Australian Retirement Planning Tool

User Guide & Technical Reference

Version 15.2 - February 2026

What's New in Version 15.2

Version 15.2 introduces the Executive Summary Dashboard, providing comprehensive at-a-glance analysis of your retirement plan. This guide covers versions 15.0, 15.1, and 15.2, which together represent major enhancements to the calculator.

Version 15.2 (February 2026)

Executive Summary Dashboard: Collapsible panel above charts showing success/fail status, portfolio metrics, income summary, risk assessment with traffic lights (🔴 🟡 🟢), Monte Carlo analysis, and couple tracking. Scenario-aware with hover tooltips on all metrics.

Version 15.1 (February 2026)

Monte Carlo Percentile Bands: Visualize outcome uncertainty with 10th, 25th, 75th, 90th percentile boundary lines.

Individual Partner Charts: Track each partner's super balance and pension income separately with couple tracking.

Accurate Age Pension: Implements real Centrelink rules for couples with different ages and eligibility.

Version 15.0 (February 2026)

Couple Tracking: Complete individual partner management with different ages, retirement dates, super balances, and pensions. Includes death scenarios and reversionary pension modeling.

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PART 1: GETTING STARTED

1.1 Overview

The Australian Retirement Planning Tool is a comprehensive Monte Carlo-based retirement calculator designed for Australian retirees. It models superannuation drawdowns, age pension eligibility, spending patterns, aged care costs, and death scenarios to project portfolio sustainability over retirement.

Key Features

• Monte Carlo simulation with 1,000+ scenarios and historical backtesting (1928-2025)

• Couple tracking with individual partner management and death scenarios

• Australian Age Pension modeling with accurate asset and income tests

• Aged care cost modeling (RAD and annual fees)

• Dynamic spending guardrails with automatic adjustments

• Multiple test scenarios: constant return, historical periods, formal stress tests

• Real vs nominal dollar display modes

• Comprehensive charts with percentile bands and executive summary dashboard

1.2 Quick Start Guide

Basic Setup (5 minutes)

1. Initial Situation

• Current Age: Your age today

• Retirement Age: When you plan to retire (pension starts)

• Main Super: Total superannuation balance at retirement

• Sequencing Buffer: Cash for sequence risk

2. Spending

• Base Annual Spending: Essential plus discretionary spending in retirement

• Spending Pattern: Choose constant (increasing with CPI) or declining (U-shaped) (based on JP Morgan research)

3. Pension

• Private Pension: PSS/CSS/defined benefit amount (if applicable)

• Include Age Pension: Enable to model government pension (recommended)

• Single or Couple: Affects age pension rates and asset test thresholds

4. Run Simulation

• Select test scenario: Start with 'Constant Return' at 7%

• Review charts: Portfolio Balance and Income vs Spending

• Check Executive Summary: Expand to see success/fail status and key metrics

Understanding Results

Success = Portfolio lasts to target age (typically 95) with balance ≥ $0

Failure = Portfolio depleted before target age

After reviewing basic results, explore Monte Carlo simulation for uncertainty analysis or formal stress tests to evaluate resilience.

1.3 Understanding the Interface

Display Mode Toggle

Choose between Real and Nominal dollar display in the top-right corner:

Real 2030 $ (Retirement Year): Values adjusted to retirement year purchasing power. Example: $100,000 in Year 10 shows as $82,035 assuming 2.5% inflation. Use this to understand true buying power.

Nominal $: Future dollar amounts without inflation adjustment. Example: $100,000 in Year 10 stays $100,000. Use this to match bank statements and projections.

Collapsible Sections

Most input sections can be expanded/collapsed using ▼/▶ buttons. This keeps the interface clean while allowing deep configuration when needed.

PART 2: CORE INPUTS

2.1 Initial Financial Situation

Current Age & Retirement Age

Current Age determines life expectancy calculations. Retirement Age marks Year 1 of the simulation when superannuation access begins and private pensions commence. For couples, Year 1 starts when the FIRST partner retires (see Section 2.4).

Portfolio Buckets

Main Super: Primary retirement savings. Subject to minimum drawdown rules (4-14% based on age). Earns returns based on selected scenario. Drawn down in withdrawal waterfall (see Section 6.2).

Sequencing Buffer: Conservative allocation (cash) earning fixed 3% real return. Provides protection against sequence-of-returns risk by funding spending during market downturns. Typical: 1-2 years spending.

Cash Account: Emergency fund earning 3% real. Accessed first in withdrawal hierarchy. Holds overflow cash when pension income plus minimum super drawdowns exceed expenses.

Homeownership Status

Affects Age Pension asset test thresholds. Homeowners have lower thresholds ($314,000 vs $566,000 for singles) as principal residence is exempt from asset test. Choose 'Yes' if you own your home at retirement.

2.2 Retirement Spending

Base Annual Spending

Essential plus discretionary expenses in retirement. Automatically indexed to inflation each year. Include: groceries, utilities, transport, entertainment, travel, insurance, rates. Exclude: mortgage (use debt repayment), aged care (modeled separately), one-off expenses, and splurge spending.

Spending Patterns

CPI (Level): Constant spending adjusted for inflation only.

JP Morgan (Declining): Spending curve declines gradually with age (relative to CPI) with an increase in the later years (due to aged health costs).

Splurge Spending

Additional spending for major purchases or lifestyle upgrades. Configure start age, duration, annual amount, and ramp-down period. Example: $30k/year for 10 years starting at 65 for international travel, ramping down over final 3 years.

2.3 Pension Income

Private Pension (PSS/CSS/Defined Benefit)

Enter annual pension amount (net of tax) from Commonwealth Superannuation schemes or other defined benefit pensions. Automatically indexed to CPI each year. Starts at retirement age. For couples, enter individual amounts in couple tracking mode.

Age Pension

Government payment for eligible retirees aged 67+. Eligibility determined by:

Asset Test: Total assessable assets excluding principal residence. Homeowner threshold: $314k (single), $451k (couple). Pension reduces $3 per fortnight for every $1,000 above threshold. Full cutoff: $695k (single), $986k (couple).

Income Test: Annual income including deemed investment income. Free area: $212/year (single), $368/year (couple). Pension reduces 50c per dollar above threshold.

Maximum Rates (2025): $29,754/year (single), $44,855/year (couple combined)

Calculator applies the lower result of asset or income test. For couples with different ages, uses single rate ($29,754) until both reach 67, then couple rate.

2.4 Couple Tracking (v15.0)

Enable comprehensive modeling for couples with different ages, retirement dates, super balances, and pensions. Each partner is tracked individually with automatic handling of death scenarios.

Partner Configuration

Configure each partner with:

- Name: For chart identification
- Current Age: Today's age for life expectancy
- Retirement Age: When pension starts and pre-retirement income stops
- Super Balance: Individual superannuation at retirement
- Pension Income: PSS/CSS annual amount (indexed)
- Reversionary Rate: Percentage continuing to survivor (typically 67% for PSS)
- Gender: For life expectancy calculations
- Death Age: For scenario modeling
- Pre-Retirement Income: Salary if still working when other partner retires

Year 1 Anchoring

Critical Concept: Year 1 starts when the FIRST partner retires (earliest retirement age). Partners retiring later continue earning pre-retirement income until their retirement. Pensions start at each partner's individual retirement age.

Example:

Partner 1: Current age 55, retires at 60

Partner 2: Current age 56, retires at 65

Year 1: Partner 1 is 60 (retired), Partner 2 is 61 (working, earning pre-retirement income)

Year 6: Partner 1 is 65, Partner 2 is 66 (just retired, pension starts)

Super Withdrawal Logic

Each partner's super is tracked separately. Withdrawals are proportional to accessible balances:

Example:

Partner 1 super: $800,000 (retired - accessible)

Partner 2 super: $200,000 (retired - accessible)

Total accessible: $1,000,000

Need to withdraw: $50,000

→ Partner 1 withdraws: $50,000 × 80% = $40,000

→ Partner 2 withdraws: $50,000 × 20% = $10,000

Important: Pre-retirement partners cannot access their super. Only retired partners' balances are accessible.

Death Scenarios

Model three scenarios:

Both Alive: Standard couple scenario (default). Both partners are alive for the duration of the scenario.

Partner 1 Dies: At death age: (1) Super transfers to Partner 2, (2) Pension reduces to reversionary amount, (3) Spending adjusts to single rate (default 65%), (4) Age pension switches to single rate

Partner 2 Dies: Same logic for Partner 1 as survivor

Age Pension for Couples

Accurately models Centrelink rules based on individual eligibility:

- Both under 67: No age pension
- One 67+, one under: Single rate (~$29,754/year) for eligible partner only
- Both 67+: Couple rate (~$44,855/year combined), split 50/50 in individual charts
- After death: Survivor receives single rate

Asset and income test thresholds automatically adjust based on whether single or couple rates apply.

PART 3: ADVANCED FEATURES

3.1 One-Off Expenses

IMPORTANT: One-off expense amounts are entered in NOMINAL DOLLARS (future dollars of the year they occur), not in today's dollars. For example, if you enter $50,000 for a car purchase at age 70, that represents $50,000 in the dollars of that future year, which already accounts for inflation from today. This differs from base spending, which is entered in today's dollars and automatically inflated each year.

Model major one-time costs outside regular spending: home renovations, vehicle purchases, travel. Configure description, age when expense occurs, and amount.

Default examples: New car ($50k at 65), Home renovation ($80k at 70), Major travel ($30k at 75)

3.2 Debt Repayment at Retirement

Model mortgages, personal loans, or other debts carried into retirement. Each debt requires: balance, interest rate, minimum payment. Calculator simulates monthly minimum payments with excess funds paying down principal. Interest calculated monthly. Balance cannot go negative.

3.3 Aged Care Planning

Cost Components

RAD (Refundable Accommodation Deposit): Lump sum paid on entry (typical: $400k-$550k). Refunded when exiting care. Withdrawn from, and refunded to, super balance.

Annual Care Costs: Daily fees, means-tested fees, extra services (typical: $60k-$80k/year). Indexed to inflation.

Modeling Approaches

Deterministic: Enter specific age and duration. Use for planned entry scenarios.

Probabilistic: Risk-based entry using actuarial data. Use for Monte Carlo simulations to model uncertainty.

Couple Mode Integration

In couple tracking, aged care applies to SURVIVING PARTNER only. Both assumed healthy while both alive. After first partner dies, survivor may enter care at specified age.

3.4 Dynamic Spending Guardrails

Automatic spending adjustments based on portfolio performance. If portfolio exceeds upper guardrail (default: 80th percentile), spending increases 10%. If below lower guardrail (default: 20th percentile), spending decreases 10%. Minimum floor = total pension income.

Used to demonstrate the impact of adjusting spending when markets perform poorly. Should be used with caution. The algorithm may drive spending below bare minimum expenses.

When to Use

- Prefer flexibility over certainty
- Want dynamic adjustments based on market performance
- Have reliable pension income as safety floor

Limitations

- Requires discipline to cut spending in downturns
- May trigger frequent small adjustments
- Not suitable if committed to fixed expenses
- May result in unrealistic spending in order to achieve portfolio longevity

PART 4: RUNNING SCENARIOS

4.1 Test Scenario Types

Constant Return

Fixed annual return (e.g., 7%). Simplest scenario for baseline testing. Useful for: initial planning, comparing to rules of thumb, understanding basic dynamics.

Historical Periods

Actual S&P 500 Total Return data (1928-2025, Shiller/Ibbotson). Test retirement during: 1929-1931 (Great Depression), 1973-1975 (Oil Crisis), 2000-2002 (Dot-com), 2008-2010 (GFC). Shows how plan would have performed in real market conditions.

Monte Carlo Simulation

1,000+ scenarios with normally distributed returns (default: 7% mean, 18% volatility). Provides success rate and outcome range (P10-P90). Use for: uncertainty quantification, risk assessment, confidence levels.

Historical Monte Carlo

Randomly samples actual historical returns (98 years, 1928-2025). Combines historical accuracy with Monte Carlo uncertainty. More conservative than parametric Monte Carlo.

Formal Stress Tests

Structured scenarios testing specific failure modes:

- A1 Base Case: 5% constant (baseline)
- A2 Low Returns: 3.5% constant (structural low)
- B1 Crash: -25%, -15% then 5% (immediate crash)
- B2 Bear Market: 10 years at 0% (extended stagnation)
- B3 High Volatility: Alternating +/- returns, 5% average (volatility drag)
- C1 High Inflation: 5% CPI throughout
- D1 Extreme Longevity: 45 years to age 105
- G1 Health Shock: $30k/year from age 75
- H1 Worst Case: Crash + high CPI + health costs

4.2 Understanding Results

Success Criteria

Success: Portfolio lasts to target years (typically 35 = age 95) AND ending balance ≥ $0

Failure: Portfolio depletes before target years

Note: Ending with exactly $0 at target age = SUCCESS (perfect timing)

Monte Carlo Success Rates

• 95-100%: Excellent - very robust plan

• 85-94%: Good - acceptable risk for most retirees

• 75-84%: Moderate - consider adjustments

• <75%: Risky - increase savings, reduce spending, or delay retirement

4.3 Executive Summary Dashboard (v15.2)

Collapsible panel above charts providing comprehensive at-a-glance analysis. Click '📊 Executive Summary' to expand.

Components

Scenario Indicator: Shows which test is active (Monte Carlo median, Formal Test, Historical Period, Constant Return)

Success/Fail Banner: Green ✅ or Red ❌ with years lasted and ending balance. Context-aware messaging.

Portfolio Summary: Starting/ending balance, total withdrawn, avg return, safety margin

Income Summary: Private pension, age pension timing, average/peak spending

Risk Assessment: Traffic lights (🔴 🟡 🟢) for sequence risk, longevity risk, inflation risk, health costs

Monte Carlo Analysis: Success rate, P10/P50/P90 outcomes (appears for MC scenarios only)

Individual Partner Summary: Final super and pension for each partner (appears for couple tracking only)

Every metric has hover tooltips (blue ⓘ icon). Display respects Real/Nominal toggle.

PART 5: WHAT-IF SCENARIO COMPARISON

5.1 Overview

The What-If Scenario Comparison feature allows you to save and compare up to 5 different retirement scenarios side-by-side. This helps you understand how changes in key parameters (super balance, spending, retirement age, returns) affect your retirement outcomes.

5.2 Basic Workflow

To use What-If Comparison:

1. Set up your baseline scenario with initial parameters
2. Click "💾 Save Current Scenario" to capture the baseline
3. Modify one or more parameters (e.g., reduce spending by $10k/year)
4. Click "💾 Save Current Scenario" again to save the variant
5. Repeat for up to 5 total scenarios
6. Compare results side-by-side in the comparison table

The comparison table shows both key results (Success/Fail, Ending Balance, Years Lasted, MC Success Rate, Formal Tests Passed) and input parameters for each scenario.

5.3 Comprehensive Analysis

The "🎯 Run Comprehensive Analysis" button (located at the top of the What-If panel) provides complete risk assessment by running BOTH Parametric Monte Carlo AND all 9 Formal Stress Tests in a single operation.

What it does:
• Runs 1,000 parametric Monte Carlo simulations using your Expected Return & Volatility settings
• Runs all 9 Formal Stress Tests (crash scenarios, longevity tests, inflation tests, etc.)
• Automatically saves a scenario with BOTH MC success rate and formal tests results
• Takes approximately 5-10 seconds to complete

This is ideal when you need complete risk assessment across both statistical probability (Monte Carlo) and specific failure modes (Formal Tests). For faster comparisons using only one test type, use the individual scenario buttons (Constant Return, Historical, Monte Carlo, or Formal Tests) with the "Save Current Scenario" button.

5.4 Understanding the Comparison Metrics

The comparison table displays five key result metrics:

• Success/Fail: Whether the portfolio lasted to target age with balance ≥ $0
• Ending Balance: Portfolio value at end of simulation (in real or nominal dollars as per display setting)
• Years Lasted: How many years the portfolio sustained spending

• Parametric MC Success Rate: Percentage of parametric Monte Carlo simulations that succeeded (uses Expected Return ± Volatility). Shows "—" if not applicable
• Formal Tests Passed: Number of formal stress tests passed out of total (X / Y format). Shows "—" if not applicable

Green ▲ indicators show improvement over the current scenario, red ▼ shows worse performance, and gray ═ shows equal performance.

5.5 Key Parameters to Vary

Common parameters to test in What-If scenarios:

• Super Balance: Test the impact of higher or lower starting superannuation balances
• Base Spending: Compare more frugal versus more generous lifestyle spending
• Retirement Age: Compare retiring at different ages (e.g., 60 vs 65)
• PSS/CSS Pension: Model different pension income amounts
• Splurge Spending: Test major one-time expense scenarios
• Return Scenarios: Compare optimistic vs pessimistic return assumptions (Constant, Historical, Monte Carlo)

5.6 Managing Saved Scenarios

Scenario management features:

• Rename: Click on any scenario name to edit it (e.g., "Conservative", "Aggressive", "Base Case")
• Delete: Click the 🗑 button next to individual scenarios to remove them
• Clear All: Remove all saved scenarios at once with the "Clear All" button
• Maximum: Up to 5 scenarios can be saved simultaneously - delete one to add more

The help section within the What-If panel can be collapsed/expanded using the + / − button for a cleaner interface.

PART 6: CHARTS & ANALYSIS

5.1 Chart Types & Interpretation

Portfolio Balance Chart

Shows total portfolio value over time. Lines: Total Balance (blue), Main Super (green), Buffer (orange), Cash (purple). For Monte Carlo, median line shown. Automatic hide of component lines when percentile bands active.

Income vs Spending Chart

Annual income (green) vs spending (red). Income sources: pension, age pension. Spending includes: base, splurge, aged care, debt payments. Gap filled by portfolio withdrawals.

Individual Super Balances (Couple Tracking)

Partner 1 (blue) and Partner 2 (pink) super balances tracked separately. Shows proportional withdrawals, death transfers, and depletion timeline.

Individual Pension Income (Couple Tracking)

Total pension for each partner: private pension + age pension allocation. Accounts for reversionary reductions and age pension rule changes.

5.2 Monte Carlo Percentile Bands (v15.1)

Visualizes outcome uncertainty with dashed boundary lines. Toggle with '📊 Show/Hide Bands' button.

- 10th-90th percentile (light blue): 80% of scenarios fall within
- 25th-75th percentile (medium blue): 50% of scenarios fall within (likely range)
- 50th percentile (dark blue solid): Median outcome - most typical

For Monte Carlo scenarios, median line shows actual P50 calculated across all simulations at each year, not a single 'representative' run.

5.3 CSV Export & Analysis

Download detailed year-by-year data for external analysis. Includes: balances, income, spending, pensions, withdrawals, returns, ages, debt details. For couple tracking: individual partner data.

Key Columns

- Portfolio: mainSuper, seqBuffer, cashAccount, totalBalance
- Flows: spending, income, withdrawn, minDrawdown, agePension, pensionIncome
- Market: yearReturn, cpiRate
- Couple: partner1Age, partner2Age, partner1Super, partner2Super, partner1Pension, partner2Pension
- Debt: debtBalance, debtPayment, debtInterestPaid, debtPrincipalPaid
- Aged Care: inAgedCare, agedCareAnnualCost, radWithdrawn, radRefund

Verification in Excel

- Check: income + withdrawn = spending (annual cash flow)
- Verify: totalBalance = mainSuper + seqBuffer + cashAccount
- Trace: minDrawdown ≥ required minimum for age

PART 7: TECHNICAL REFERENCE

6.1 Annual Simulation Sequence

Each year processes in this order:

1. Increment ages and year counter

2. Check partner mortality (if death scenario active)

3. Apply dynamic guardrails (if enabled, from Year 2)

4. Calculate total spending: base + splurge + aged care + debt + one-off expenses

5. Calculate total income: pension + age pension + pre-retirement income

6. Apply minimum drawdown from Main Super (mandatory, age-based percentage)

7. Cover spending using withdrawal waterfall (Section 6.2)

8. Process debt payments (interest monthly, excess to principal)

9. Process RAD payment (aged care entry) or refund (exit)

10. Apply investment returns to portfolio buckets

11. Index spending and pensions to CPI

12. Record year data

13. Check termination: balance ≤ $0 or target years reached

6.2 Withdrawal Hierarchy (Waterfall)

Funds withdrawn in priority order to minimize tax and preserve growth potential:

1. Cash Account (tax-free, no penalties)

2. Sequencing Buffer (defensive, lower volatility)

3. Main Super (or individual partner supers in couple mode)

Minimum drawdown from Main Super applied FIRST (mandatory), then additional withdrawals follow waterfall. Couple mode: proportional withdrawals from retired partners only.

6.3 Age Pension Calculation

Asset Test

Assessable assets = Main Super + Buffer + Cash (excludes principal residence)

Homeowner thresholds:

• Single: $314,000 (full pension), $695,500 (cutoff)

• Couple: $451,500 (full pension), $986,500 (cutoff)

Non-homeowner: Add $252,000 to all thresholds

Taper: Pension reduces $3 per fortnight ($78/year) for each $1,000 above threshold

Income Test

Income free area:

• Single: $212/year

• Couple: $368/year

Taper: Pension reduces 50c per dollar above free area

Final Calculation

Age pension = Min(asset test result, income test result). For couples with different ages: single rate until both 67+, then couple rate.

6.4 Minimum Drawdown Rules

Mandatory annual withdrawal percentages from Main Super:

• Age < 65: 4%

• Age 65-74: 5%

• Age 75-79: 6%

• Age 80-84: 7%

• Age 85-89: 9%

• Age 90-94: 11%

• Age 95+: 14%

Applied to Main Super balance at start of year. If minimum > available, withdraw full balance. Couple mode: separate minimums for each partner based on individual age and balance.

6.5 Returns & Inflation Modeling

Constant Return slider represents NOMINAL returns (before inflation). Real return = Nominal - CPI. Example: 7% nominal with 2.5% CPI = 4.5% real growth.

Main Super earns scenario-based returns (constant, historical, or Monte Carlo). Buffer and Cash earn fixed 3% REAL (automatically adds CPI).

All spending and pensions indexed to CPI annually. Display mode (Real/Nominal) affects chart presentation only, not calculations.

Contact & Support

Email: aust-retirement-calculator@proton.me

Documentation: Available in calculator (Help & Guide section)

User Guide: Download PDF or DOCX from calculator interface

Important: This tool is for educational and planning purposes only. It does not provide financial, tax, or retirement advice and does not consider your personal circumstances. Consult qualified professionals for personalized advice.

End of User Guide

Australian Retirement Planning Tool v15.2