



I N T E R N A T I O N A L
F I N A N C E B A N K L T D

Compound Calculator

User Manual

Version 1.0 — 2025
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1. Introduction

The IFB Compound Calculator is a professional-grade web application developed by International Finance Bank (IFB) that enables clients, investors, and financial planners to model long-term investment growth, retirement income planning, and portfolio drawdown scenarios with precision.

Unlike simple interest calculators, the IFB Compound Calculator incorporates compounding returns, inflation adjustment, tax considerations, annual savings increases, and Monte Carlo-style volatility simulations — providing a realistic and multi-dimensional picture of your financial future.

1.1 Purpose of This Manual

This manual provides a comprehensive guide to all features and parameters of the IFB Compound Calculator. It is intended for both first-time users who wish to understand the basics, and experienced investors who want to leverage the full analytical depth of the tool.

1.2 Accessing the Calculator

The calculator is available at:

<https://ifbcc.ifcib.com>

No installation, registration, or login is required. The application runs entirely in your web browser and is compatible with all modern browsers including Chrome, Firefox, Safari, and Edge on both desktop and mobile devices.

1.3 Key Capabilities

- Long-term compound interest modelling with monthly granularity
- Separate accumulation (savings) and decumulation (withdrawal) phases
- Inflation-adjusted real purchasing power calculations
- Tax-aware net withdrawal calculations
- Annual savings increase (escalation) to reflect salary growth
- Early Retirement and FIRE (Financial Independence, Retire Early) scenario planning
- Breakeven point identification
- Savings target back-calculation
- Portfolio volatility simulations at four risk levels (5%, 10%, 15%, 20%)
- Interactive portfolio growth chart over time

Note: All calculations are for informational and planning purposes only. They do not constitute financial advice. Please consult a qualified financial adviser before making investment decisions.

2. Interface Overview

The IFB Compound Calculator consists of two main panels displayed on a single page:

- Investment Parameters panel (left / top) — where you enter your financial assumptions
- Calculation Results panel (right / bottom) — where results and charts are displayed

A "Calculate Investment" button triggers the computation. Results update immediately upon each calculation.

Note: *On mobile devices, the parameter panel appears above the results panel and the layout adjusts automatically for smaller screens.*

3. Input Parameters

This section explains every input field in the Investment Parameters panel. Understanding each parameter is essential for generating accurate and meaningful projections.

3.1 Core Financial Parameters

Parameter	Default / Range	Description
Initial Capital (€)	€0 – any amount	The lump-sum amount you are investing at the start. This is your opening portfolio balance on the Investment Start Year.
Monthly Savings (€)	€0 – any amount	The fixed amount you contribute each month throughout the accumulation phase. Contributions stop when the Withdrawal Start Year is reached.
Investment Start Year	e.g. 2025	The calendar year in which your investment begins. Used as the reference point for the growth timeline.
Withdrawal Start Year	e.g. 2045	The year you begin drawing an income from your portfolio. This marks the end of the accumulation phase and the start of the decumulation phase.
Monthly Net Withdrawal (€)	€0 – any amount	The after-tax monthly income you wish to draw from your portfolio during the decumulation phase.

3.2 Return and Inflation Parameters

Parameter	Default / Range	Description
Annual Return Rate (%)	0% – 30%+	The assumed average annual growth rate of your portfolio, expressed as a percentage. A typical range for a diversified equity portfolio is 5%–10% per annum. This is the gross (pre-tax) rate.
Annual Inflation Rate (%)	0% – 10%	The assumed average annual inflation rate. The calculator uses this to adjust future values back to today's purchasing power. The European Central Bank targets 2% inflation.
Monthly Interest Rate	Auto-calculated	Displayed for informational purposes. This is the Monthly Interest Rate derived from the Annual Return Rate using the formula: $(1 + \text{Annual Rate})^{(1/12)} - 1$. You do not need to enter this directly.

3.3 Personal and Tax Parameters

Parameter	Default / Range	Description
Age at Start	e.g. 35	Your age when the investment begins. Used to compute projections in age-based terms alongside calendar years, and for retirement milestone calculations.
Life Expectancy	e.g. 85 or 90	The age to which the calculator models your portfolio. This determines how many years of withdrawal the portfolio must sustain. A conservative approach is to use a higher value (e.g. 90–95) to avoid the risk of outliving your savings.
Tax Rate (%)	0% – 50%	The marginal tax rate applied to your withdrawals or investment income. The calculator uses this to compute the Monthly Net Withdrawal figure and to adjust gross return figures where applicable. Enter 0% if your investments are held in a tax-advantaged structure.
Annual Savings Increase (%)	0% – 10%	The rate at which you plan to increase your monthly savings contributions each year. For example, if you set this to 3%, your monthly savings will grow by 3% each year throughout the accumulation phase. This reflects salary growth or increasing disposable income over time.

Note: The Annual Savings Increase is compounded annually, not monthly. It applies from the second year of the accumulation phase onwards.

4. Special Scenario Modes

Below the standard parameters, the calculator offers three additional scenario analysis modes. These are designed for more specific planning objectives.

4.1 Early Retirement

This mode calculates whether your portfolio can sustain early retirement — that is, a Withdrawal Start Year significantly earlier than the conventional retirement age. When activated, the calculator re-evaluates:

- The total portfolio value at the early retirement date
- The sustainability of your desired withdrawal rate over the full period until Life Expectancy
- The number of years the portfolio remains solvent

This mode is particularly useful for FIRE (Financial Independence, Retire Early) planning. If the portfolio runs out before Life Expectancy, the calculator will display a depletion year in the results.

4.2 Breakeven Point

The Breakeven Point mode identifies the year in which your cumulative investment returns first exceed your total cumulative contributions. In other words, it answers the question: "When does my money start working harder than I do?"

This is a useful benchmark for evaluating the impact of:

- Higher initial capital (earlier breakeven)
- Higher return rates (earlier breakeven)
- Higher monthly savings (can delay breakeven in early years but improves total wealth)

4.3 Savings Target

The Savings Target mode works in reverse: given a desired total portfolio value at the Withdrawal Start Year, it calculates the required monthly savings amount to achieve that target, assuming all other parameters remain constant.

This is valuable for goal-based planning, for example:

- "I want €1,000,000 at retirement in 25 years. How much do I need to save each month?"
- "I want to generate a monthly income of €3,000 in real terms. What lump sum do I need?"

Note: *Savings Target calculations assume a constant monthly contribution. If you have an Annual Savings Increase set, the target is recalculated accordingly.*

5. Understanding the Results

After clicking "Calculate Investment", the results panel populates with six headline figures, four volatility scenarios, and an interactive growth chart.

5.1 Headline Results

Parameter	Default / Range	Description
Total Portfolio Value at Retirement	In euros (€)	The projected total value of your portfolio at the Withdrawal Start Year, after all contributions and compounded returns during the accumulation phase.
Total Contributions	In euros (€)	The sum of all money you personally invested: the Initial Capital plus all monthly savings made during the accumulation phase (before any returns).
Investment Gains	In euros (€)	The difference between the Total Portfolio Value at Retirement and the Total Contributions. This represents the pure return generated by compound growth — what the market added to your own savings.
Years Until Depletion	In years	The number of years your portfolio can sustain your chosen monthly withdrawal, given the return rate and inflation assumptions. If the portfolio never depletes within your Life Expectancy, the result will indicate "Portfolio sustainable."
Monthly Income After Tax	In euros (€)	Your chosen Monthly Net Withdrawal figure adjusted for the Tax Rate. This confirms the real after-tax income you will receive each month.
Real Purchasing Power (Today's Value)	In euros (€)	The portfolio value at retirement expressed in today's money, after stripping out the assumed cumulative inflation over the investment period. This figure shows what your retirement pot would buy in terms of current prices.

5.2 Volatility Simulations

The calculator presents four volatility scenarios that model the effect of annual portfolio fluctuations around your assumed return rate. These are sometimes referred to as stress tests or sensitivity analyses.

For each volatility level, the calculator applies a simulated range of outcomes:

Parameter	Default Range	Description
5% Volatility	Low risk	Simulates a conservative, low-volatility portfolio (e.g. bond-heavy or money market). Minor fluctuations around the mean return.
10% Volatility	Moderate risk	Simulates a balanced portfolio with modest equity exposure. Typical for a 60/40 equity-bond allocation.
15% Volatility	Medium-high risk	Simulates an equity-weighted portfolio. Corresponds roughly to a global equity index fund or diversified stock portfolio.
20% Volatility	High risk	Simulates a high-equity or concentrated portfolio. Reflects the historical volatility of broad stock market indices such as the S&P 500.

Each volatility result shows the expected portfolio value at retirement under that scenario. The difference between the base case and these figures illustrates the potential upside and downside impact of market volatility on your final outcome.

Note: Volatility simulations use a simplified model. They do not represent a full Monte Carlo simulation with thousands of randomised paths. They are designed to give a directional sense of risk, not a statistical probability distribution.

5.3 Portfolio Growth Chart

The Portfolio Growth Over Time chart is an interactive visual showing the trajectory of your portfolio value from the Investment Start Year through to Life Expectancy (or portfolio depletion, whichever comes first).

The chart typically shows:

- A rising curve during the accumulation phase (savings + compounding)
- A peak at the Withdrawal Start Year
- A declining curve during the decumulation phase (withdrawals minus remaining returns)

You can hover over the chart to see the exact portfolio value at any given year. The vertical axis represents portfolio value in euros, and the horizontal axis represents calendar years.

6. Step-by-Step Guide: Running Your First Calculation

1. Open your browser and navigate to <https://ifbcc.ifcib.com>.
2. In the "Initial Capital" field, enter the amount you are investing today. If you are starting from scratch, enter 0.
3. Enter your planned "Monthly Savings" — the fixed amount you can set aside each month.
4. Set the "Investment Start Year" to the current year (e.g. 2025).
5. Set the "Withdrawal Start Year" to the year you plan to retire or begin drawing income.
6. Enter your desired "Monthly Net Withdrawal" — the income you wish to receive in retirement.
7. Set the "Annual Return Rate" to your expected portfolio return. A common starting point is 7% for a globally diversified equity portfolio.
8. Set the "Annual Inflation Rate" to your expected inflation rate. 2.5% is a reasonable long-term assumption for the Eurozone.
9. Enter your current "Age at Start" and your assumed "Life Expectancy".
10. Enter your applicable "Tax Rate". If unsure, consult your tax adviser or check the applicable capital gains tax rate in your jurisdiction.
11. Optionally, enter an "Annual Savings Increase" to reflect salary growth (e.g. 2%–3%).
12. Click the "Calculate Investment" button.
13. Review the headline results in the Results panel on the right.
14. Scroll down to view the Volatility Simulations and the Portfolio Growth Chart.
15. Adjust parameters as needed and recalculate to explore different scenarios.

7. Example Scenarios

The following worked examples illustrate how to use the calculator for common planning situations.

7.1 Classic Retirement Planning

Scenario A: Standard Retirement at 67

Initial Capital: €50,000
Monthly Savings: €800
Investment Start Year: 2025 | Withdrawal Start Year: 2057
Monthly Net Withdrawal: €2,500
Annual Return Rate: 7% | Inflation Rate: 2.5%
Age at Start: 35 | Life Expectancy: 90 | Tax Rate: 26%
Annual Savings Increase: 2%

In this scenario, the investor has 32 years to accumulate wealth before retiring at age 67. The 2% annual savings increase reflects modest salary growth. The 26% tax rate corresponds to the German Abgeltungsteuer (capital gains tax).

7.2 Early Retirement / FIRE

Scenario B: Financial Independence at 50

Initial Capital: €100,000
Monthly Savings: €2,000
Investment Start Year: 2025 | Withdrawal Start Year: 2043
Monthly Net Withdrawal: €3,000
Annual Return Rate: 8% | Inflation Rate: 2%
Age at Start: 32 | Life Expectancy: 90 | Tax Rate: 20%
Annual Savings Increase: 3% | Mode: Early Retirement

This scenario illustrates an ambitious but achievable FIRE strategy. The investor has an 18-year accumulation window and a 40-year withdrawal horizon. The Early Retirement mode will highlight whether the portfolio can sustain the withdrawal over this extended period.

7.3 Conservative Capital Preservation

Scenario C: Low-Risk Preservation Strategy

Initial Capital: €500,000

Monthly Savings: €0

Investment Start Year: 2025 | Withdrawal Start Year: 2030

Monthly Net Withdrawal: €1,800

Annual Return Rate: 4% | Inflation Rate: 2.5%

Age at Start: 60 | Life Expectancy: 88 | Tax Rate: 25%

Annual Savings Increase: 0%

This scenario models a near-retiree with a substantial lump sum who wants to preserve capital with a conservative return assumption. The low return rate (4%) reflects a bond-heavy or multi-asset portfolio appropriate for someone with a shorter investment horizon.

8. Tips and Best Practices

8.1 Choosing a Realistic Return Rate

The return rate is the single most influential parameter in the calculation. Common benchmarks based on long-term historical data:

- Global equity index (e.g. MSCI World): approximately 7%–10% nominal per annum
- European equity index: approximately 6%–9% nominal per annum
- Balanced portfolio (60% equity / 40% bonds): approximately 5%–7% nominal per annum
- Conservative portfolio (bonds / money market): approximately 2%–4% nominal per annum

Note: Past performance does not guarantee future returns. For planning purposes, many financial planners use a conservative figure of 5%–6% to reduce the risk of overestimating outcomes.

8.2 Accounting for Inflation

Always run your scenario with inflation included. A nominal return of 7% with 2.5% inflation yields a real return of approximately 4.4%. The "Real Purchasing Power" figure in the results shows you what your portfolio will actually be worth in today's money.

8.3 Tax Rates by Jurisdiction

The appropriate tax rate depends on your country of residence and the type of investment account:

- Germany: 26.375% (Abgeltungsteuer including Solidaritätszuschlag)
- Austria: 27.5% on investment income
- United Kingdom: 18%–24% on capital gains (depending on income band)
- Tax-exempt accounts (e.g. ISA in the UK, Rürup/Riester in Germany): enter 0%

8.4 Life Expectancy — Be Conservative

Population life expectancy statistics represent averages. Someone who reaches age 65 in good health has a significant probability of living to 90 or beyond. To avoid the risk of outliving your savings, set Life Expectancy to at least 90, or 95 if you prefer a very conservative scenario.

8.5 Sensitivity Testing

After your base case calculation, systematically vary one parameter at a time to understand its impact:

- Reduce the return rate by 1%–2% to see a pessimistic scenario
- Increase inflation by 1% to model a higher-inflation environment
- Change the withdrawal start year by 2–5 years to assess the cost of early or late retirement
- Use the volatility simulations to understand the range of potential outcomes

9. Frequently Asked Questions

Q: Do I need to create an account to use the calculator?

No. The IFB Compound Calculator is freely accessible at ifbcc.ifcifb.com without registration. Simply open the page in your browser and begin calculating.

Q: Does the calculator save my inputs?

The calculator does not save inputs between sessions. If you close or refresh the browser, your inputs will be reset. We recommend noting down your key parameters or taking a screenshot of your results for future reference.

Q: What currency does the calculator use?

All monetary values are displayed in euros (€). The underlying mathematics is currency-agnostic — you may use the calculator for any currency by simply treating the numbers as your local currency, provided you enter return and inflation rates appropriate to your currency.

Q: How is the Monthly Interest Rate calculated?

The Monthly Interest Rate is derived from the Annual Return Rate using geometric compounding: $\text{Monthly Rate} = (1 + \text{Annual Rate})^{(1/12)} - 1$. This ensures that compounding monthly over 12 months produces exactly the specified annual return.

Q: What does "Years Until Depletion" mean?

This figure indicates how many years after the Withdrawal Start Year your portfolio can sustain your chosen monthly withdrawal before reaching zero, given the assumed return rate and inflation. If the portfolio value never reaches zero within your Life Expectancy, the calculator will indicate that the portfolio is sustainable.

Q: Are the volatility simulations a full Monte Carlo analysis?

No. The volatility simulations apply a simplified variance model to the base return rate. They are intended to provide a directional sense of downside and upside risk at different portfolio risk levels, not a full statistical probability distribution. For a comprehensive Monte Carlo analysis, consider consulting a financial planning professional.

Q: Can I use the calculator for investments in multiple currencies?

The calculator assumes a single currency and a single blended return rate. For multi-currency portfolios, use a weighted average return rate across your holdings.

Q: Who should I contact for further assistance?

For questions about the calculator or IFB's financial services, please contact:

Email: info@infiba.com

10. Legal Disclaimer

The IFB Compound Calculator is provided by International Finance Bank (IFB) for informational and educational purposes only.

The projections, results, and simulations generated by this tool are based on assumptions entered by the user and mathematical models of compound interest. They represent illustrative scenarios only and do not constitute:

- Financial advice or investment advice
- A guarantee, prediction, or forecast of future investment returns
- A recommendation to invest in any specific product, asset class, or strategy
- Tax advice or legal advice

Investment returns are not guaranteed and are subject to market risk, inflation risk, liquidity risk, and other factors that may not be captured in this calculator. Past performance of any asset class is not a reliable indicator of future results.

Users should seek independent financial, legal, and tax advice from qualified professionals before making any investment decisions. IFB accepts no liability for decisions made based on the output of this calculator.

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