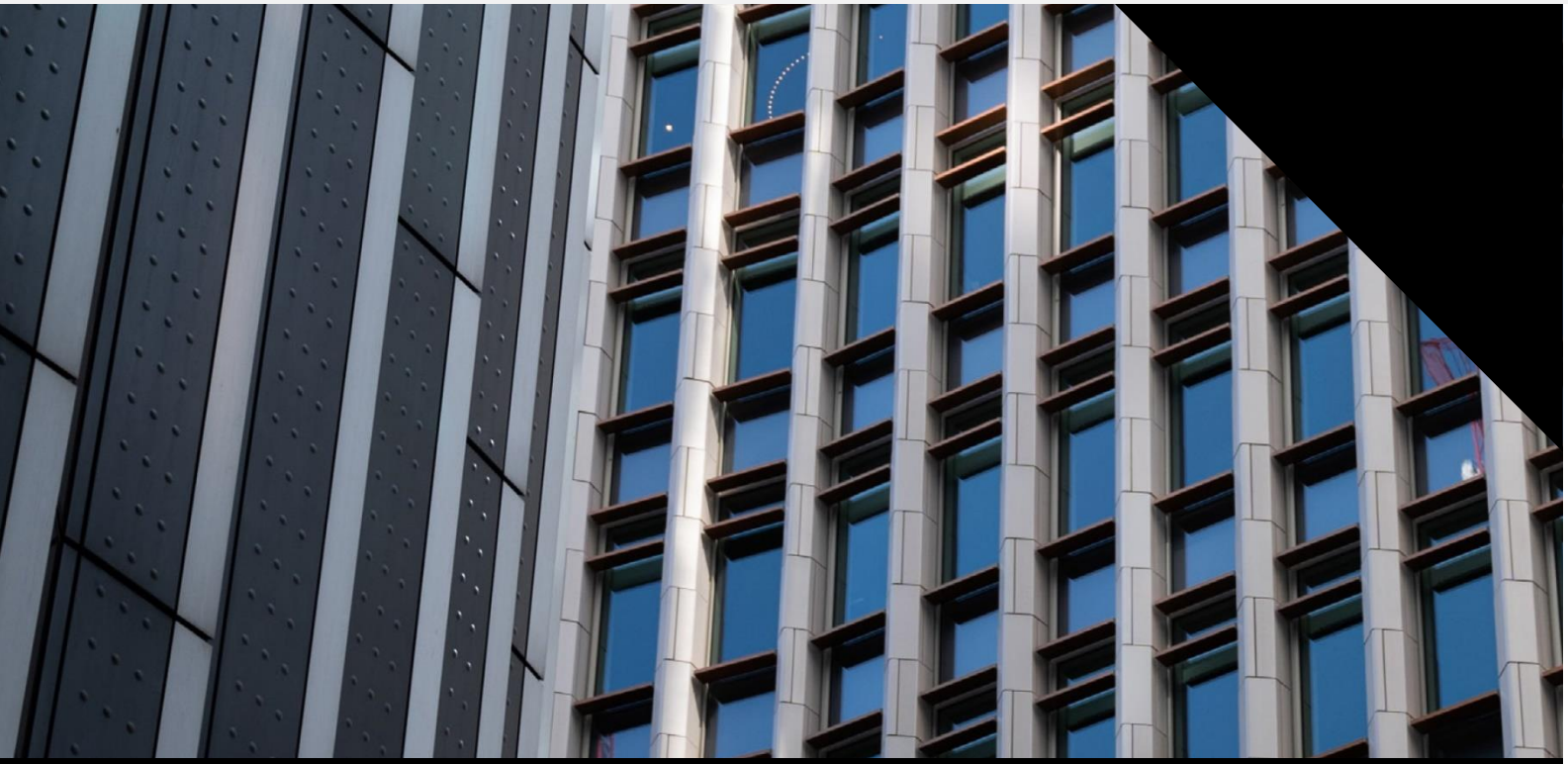
Income Analytics



SCSI Webinar – September 6th 2023

Income risk management solutions for real estate professionals, investors and lenders

Pricing Tenant Income Quality

What we will cover in this session

- Introduction to Income Analytics
- Importance of rental income in CRE investment markets
- Independent Review of Real Estate Valuations (RICS December 2021) - recommendations
- Using INCANS® Tenant Reports – an introduction to tenant PD Rates
- Case Study – pricing tenant default in real estate cashflows & applications in valuation

Demo of the ELAM Model

- Q&A

About Income Analytics

Set up in 2020 by a team of experienced property investment and debt professionals

Sophisticated quantitative risk models (INCANS® Scores) to **forecast the probability of tenant default on real estate cashflows**

Replace traditional company credit reports with advanced an advanced platform combing analytical tools, predictive quants and reporting

Measure & monitor rental income quality at **lease, building and portfolio level**

A “FICO Score” for real estate tenants

Global standardised quantitative measures of income default/failure risk

SINGLE SOURCE OF TENANT INFORMATION LINKING TOGETHER MULTIPLE BUSINESS PROCESSES

Core Business Functions

Research

Investment strategy

Distributions

Weightings

Valuation

Quantitative measures of default risk for yield calculations

Price tenant quality

Letting, Lending & Investment

Tenant assessment

Underwriting transactions

Risk management

Property Management

Assess, forecast and monitor income risk at asset and portfolio level

Client reporting

Operations

Single source

Central data accessible to all stakeholders (Clients, Operations, Management)

Compliance

Accurate measure of counterparty risk

Tenant KYC

Suppliers

IT

Data integrity

Keep your tenant records up to date

Track mergers acquisitions and changes of name 24/7

Importance of income

Real estate investment is fundamentally about current or future cashflow

In the absence of capital growth, commercial real estate becomes a fixed income style investment

70%+ of the long-term total return from commercial property comes the income component (source: MSCI Jan 2022)

Rental income from property pays the equity dividends, fund distributions and debt cover

Tenant quality and lease structure are a major source of volatility in asset valuation and appraisal

The value of your real estate investment is ultimately determined by the level, duration and quality of the rental income paid by your tenants."

Andrew Baum.

Professor of Practice, SAID Business School, University of Oxford

What is a lease?

Real estate investment is fundamentally about current or future cashflow

Pricing of debt instruments focuses on counterparty risk x duration risk

Or

Tenant quality x lease length

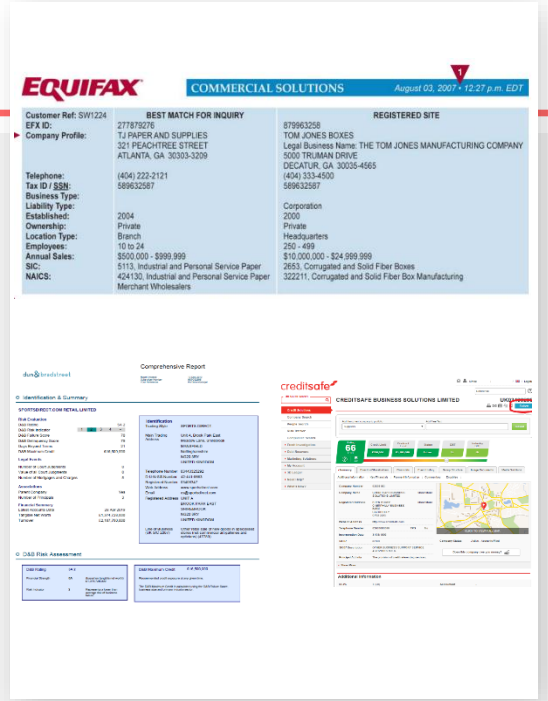
But how to measure income security?

LEASE - "a type of loan instrument because it secures a regular rent payment from the tenant to the owner, thereby creating a secured long-term debt."

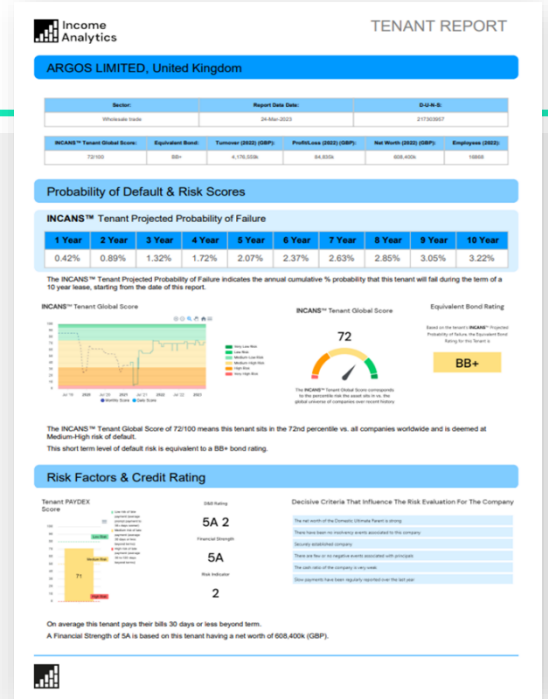
Introducing INCANS® Predictive Scores

Replacing traditional company credit ratings

- Subjective measurements of risk
- Backward looking
- Point in time analysis
- Not designed for use in real estate



- Quantitative measures of risk
- PD rates for 1-10 years into the future
- Equivalent bond rating
- Standardised global scores
- Map tenant risk to lease length
- Designed for use in real estate



Our solutions for income risk management

Due diligence & research

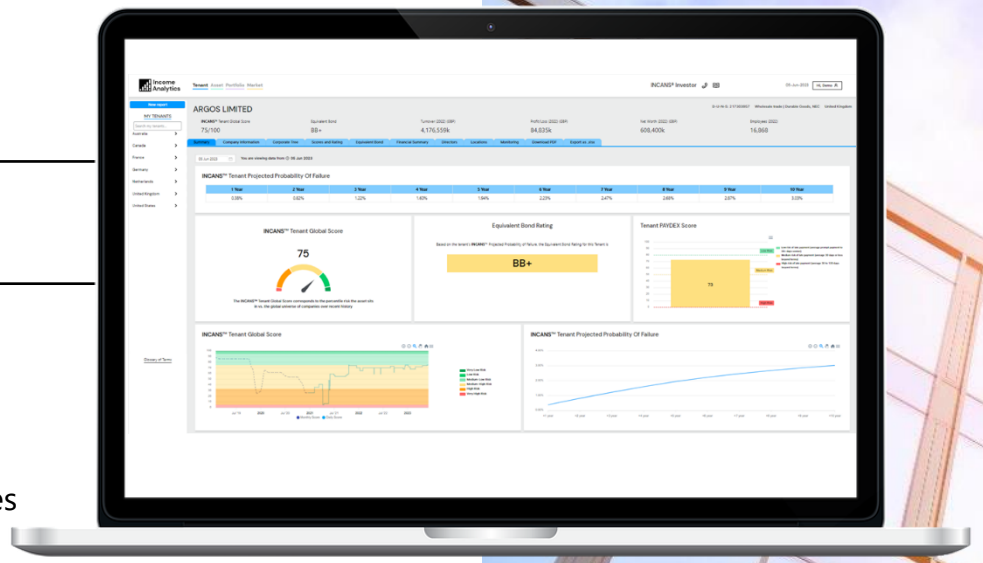
Risk rate & score the cashflows from

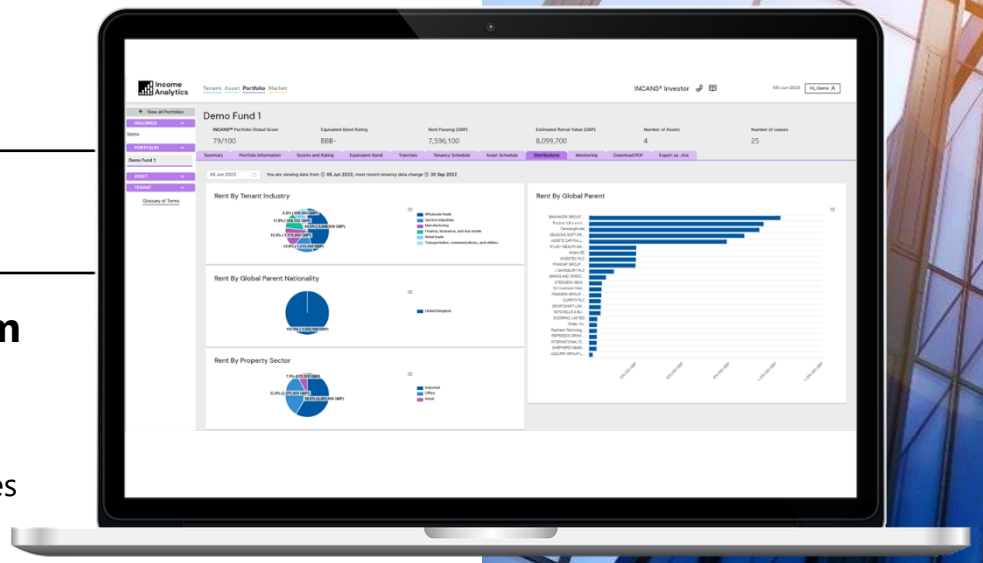
- Tenants
- Buildings
- Investment portfolios loan books & asset backed securities

Portfolio risk management

Monitor & manage cashflow risk 24/7 from

- Tenants
- Buildings
- Investment portfolios loan books & asset backed securities





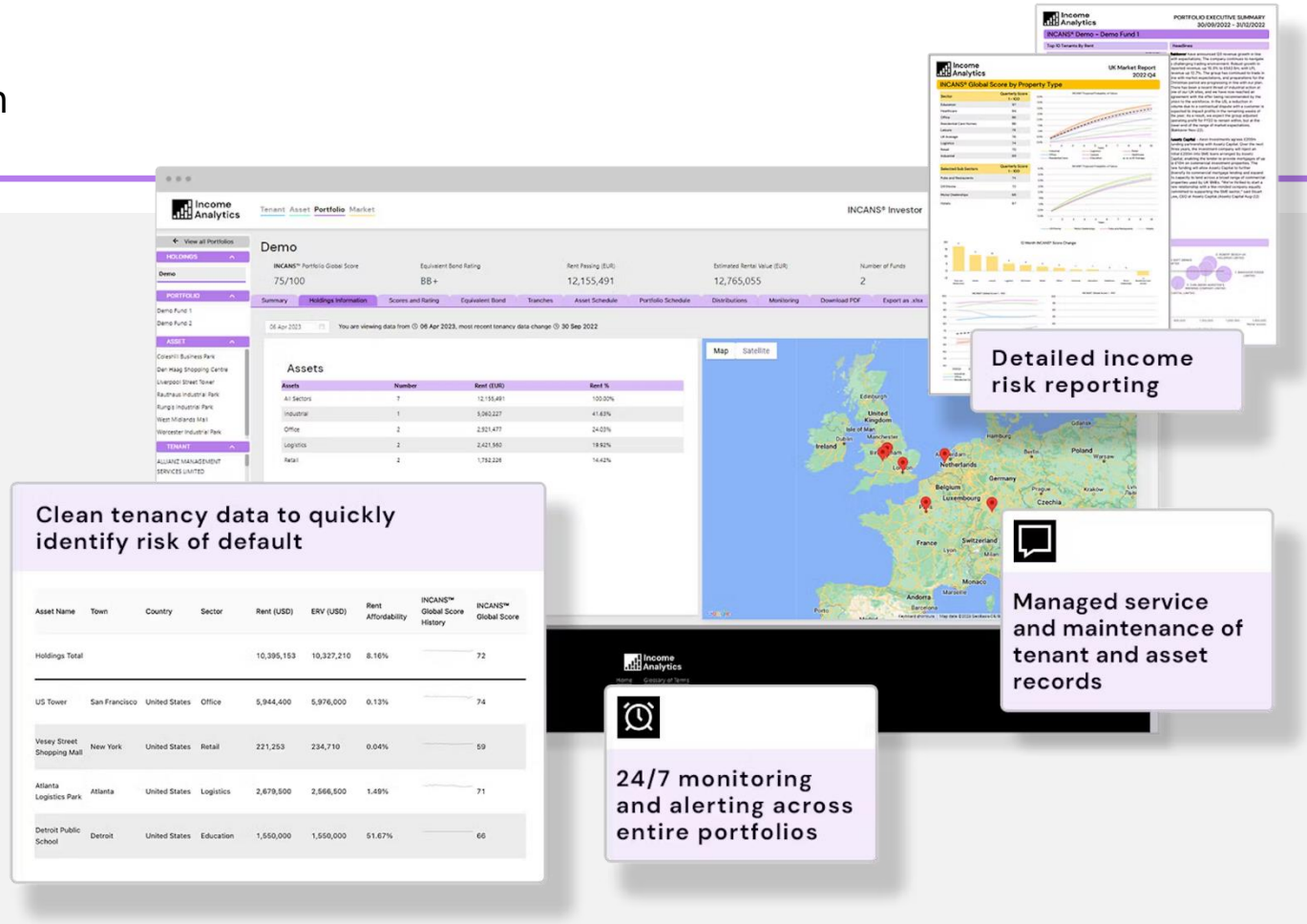
INCANS® Investor - dashboards

Score, monitor and manage your tenants AND assets

Got a question?

Talk to our dedicated Research Team

- Coverage of 500m tenants across 200+ countries & territories worldwide
- Listed businesses, private companies, governments and sole traders
- Score and monitor income quality across tenants, assets and portfolio
- Track changes in tenant, asset and portfolio risk using our email alert service
- Export data into PDF & Excel



INCANS® Investor – analytics

ELAM - applying PD rates in your valuation

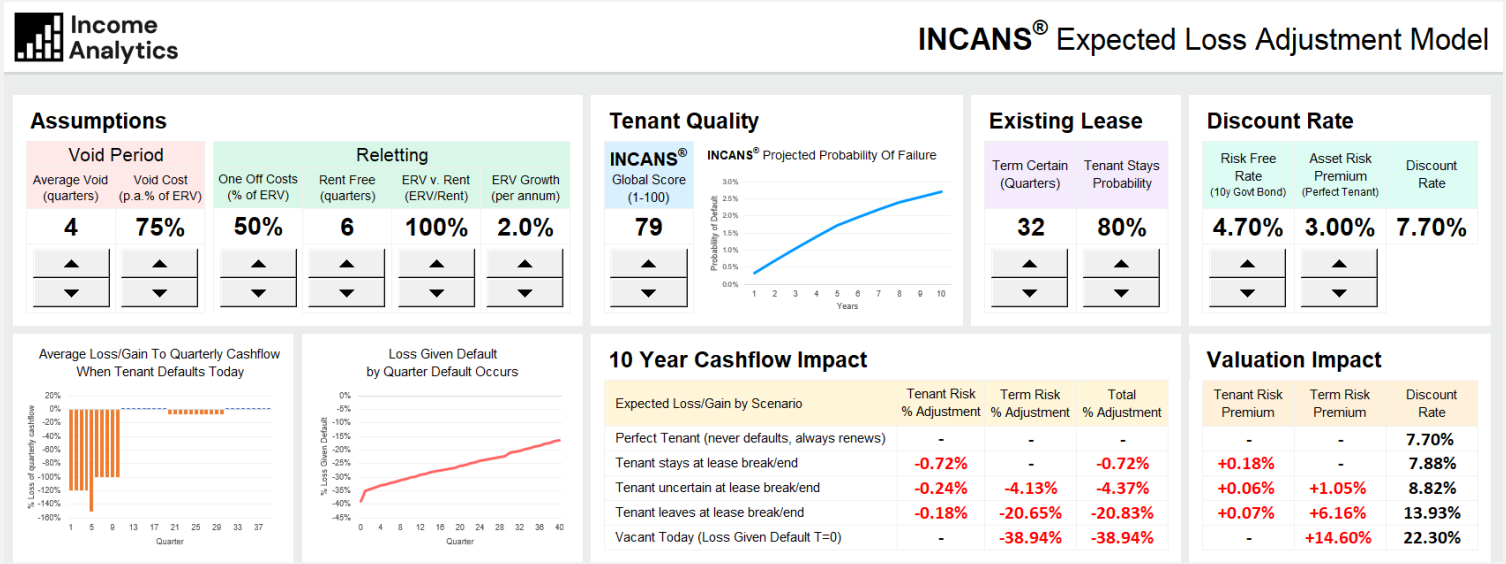
Got a question?

Talk to our dedicated Research Team

Loss Given Default (LGD)
- what do I lose in the event of a default?

Probability of Default (PD)
- how likely is default to happen?

Expected Loss (EL)
- implied adjustment to valuation

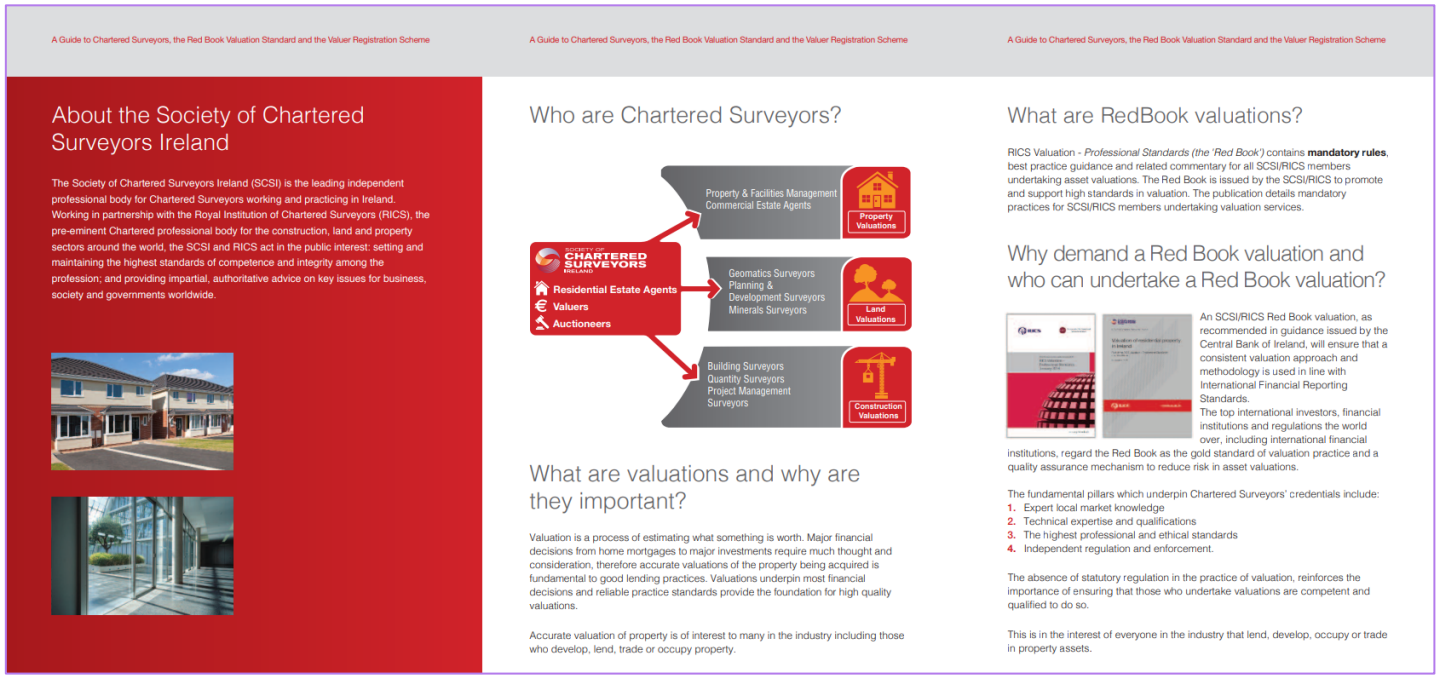


Applied Analytics

Incorporating **INCANS®** PD rates into real estate valuations

SCSI & RICS

Red Book valuations



A Guide to Chartered Surveyors, the Red Book Valuation Standard and the Valuer Registration Scheme

About the Society of Chartered Surveyors Ireland

The Society of Chartered Surveyors Ireland (SCSI) is the leading independent professional body for Chartered Surveyors working and practicing in Ireland. Working in partnership with the Royal Institution of Chartered Surveyors (RICS), the pre-eminent Chartered professional body for the construction, land and property sectors around the world, the SCSI and RICS act in the public interest: setting and maintaining the highest standards of competence and integrity among the profession; and providing impartial, authoritative advice on key issues for business, society and governments worldwide.

A Guide to Chartered Surveyors, the Red Book Valuation Standard and the Valuer Registration Scheme

Who are Chartered Surveyors?

What are valuations and why are they important?

Valuation is a process of estimating what something is worth. Major financial decisions from home mortgages to major investments require much thought and consideration, therefore accurate valuations of the property being acquired is fundamental to good lending practices. Valuations underpin most financial decisions and reliable practice standards provide the foundation for high quality valuations.

Accurate valuation of property is of interest to many in the industry including those who develop, lend, trade or occupy property.

A Guide to Chartered Surveyors, the Red Book Valuation Standard and the Valuer Registration Scheme

What are RedBook valuations?

RICS Valuation - *Professional Standards (the 'Red Book')* contains **mandatory rules**, best practice guidance and related commentary for all SCSI/RICS members undertaking asset valuations. The Red Book is issued by the SCSI/RICS to promote and support high standards in valuation. The publication details mandatory practices for SCSI/RICS members undertaking valuation services.

Why demand a Red Book valuation and who can undertake a Red Book valuation?

An SCSI/RICS Red Book valuation, as recommended in guidance issued by the Central Bank of Ireland, will ensure that a consistent valuation approach and methodology is used in line with International Financial Reporting Standards.
The top international investors, financial institutions and regulations the world over, including international financial institutions, regard the Red Book as the gold standard of valuation practice and a quality assurance mechanism to reduce risk in asset valuations.

The fundamental pillars which underpin Chartered Surveyors' credentials include:

1. Expert local market knowledge
2. Technical expertise and qualifications
3. The highest professional and ethical standards
4. Independent regulation and enforcement.

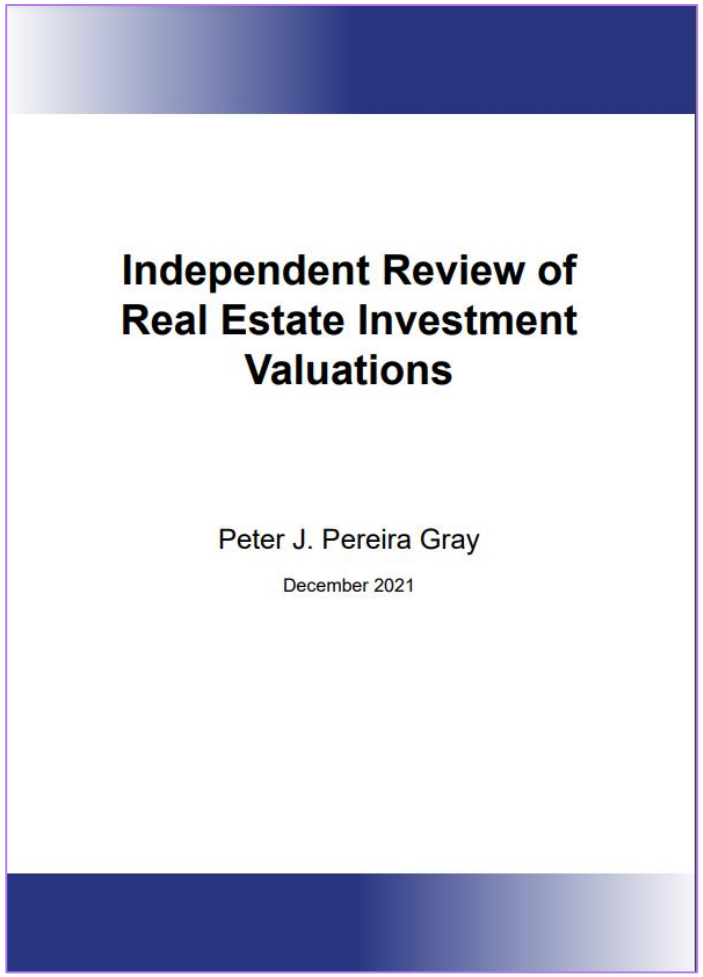
The absence of statutory regulation in the practice of valuation, reinforces the importance of ensuring that those who undertake valuations are competent and qualified to do so.

This is in the interest of everyone in the industry that lend, develop, occupy or trade in property assets.

An SCSI/RICS Red Book valuation, as recommended in guidance issued by the Central Bank of Ireland, will ensure that a consistent valuation approach and methodology is used in line with International Financial Reporting Standards

RICS Paper recognised need to change approach

The report made 13 recommendations regarding the valuation process



In this session we will address 3 of them:

- **Recommendation 8** – Analytical Approaches (i) ***Discounted Cash Flow.*** The valuation profession should incorporate the ***use of discounted cash flow as the principal model*** applied in preparing property investment valuations.
- **Recommendation 8** – Analytical Approaches (ii) ***Advanced Analytics*** RICS should improve the knowledge and application of valuers in respect of ***advanced analytical techniques***.
- **Recommendation 10** – ***Standardised Property Risk Advice*** RICS should develop a framework to standardise property risk advice.

INCANS® Tenant Reports

Looking beyond company credit ratings

- **Focus on the Probability of Default (PD rate)** – a predictive indicator based on ACTUAL company failure data
  - Forward looking
  - Quantitative measure of risk

✓

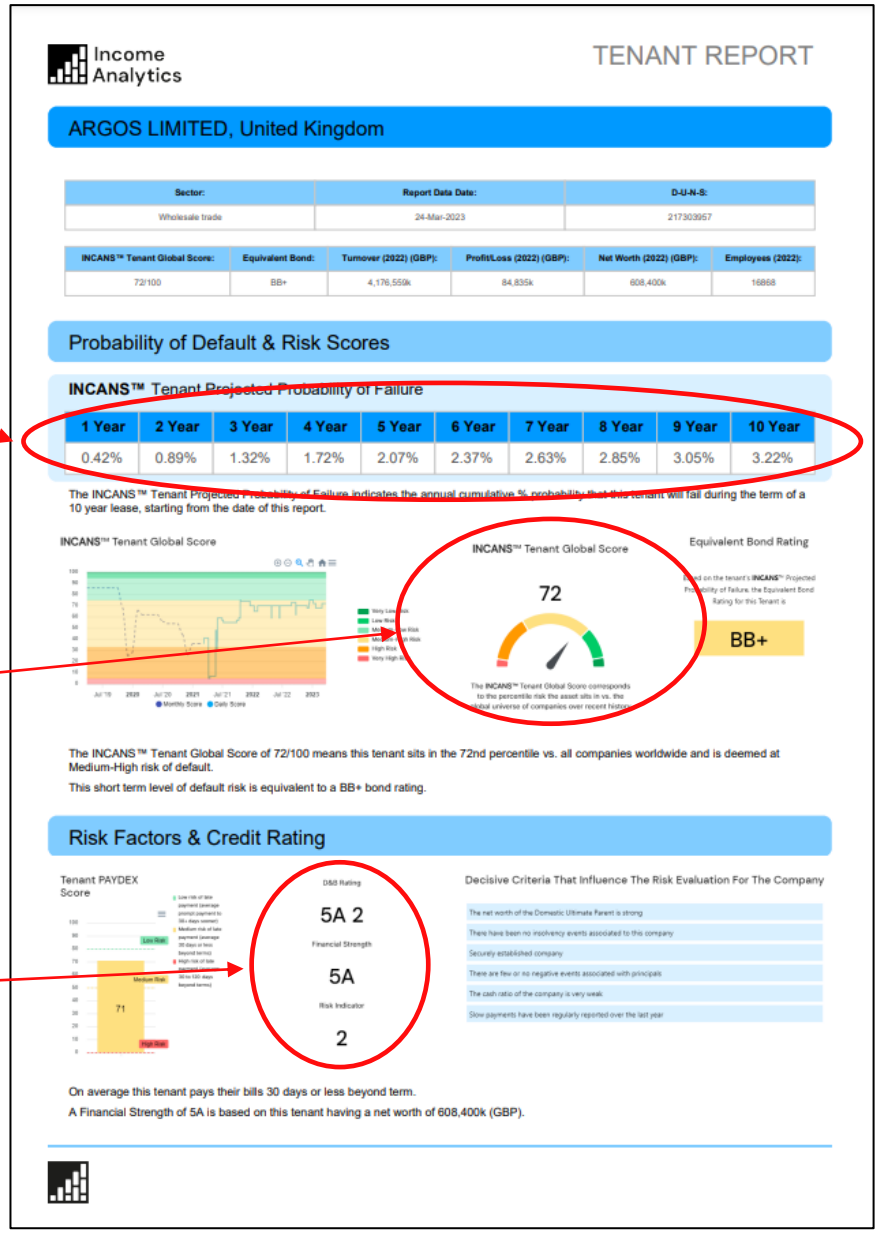
- **INCANS® Tenant Global Score –** standardised measure of tenant risk across borders and over time

✓

- **Credit Score –** subjective measure of risk that cannot be applied in a DCF model

✗

Meeting Recommendations 8 & 10



Income Analytics

TENANT REPORT

ARGOS LIMITED, United Kingdom

Sector:	Report Data Date:	D-U-N-S:
Wholesale trade	24-Mar-2023	217303957

INCANS™ Tenant Global Score:	Equivalent Bond:	Turnover (2022) (GBP):	Profit/Loss (2022) (GBP):	Net Worth (2022) (GBP):	Employees (2022):
72/100	BB+	4,176,559k	84,835k	608,400k	16868

Probability of Default & Risk Scores

INCANS™ Tenant Projected Probability of Failure

1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
0.42%	0.89%	1.32%	1.72%	2.07%	2.37%	2.63%	2.85%	3.05%	3.22%

The INCANS™ Tenant Projected Probability of Failure indicates the annual cumulative % probability that this tenant will fail during the term of a 10 year lease, starting from the date of this report.

INCANS™ Tenant Global Score

INCANS™ Tenant Global Score

72

Equivalent Bond Rating

BB+

The INCANS™ Tenant Global Score of 72/100 means this tenant sits in the 72nd percentile vs. all companies worldwide and is deemed at Medium-High risk of default.

This short term level of default risk is equivalent to a BB+ bond rating.

Risk Factors & Credit Rating

Tenant PAYDEX Score

71

D&B Rating

5A 2

Financial Strength

5A

Risk Indicator

2

Decisive Criteria That Influence The Risk Evaluation For The Company

- The net worth of the Domestic Ultimate Parent is strong
- There have been no insolvency events associated to this company
- Securely established company
- There are few or no negative events associated with principals
- The cash ratio of the company is very weak
- Slow payments have been regularly reported over the last year

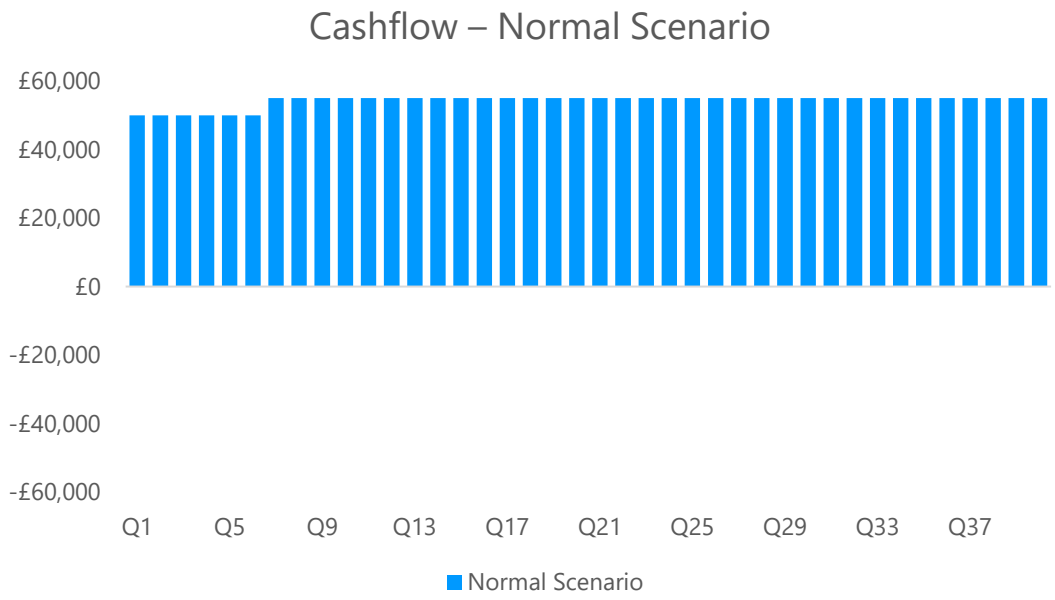
On average this tenant pays their bills 30 days or less beyond term.

A Financial Strength of 5A is based on this tenant having a net worth of 608,400k (GBP).

Case Study

Creating my cashflow

Cashflow for valuation – simple example

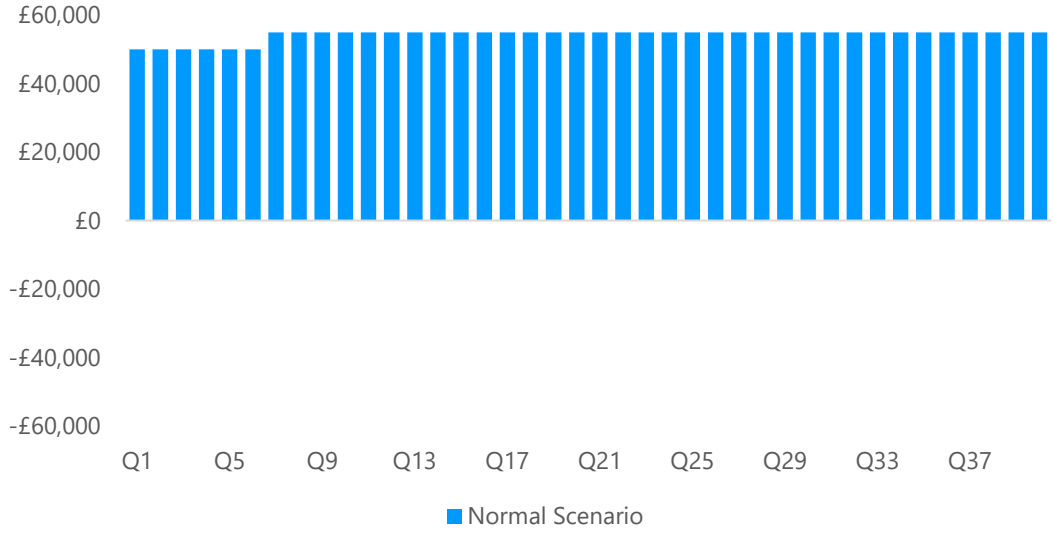


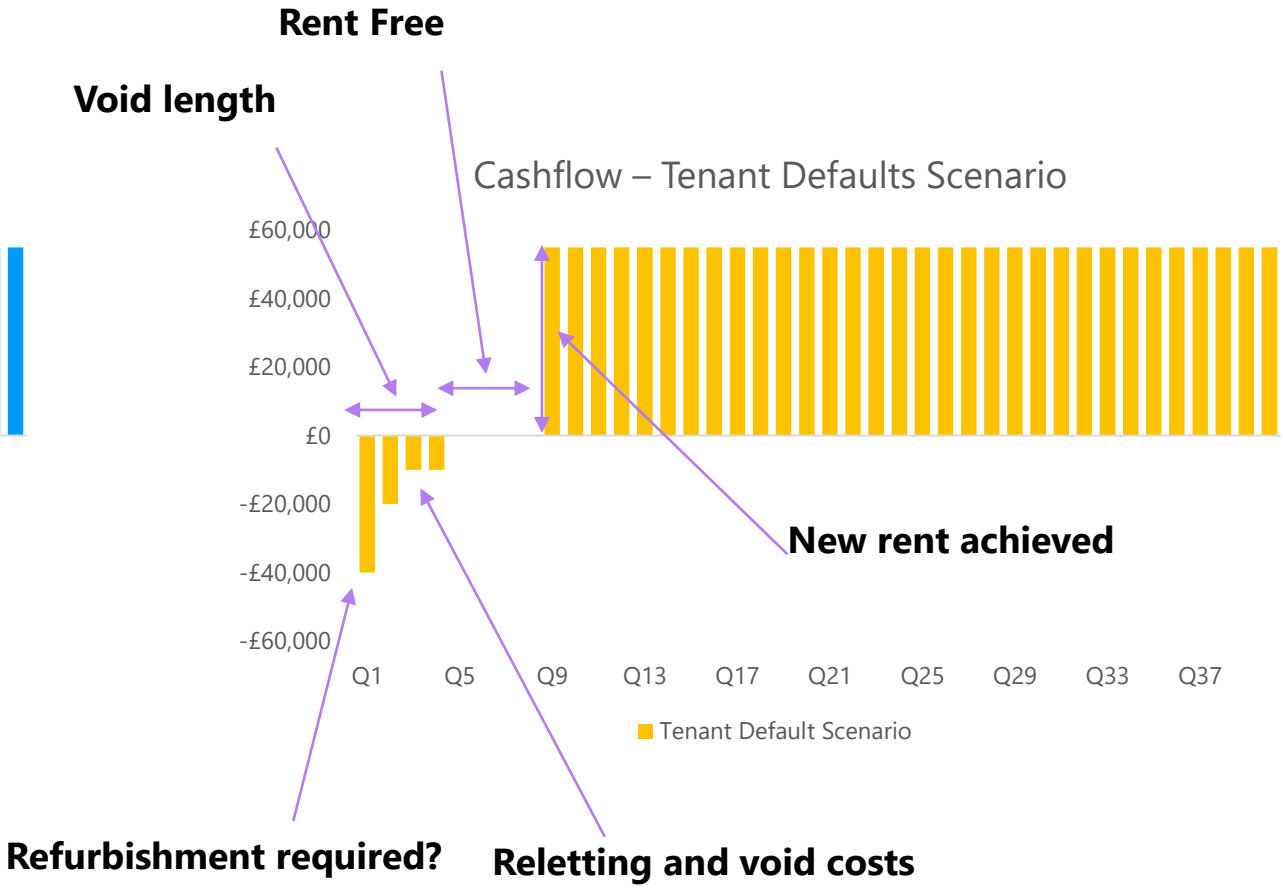
- 10 year lease
- Single tenant building
- Current Quarterly Rent = £50,000
- ERV = £55,000
- No breaks
- Upwards only Rent review to ERV in 18 months time
- Tenant certain to renew lease at lease end

So what happens if the tenant goes bust?

Cashflow Scenarios and Reletting Assumptions

What happens IF the tenant defaults?

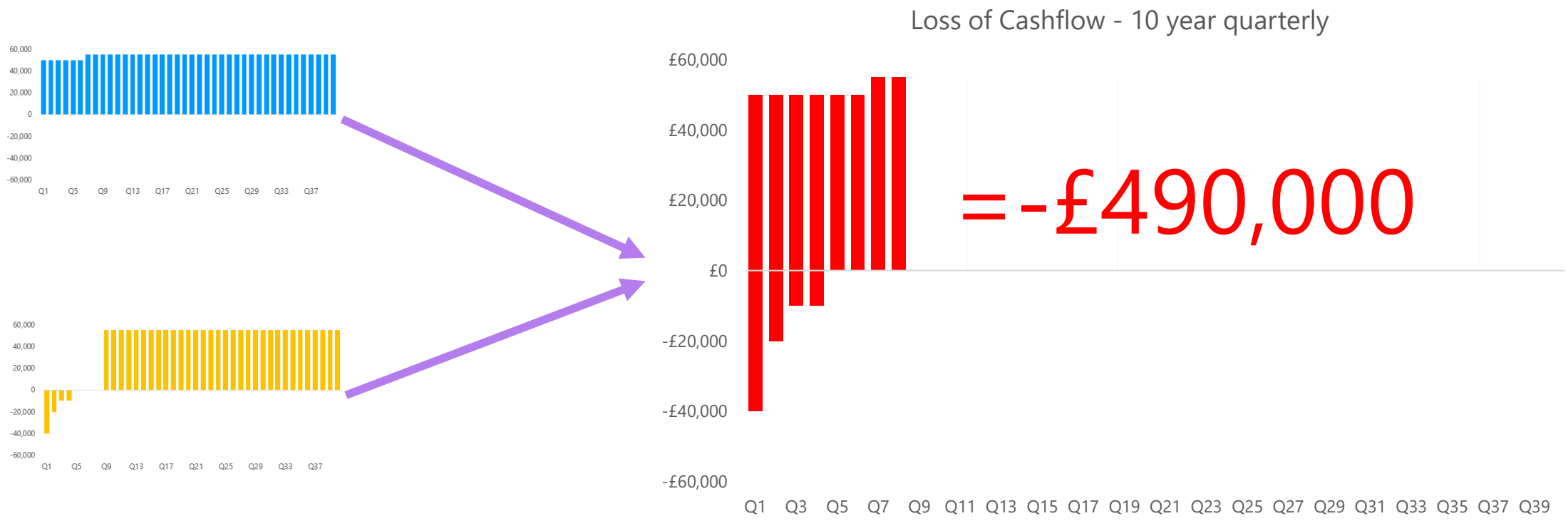




So how much would I 'lose'…

Loss Given Default

How much income do I lose IF the tenant defaults?



But how likely is it to happen…

Expected Loss

Loss Given Default (LGD) x Probability of Default (PD) = Expected Loss of income

We've seen for this example that I would lose a total of **-£490,000** from my income **IF** my tenant defaults.

Using the probability of default supplied by **INCANS®**, my Expected Loss of income for some example types of tenants is:

Tenant example	**INCANS® Global Score**	**Projected Probability of Default (PD)**	**Expected Loss of income (PD x -£490,000)**
Government	100/100	0.005%	**-£25**
Very Good	75/100	0.38%	**-£1,862**
Average	50/100	0.9%	**-£4,410**
Not so good	25/100	2%	**-£9,800**
Bad	5/100	15%	**-£73,500**
Near collapse	1/100	50%	**-£245,000**
Collapsed	-	100%	**-£490,000**

But how do I use this in my valuation…

How do I use this in practice?

The **INCANS®** Expected Loss Adjustment Model (ELAM)

In reality, the modelling is much more complex than our simple example: the tenant can default at any point in time not just the start, there are all sorts of different lease structures, multiple tenants can be in a building, short or full lease length remaining, etc

Income Analytics

INCANS® Expected Loss Adjustment Model

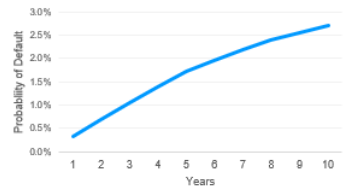
Assumptions

Void Period		Reletting			
Average Void (quarters)	Void Cost (p.a.% of ERV)	One Off Costs (% of ERV)	Rent Free (quarters)	ERV v. Rent (ERV/Rent)	ERV Growth (per annum)
4	75%	50%	6	100%	2.0%

Tenant Quality

INCANS® Global Score (1-100)
79

INCANS® Projected Probability Of Failure



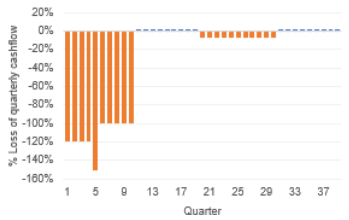
Existing Lease

Term Certain (Quarters)	Tenant Stays Probability
32	80%

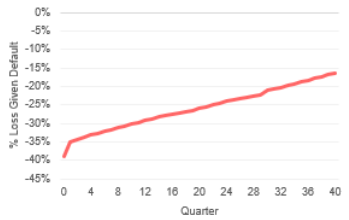
Discount Rate

Risk Free Rate (10y Govt Bond)	Asset Risk Premium (Perfect Tenant)	Discount Rate
4.70%	3.00%	7.70%

Average Loss/Gain To Quarterly Cashflow When Tenant Defaults Today



Loss Given Default by Quarter Default Occurs



10 Year Cashflow Impact

Expected Loss/Gain by Scenario	Tenant Risk % Adjustment	Term Risk % Adjustment	Total % Adjustment
Perfect Tenant (never defaults, always renews)	-	-	-
Tenant stays at lease break/end	-0.72%	-	-0.72%
Tenant uncertain at lease break/end	-0.24%	-4.13%	-4.37%
Tenant leaves at lease break/end	-0.18%	-20.65%	-20.83%
Vacant Today (Loss Given Default T=0)	-	-38.94%	-38.94%

Valuation Impact

Tenant Risk Premium	Term Risk Premium	Discount Rate
-	-	7.70%
+0.18%	-	7.88%
+0.06%	+1.05%	8.82%
+0.07%	+6.16%	13.93%
-	+14.60%	22.30%

Summary

- Most CRE investment markets have gone “income only”
  - Income return will provide majority of investment return
  - Focus on quantity & duration of cashflows

- **INCANS®** Tenant Reports are widely available
  - PD rates quantify the probability of tenant default
  - Apply PD rates in DCF modelling

- **INCANS®** ELAM will allow you to apply PD rates to valuations
  - Calculate expected loss in cash terms
  - Apply cash adjustment figure for your yield to reflect income security

Implementing RICS Recommendations

- **Recommendation 8** – Analytical Approaches (i) ***Discounted Cash Flow.*** The valuation profession should incorporate the use of discounted cash flow as the principal model applied in preparing property investment valuations. ✓

- **Recommendation 8** – Analytical Approaches (ii) ***Advanced Analytics*** RICS should improve the knowledge and application of valuers in respect of advanced analytical techniques. ✓

- **Recommendation 10** – ***Standardised Property Risk Advice*** RICS should develop a framework to standardise property risk advice ✓

Speakers

Matt Richardson

Chief Executive Officer

Matt has 32 years experience of working in real estate investment markets in the UK, Europe, US and China. Prior to co-founding Income Analytics, he was Director of Research, European Real Estate at Fidelity International in London.

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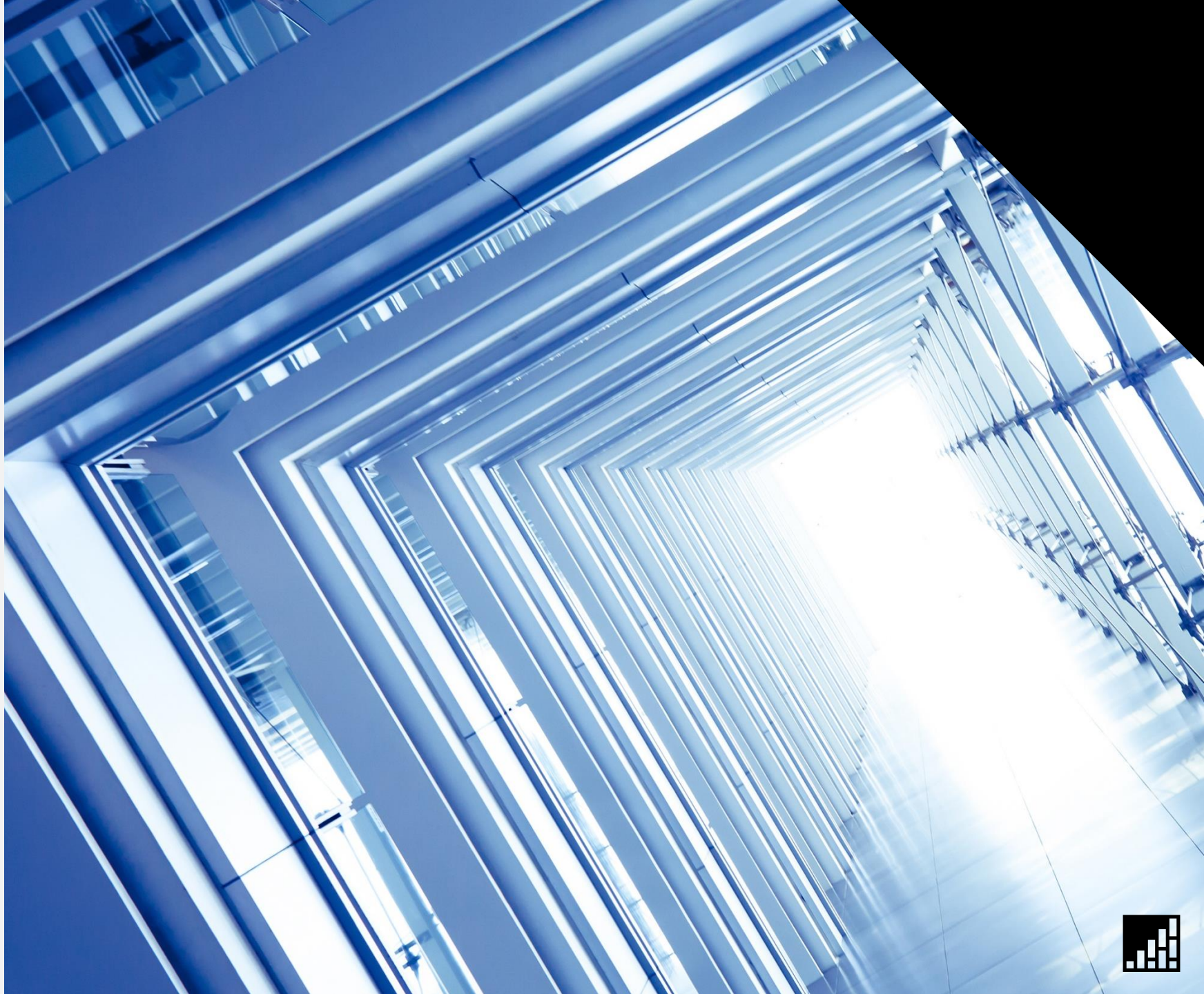
Appendix



Our innovative approach

Predictive indicators based on ACTUAL data AND detailed company information

Base Data

Dun & Bradstreet Database

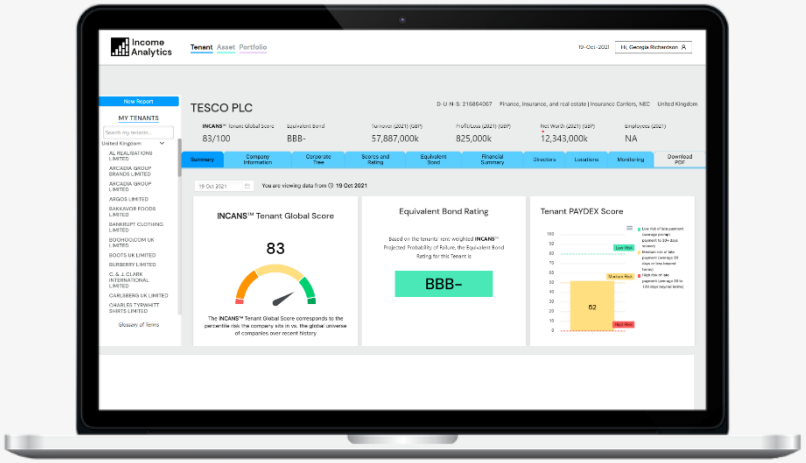
- 12 Month % Probability of Failure
- Tenant ID Check
- Global Corporate Family Tree
- 5 Year Financial History
- Directors
- Trading Locations
- PAYDEX Data

Income Analytics Calculation Layer

Income Analytics Database

- INCANS Global Score Calculations
- Long Term % Probability of Failure Calculations
- Equivalent Corporate Bond Rating Calculations

Access Via Our Application Front End or API



"Proprietary risk scores from Income Analytics alongside comprehensive global company data"

Calculating the probability of failure

Analyse multiple factors to understand how, why and when companies fail

Core Data Inputs

Business Demographics
- business age
- local or national trader
- industry type/sector

Corporate Linkage
- size of group
- strength
- structure

Principals
- experience
- performance
- other companies

Financials
- financial accounts
- ratios & trends
- liquidity, late filing, detrimental notes

Public Detrimental Info
- CCJ's
- mortgages & charges
- failure events*

Trade Experiences
- D&B Trade Programme ™
- payment trends
- payment vs benchmarks

Apply Expert Rules

Minimum Data
- identify trading activity
- populate the models
- generate scores

High Risk Parent
- cascade effects
- subsidiaries
- structure

Detrimental Legal Events
- failure events
- auditors note

Possible Fraudulent Activity
- Critical Intelligence ™
- data partners
- sanctions lists

Manual Overrides
- news reports
- registers
- D&B research

Apply Expert Rules

Inputs analysed using statistical modelling (incl. Logistic Regression, Discriminant & Segmentation Analysis)

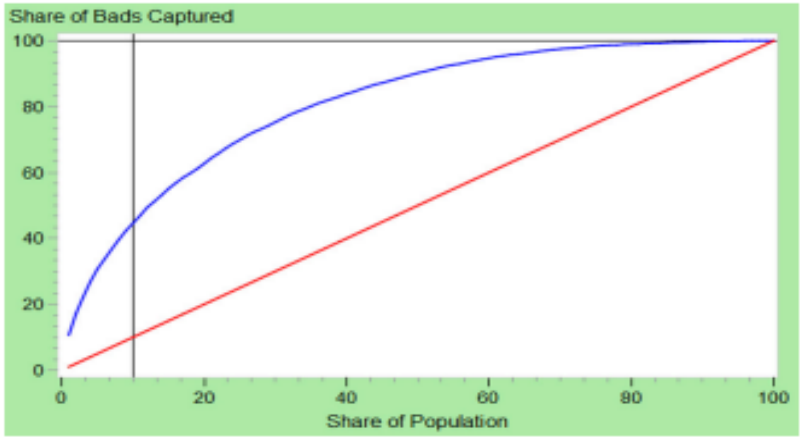
12 Month % Probability of Failure

* NOTE - Failure Events can include bankruptcy, administration, receivership or meeting of creditors

How effective is the Failure Score?

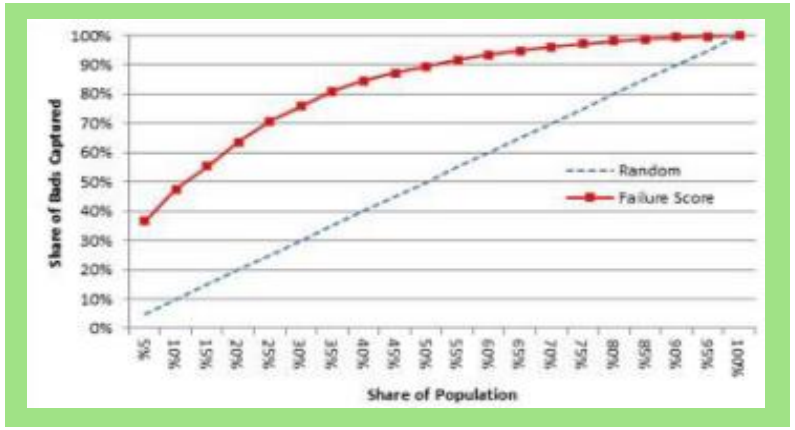
- A "Percentile Score" of 1 – 100, where 1 represents businesses that have the highest probability of failure and 100 which represents businesses with the lowest probability of failure.
- This Score Ranking shows you where a business falls among businesses in the D&B information base and is most effectively used by customers to rank order their tenants, assets and portfolios from highest to lowest risk of business failure.
- Typical ways to measure model effectiveness is by examining a trade-off curve. A trade-off curve is a plot of ascending accumulation of "GOOD" businesses vs. "BAD" businesses.
- The trade-off curves (Graphs 1 & 2) illustrate the effectiveness of the Failure Score by identifying the failure captured within population groups. For example, in Germany (Graph 1), at approximately 20% of the population, the Failure Score scores identified approximately 62.7% of the "BADs"
- This means that if a business focused on the worst scoring 20% of their German portfolio using the Failure Score, they would capture 62.7% of the "BADs" in that group.
- Graph 2 shows that if a business focused on the worst scoring 20% of their UK portfolio using the Failure Score, they would capture 65.0% of the "BADs" in that group.

Graph 1 – Failure Score Performance across All Size Segments Germany 2021



Source: Dun & Bradstreet 2021

Graph 2 – Failure Score Performance across All Size Segments UK 2021



Source: Dun & Bradstreet 2021

Frequently asked questions

How do you calculate the INCANS™ projected probability of tenant failure

Derived from the National Ranking (D&B National Failure Score), this proprietary projection of default probability shows the cumulative annual % probability that a tenant/business will default (fail) over the next 1 to 10 years. The probability is calculated using actual historical default data, statistically adjusted, to show the likelihood of default that can be expected given the risk characteristics of the company.

How do you calculate the Equivalent bond rating?

We take the D&B National Failure Score (0-100 with higher score indicating lower probability of failure) and map it a 12 month % probability of failure.

We then map that 12 month % probability of failure to a look up table of historic corporate bond failures and match it to a bond rating with an equivalent risk of default

What is the difference between traditional company credit ratings and INCANS measures of income risk?

Company credit reports provide users with a credit rating along with supporting information. Credit ratings are a point in time measurement of tenant credit worthiness and do not provide the end user with a % probability of default or any long term forecast of potential rental loss.

INCANS™ Scores provide a quantitative measure of tenant default risk based on historic data of actual business failures. These probability of defaults (PD rates) are forward looking (up to 10 years into the future) and allow the user to express the risk in cash terms

Why are INCANS risk scores more suitable for real estate?

INCANS™ Scores are specifically designed for real estate professionals, investors and lenders by experts who have worked in the CRE investment and lending industry. They are based on the % probability of default rather than a subjective measure of risk such as “5A1” or “Low Risk” etc. This means that they can be used in cashflow modelling, valuation exercises or investment underwriting.

More importantly INCANS™ Scores provide users with a forecast of cumulative default probability that can be matched to the duration of their lease for up to 10 years into the future.

This means users can measure the actual value of cash and risk and the probability of loss based on historic company failure data

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