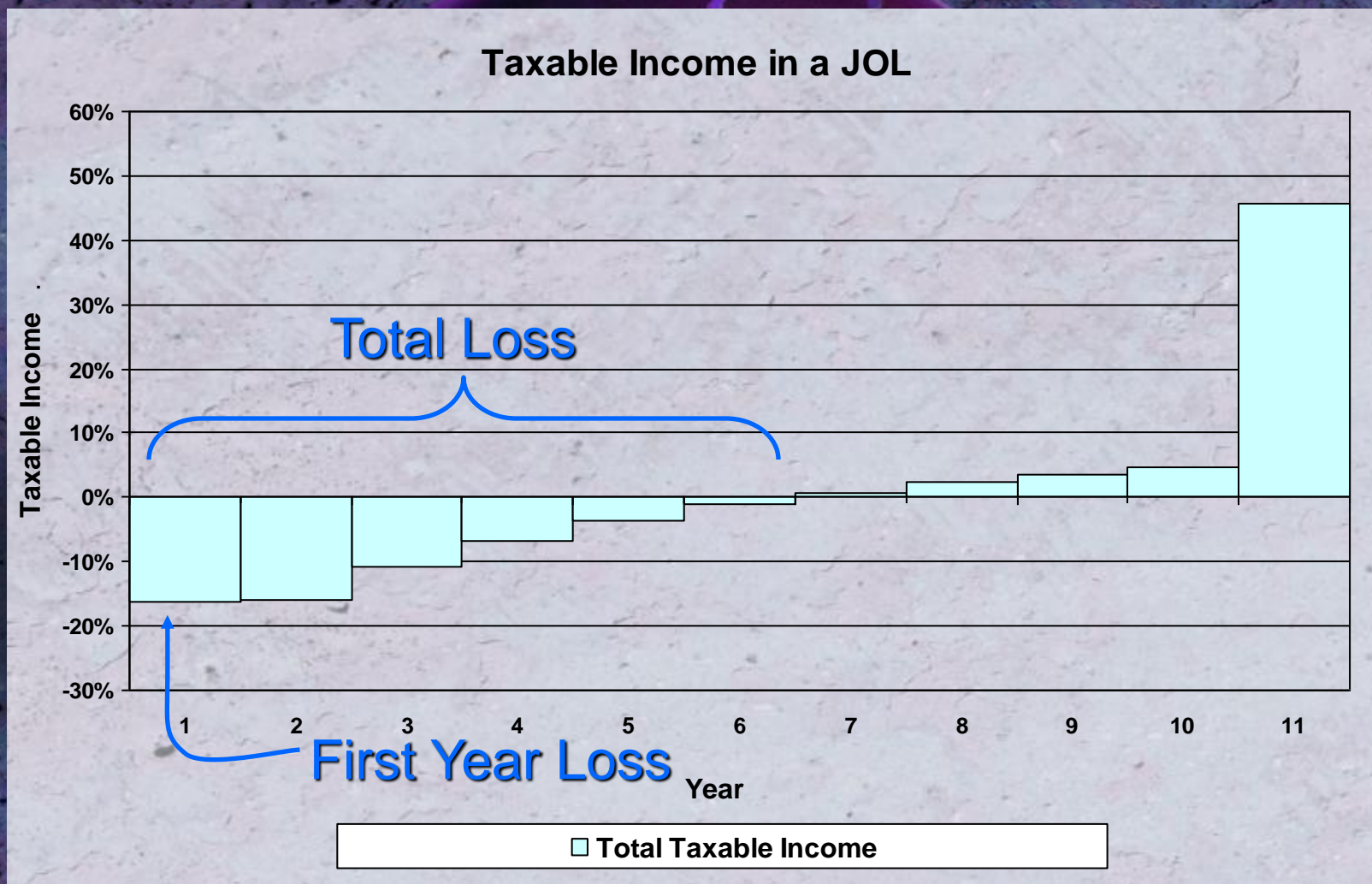
Taxable Loss

Invested Equity

- Investors look at loss ratios calculated using:
  - The total loss
  - Losses over initial periods (e.g. 1<sup>st</sup> year loss ratio)

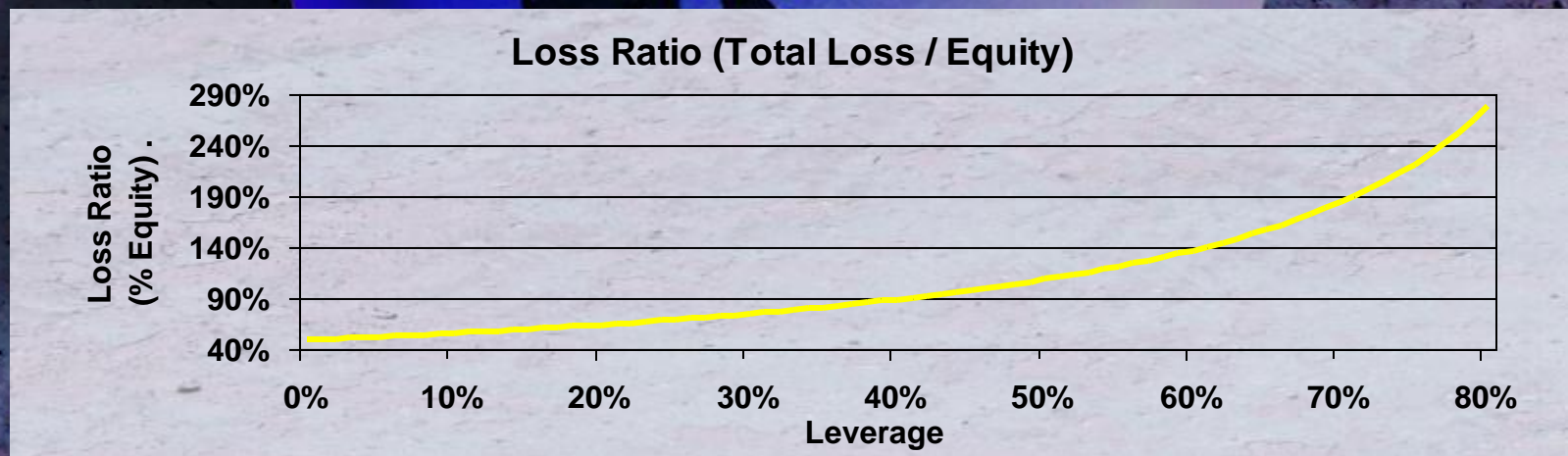


# JOL Optimization: Taxable Income





# JOL Optimization: Loss Ratio – Sensitivity to Leverage



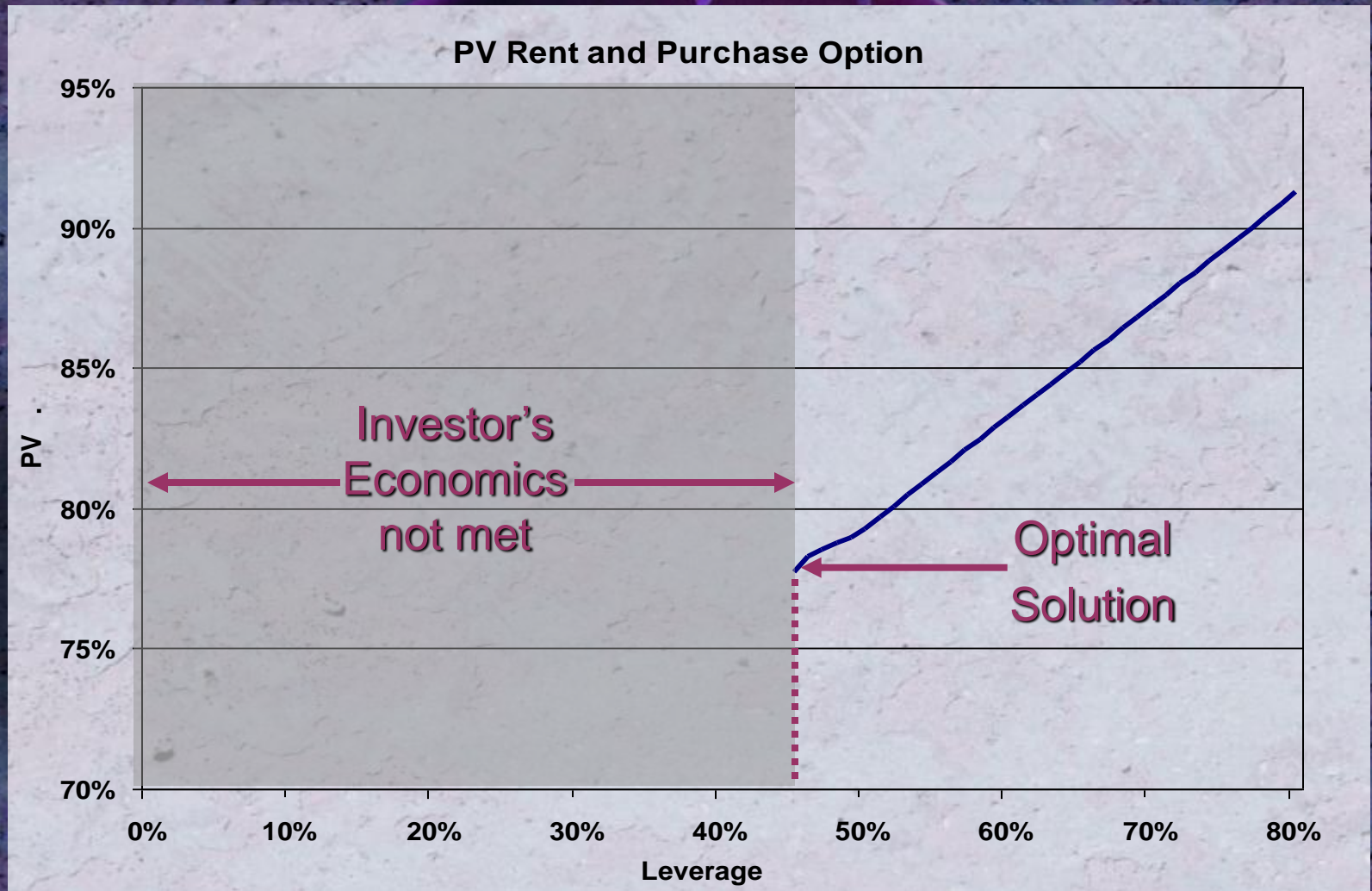


# JOL Optimization: Recent Developments

- New tax law limits loss ratios for passive investors to 100%
- Forces more tax advantages to be passed to lessee
- Gives rise to an optimum leverage amount



# JOL Optimization: Recent Developments





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# Conclusions

- Still great variation in lease pricing internationally:
  - UK actuarial margin
  - US MISF yield
  - JOL loss ratios and cash return ratio
- Leasing in all jurisdictions seems to be facing new challenges
- Computer optimization is essential