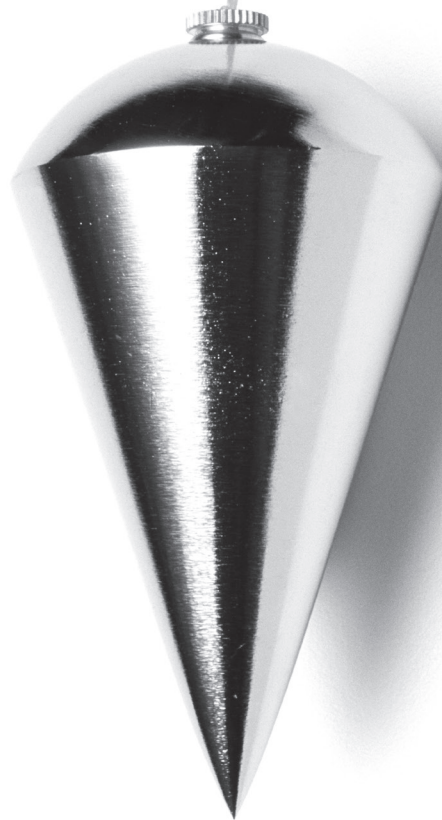


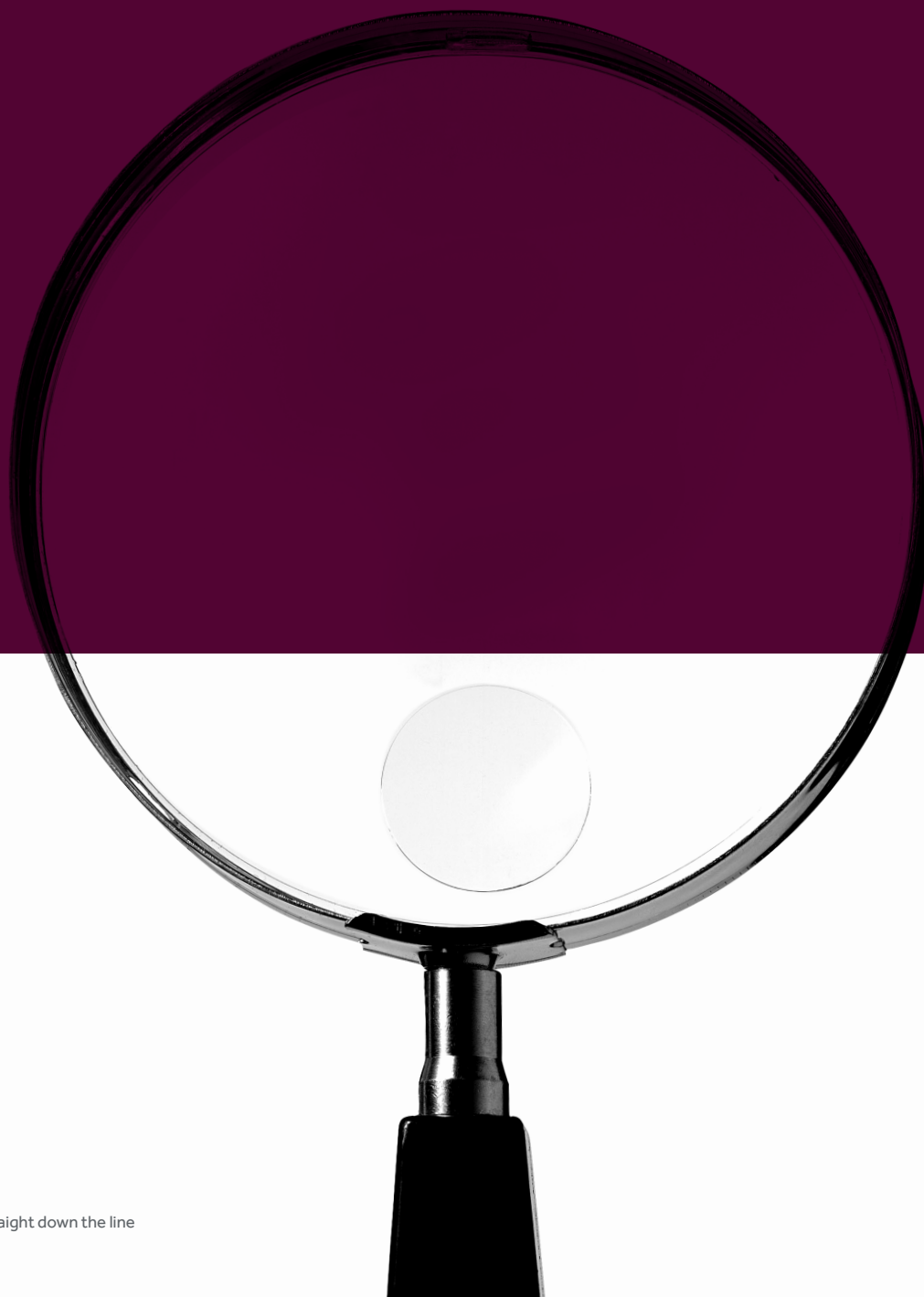
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Accuracy, straight down the line.

Portfolio analysis and risk management



The Yield Book is a trusted and authoritative source for fixed income analytics that enables market makers and institutional investors to perform complex and accurate portfolio analysis and risk management.





Now in its third decade, The Yield Book carries on its legacy of helping clients distill large quantities of complex data in order to reach a decision point.

ACCURATE. INSIGHTFUL. EFFICIENT.

The Yield Book products offer analytical insight into an extensive range of financial products in the fixed income space including Governments, Agencies, Corporates, High Yield, Emerging Markets, Mortgages, ABS, CMBS, CMOs, and Derivatives.

Powerful technology utilizing dedicated centralized servers ensures reliable, prompt data delivery.

Our global team of analysts and engineers provide training, analytics, usage, and technical support to customers around the world.

CLIENT FOCUSED.

For over twenty-five years, we have built a track record of client engagement with a wide range of the largest and most sophisticated financial institutions including:

- 92% of the largest 50 US Fixed Income Money Managers¹
- Investment management firms, banks, central banks, insurance companies, pension funds, and hedge funds
- A large number of US broker-dealers, including many regional dealers²
- Institutions worldwide in North and Latin America, Japan and Asia-Pacific, Europe, and the Middle East

80

million calculations every 24 hours.

Trust

Trusted by both buy-side and sell-side professionals to perform complex and accurate calculations, The Yield Book is genuinely market-tested in the real world, in real time.

Commitment

Unwavering client commitment has driven our business since its inception in 1989. We put our clients in control with tools that work for them. We support them 24/7 with the highest level of personalized service.

¹ Source: Ranked by total fixed income assets under management by Institutional Investor, *The 2016 II 300 – America's Top 300 Money Managers*

² Source: FTSE Russell as of May 2012. Based on Federal Reserve's list of Primary Dealers.

THE YIELD BOOK

Analyze portfolio positions, quantify risk, and identify drivers of performance with the help of a complete portfolio analytics solution

Analysis of Single Securities and Portfolios

- View the impact of trades in real time
- Evaluate the portfolio on an absolute basis or relative to a benchmark
- Extract and visualize the most important and relevant information using customized report templates

Scenario Analysis

- Generate cash flow and return projections based on user-defined shifts for interest rates, spreads, currencies, volatilities, and prepayments

Return Attribution

- Understand key drivers of total return using factors such as yield curve movements, spread changes, volatility fluctuations, and prepayments
- Customize sectors based on your portfolio structure, and evaluate sector and issue allocations
- Understand / evaluate effectiveness of currency hedging in multi-currency portfolios

Tracking Error and Value-at-Risk (VaR)

- Isolate and measure the components of risk and potential sources of return with a Monte Carlo simulation-based approach

Optimization

- Make informed decisions around trade weighting, portfolio optimization relative to a benchmark, hedging a portfolio, and more

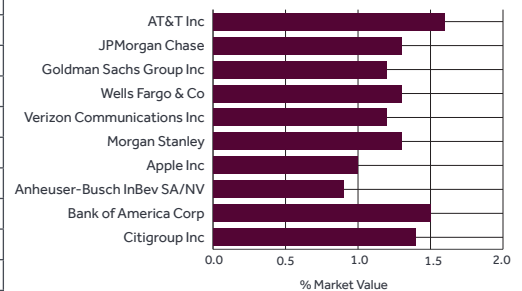
Automation

- Base your analysis on up-to-date information: automated overnight processes update portfolios, analytics, and reports so that data from the previous market close is available at the start of each business day

Top 10 Credit Issuer Holdings (Sorted by Market Value)

Issuer	# Issues	Rating	% Market Value	\$ Duration	% \$ Duration	YTM
AT&T Inc	54	BBB+	1.6	96.04	2.1	4.07
JPMorgan Chase	45	A-	1.5	53.29	1.2	2.92
Goldman Sachs Group Inc	35	BBB+	1.4	53.15	1.2	3.16
Wells Fargo & Co	40	A	1.3	60.71	1.3	3.14
Verizon Communications Inc	37	BBB+	1.3	88.60	2.0	3.93
Morgan Stanley	32	BBB+	1.3	43.83	1.0	3.01
Apple Inc	45	AA+	1.3	62.41	1.4	2.86
Anheuser-Busch InBev SA/NV	26	A-	1.2	61.97	1.4	3.13
Bank of America Corp	35	A-	1.2	46.73	1.0	3.00
Citigroup Inc	48	BBB+	1.2	47.12	1.0	3.16
Top 10 Issuers Total			13.5	613.85	13.6	3.26

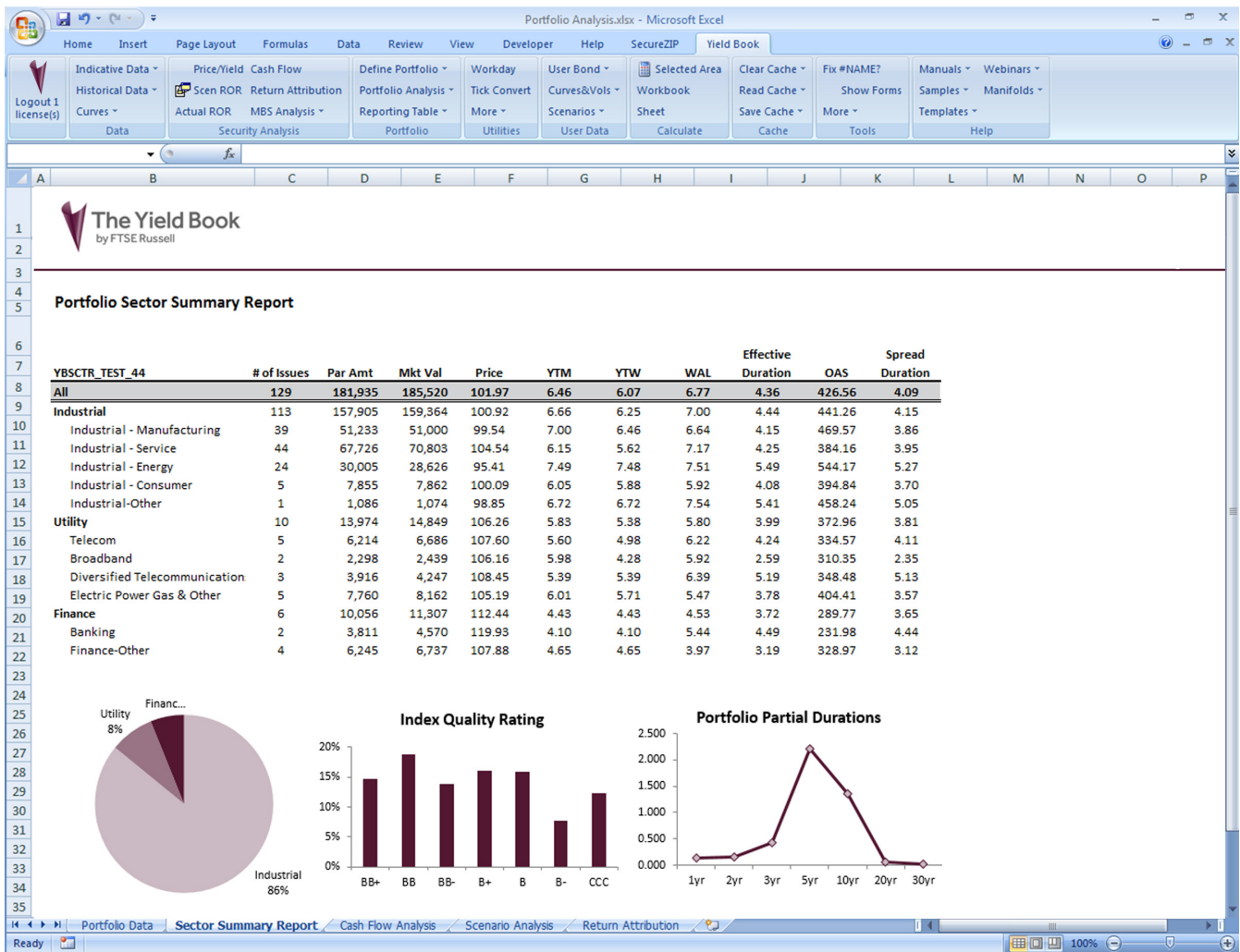
Source: FTSE Russell. For illustrative purposes only.



YIELD BOOK ADD-IN

Bring the power of The Yield Book analytics into your familiar spreadsheet environment

- Leverage from the best of The Yield Book calculations and Microsoft Excel® functionality
- Simply start with a Yield Book template, or design your own worksheet
- Create charts and graphs in your worksheet based on The Yield Book analytics



Source: FTSE Russell. For illustrative purposes only.

YIELD BOOK CALCULATOR

Analyze single securities using The Yield Book models and functionality

- Leverage The Yield Book models to examine bond characteristics and risk measures, scenario analysis results, projected cashflows, and historical trends
- Analyze single securities with this easy-to-use trading tool

FNMA12.1 PA
CUSIP: 3136A3TZ4

CMO Coupon: 2.2500 FIX Bond: AD/PAC1 Principal: REG
ISIN: US3136A3TZ41

Price/Yield 📖 📅 📊 📈

Pricing Setup 📄

Auto P/Y Level 98.981 Calculate ⚙️

Volatility LMM OIS Curve Date LIVE 📅

Prepay Model (21.3) 100 Settlement Date MARKET 📅

Curve Swap USD

Tenor	0.25	0.50	1	2	3	5	10	20	30
Yield	1.741	1.818	2.037	2.276	2.420	2.533	2.710	2.816	2.818
Swap Spread	1.741	1.818	25.5	20.7	21.3	7.5	4.9	2.2	-10.8

Curve Detail

Prices		Settlement Date: 01/25/2018	
Flat Price	98.981	Full Price	99.131
Yield	2.44118	Accrued Interest	0.15000
<u>Nominal Measures</u>		<u>Option Model Measures</u> <u>Distribution</u>	
Spread	-11.1	OAS	-42
Duration	4.811	Effective Duration	5.337
Convexity	0.469	Effective Convexity	-0.912
WAL	5.477	Yield Curve Margin	-20.4
DV01	0.0477	Effective DV01	0.0529
<u>Prepayment Model Projection</u>		<u>Partial Measures</u>	
Summa... Detail Graph		Duration DV01	
CPR ▼		1 Year	0.15370 0.00152
		2 Year	0.21540 0.00214
		3 Year	0.39590 0.00392
		5 Year	1.13810 0.01128
		10 Year	2.06760 0.02050
		20 Year	1.33350 0.01322
		30 Year	0.04780 0.00047

<u>Additional Durations</u>			
Volatility Duration	0.084	CC Spread Duration	0.220
Spread Duration	5.011	Prepay	-0.008
Spread DV01	0.0497	Turnover	-0.009
Spread Convexity	0.505	Refinancing	0.004
Z Spread Duration	-	Elbow Shift	0.001
Effective CV01	-0.0090		
<u>Partial Vegas</u>		<u>Additional Measures</u>	
Shift		Years to Maturity	23.750
1	0.00263	Convexity Effect	-21.855
2	0.00577	Effective Yield	2.143
3	0.03898	Effective WAL	5.803
4	0.02561	Forward WAL	5.78
5	0.01066	Forward Yield	2.433
		Window	02/2018-10/2041
		Annualized Yield	2.456

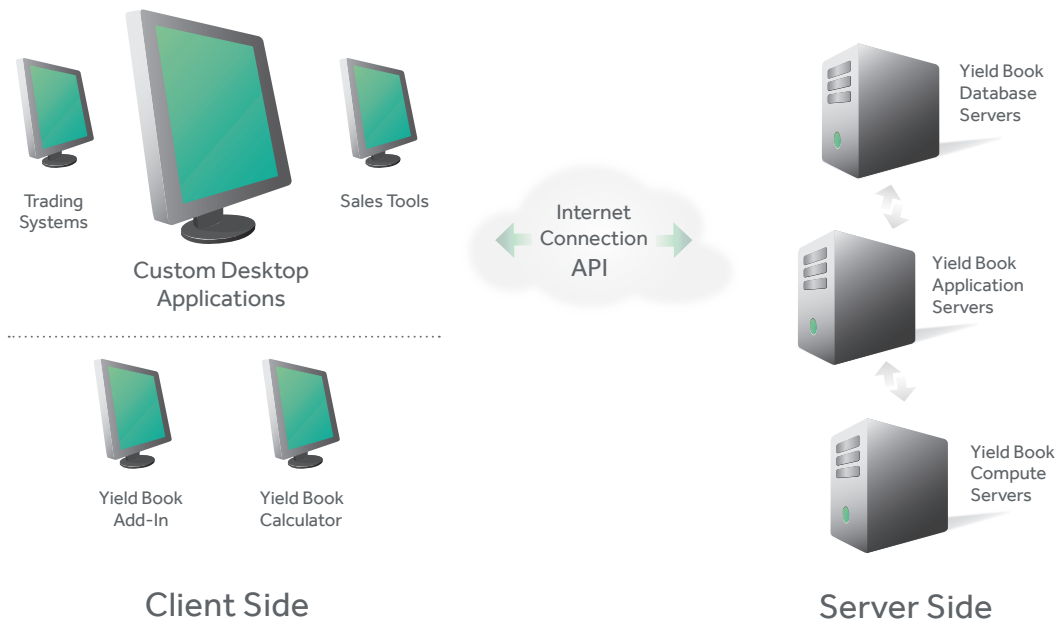
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06 | Accuracy, straight down the line

YIELD BOOK API

Incorporate The Yield Book analytics and data into your own custom application

- Customize for use in real-time front office analytics, overnight risk processing, back office calculations, and more
- Communicate securely with The Yield Book servers 24/7
- Use XML format in your preferred programming environments that support internet connection



Source: FTSE Russell

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