APPENDIX A — ASSUMPTIONS REGISTER

Western Cape Fiscal Autonomy Model v4.0

All rand values in constant 2025 prices, using South Africa's GDP deflator unless otherwise stated. All percentages are annual rates unless otherwise stated. The model's first year, labelled 2025, is 2024 data expressed in constant 2025 prices; it is not a 2025 outturn.

Section 1 — South Africa Status Quo

Ref	Assumption	Value	Source
A1	SA GDP 2025 (starting point)	R7,600bn	National Treasury. Budget Review 2026, Chapter 1.
A2	SA fiscal capture rate	27%	National Treasury. Budget Review 2026, Chapter 4, Table 4.2. Consolidated government revenue as % of GDP, 10-year average. Conservative estimate.
A3	SA debt servicing as % of GDP	4.0%	National Treasury Budget Reviews 2015–2024, Statistical Annexure. 10-year average. SARB Quarterly Bulletin Data Story: How debt is eating into South Africa's budget. Used only in the derivation of programme spending (A4); not used in the SA debt roll-forward (see Section 1 Methodology Note).
A4	SA programme spending as % of GDP	27.3%	Derived: fiscal capture rate (27%) plus budget deficit (4.3%) minus debt servicing (4.0%).

Ref	Assumption	Value	Source
A5	SA budget deficit as % of GDP	4.3%	National Treasury Budget Reviews 2015–2024, Statistical Annexure. 10-year average, including the 2020/21 COVID year (-10.0% of GDP). No adjustment is made for this outlier: tail-risk fiscal shocks recur unpredictably and there is no basis for assuming the next ten years will be free of one; the COVID year also produced an unusually strong rebound in the years immediately following it within the same sample window, so a mechanical average nets the shock against its own recovery rather than isolating one side of it. Excluding the outlier year alone would give -3.9%; the unadjusted 10-year average is -4.3%. This deficit figure is inclusive of debt-service costs (see Section 1 Methodology Note).
A6	SA real GDP growth rate	0.7% p.a.	Stats SA. Gross Domestic Product Q4 2024 (P0441). National real GDP 10-year CAGR 2015–2024.

Section 1 — Methodology Note

South Africa's fiscal position is modelled using 10-year average ratios applied to GDP, growing at 0.7% per annum in real terms. SA Closing Debt = Opening Debt + (SA Budget Deficit × GDP) — a stock-flow-consistent identity. Interest (calculated as Opening Debt × the real effective rate, A12) is presented as a diagnostic line only: the modelled deficit already reflects total government expenditure inclusive of debt-service costs, so adding interest separately to the debt stock would double-count it.

This path is labelled "historical 4.3% deficit, no consolidation" — it is the arithmetic result of holding the 10-year historical deficit and growth rate constant. It is not a forecast of South

Africa's actual fiscal trajectory, and it is not a claim about future Treasury policy. Under this arithmetic, SA's debt/GDP ratio rises from 79.2% (2025) to 115.6% (2035).

Section 2 — WC Constants (all scenarios)

Ref	Assumption	Value	Source
A7	WC share of SA (per capita)	12%	Econometrix. Western Cape Fiscal Flows Report (2026). Consistent with Stats SA Mid-Year Population Estimates 2024.
A8	SA opening gross loan debt	R5,694bn	National Treasury. Budget Review 2025, Chapter 7: Government Debt and Contingent Liabilities.
A9	WC inherited debt	R684bn	Derived: R5,694bn × 12%. Source: National Treasury. Budget Review 2025, Chapter 7. Allocated on a population-share basis — see Section 2 Methodology Note. Model design assumption: a province is not legally liable for national debt; this is a negotiating assumption, not a legal obligation.
A10	WC starting GDP	R1,080.2bn	Stats SA P0441.2 (2024): WC real GDP R666.8bn in 2015 constant prices. Converted to 2025 prices using South Africa's GDP deflator from Stats SA's national accounts (P0441: nominal ÷ real GDP; 2015=100, 2025≈162.0): R666.75bn × 1.620 ≈ R1,080bn. The model's first year, labelled 2025, is 2024 output expressed in 2025 prices. Check: R1,080bn is 14.1% of Stats SA's 2025 nominal GDP (R7,641bn), consistent with the WC's published 14.2% share of national GDP.

Ref	Assumption	Value	Source
A11	WC fiscal capture rate (all WC scenarios) — observed 2024/25.	40.5%	Econometrix. Western Cape fiscal position — reconciliation to headline figure, 2024/25 (supplied to CIAG, October 2026): revenue raised R421.55bn ÷ WC 2024 nominal GDP R1,041.4bn (Stats SA P0441.2, Table 1) ≈ 40.5%. Both figures are in current prices, so no price conversion is involved. Applied to WC GDP in the Status Quo and all autonomy scenarios, and held constant for ten years. The rate rose over 2015–2024 (10-year aggregate 35.1%, Econometrix Western Cape Fiscal Flows Report, 2026); the model assumes no further rise. Includes national taxes attributed to the WC plus provincial and municipal self-raised revenue, including municipal service charges (electricity, water, refuse), so it is not a tax-to-GDP ratio — see Section 2 Methodology Note for the tax-only comparison, and Appendix C for the Econometrix revenue-attribution methodology.

Ref	Assumption	Value	Source
A12	Effective interest rate (real)	2.2%	National Treasury. Budget Review 2026, Chapter 7. Nominal effective interest rate on gross loan debt of 7.1% over the medium term.. This is the effective rate on debt already issued, set mainly by existing borrowing rather than by policy projections. Converted to a real rate of 2.2% by deducting the implied 10-year South African GDP deflator rate (4.9%, A13), consistent with this model's GDP-deflator basis for constant 2025 prices. CPI (10-year average 2015–2024: 5.0%, Statistics SA P0141 releases) was considered as an alternative and diverges only marginally from the GDP deflator over this period; the GDP deflator is used for internal consistency with the rest of the model's price basis. Sensitivity: at a 3% real rate, 2035 GDP versus the Status Quo is +2.1% (Conservative), +25.1% (Central) and +52.5% (Benchmarked), against +2.1%, +25.2% and +52.6% at 2.2%.
A13	SA GDP deflator, implied 10-year rate	4.9%	Derived from the same GDP deflator series used to rebase WC's starting GDP (A10): Stats SA national accounts (P0441), nominal ÷ real GDP, index 2015=100, 2025=162.0, ten intervals. Implied compound annual rate: 162.0^(1/10) − 1 = 4.94%, rounded to 4.9%. Used solely to convert the nominal effective interest rate (A12) to a real rate.

Ref	Assumption	Value	Source
A14	Debt sustainability threshold	30% of GDP	Model design assumption. Consistent with IMF fiscal sustainability guidelines and EU Stability and Growth Pact debt reduction benchmarks — functions as a ceiling, not a maintained target. See Section 2 Methodology Note.
A15	Revenue allocation to debt repayment	25%	Model design assumption. Applied to revenue after the mandatory interest charge. Calibrated to ensure government spending exceeds Status Quo from year one of autonomy.
A16	Revenue allocation to services	75%	Model design assumption. Residual after debt allocation. Enforces balanced budget constraint.
A17	WC real GDP growth rate	0.8% p.a.	Stats SA. Gross Domestic Product: Regional Estimates P0441.2 (2024). Western Cape 10-year real CAGR 2015–2024.

Section 2 — Methodology Note

A single observed fiscal capture rate of 40.5% (A11) is applied to WC GDP under the Status Quo and all autonomy scenarios. The rate does not change between scenarios; what changes is GDP, and whether the revenue is retained by the WC or partly extracted. As a sense check (not used in any calculation): national taxes attributed to the WC are ≈30.6% of WC GDP in 2024/25, against South Africa's tax-to-GDP ratio of 25.1% (SARS and National Treasury, Tax Statistics). Including an allowance for municipal property rates (not reported separately in the Econometrix reconciliation), the WC is approximately 32–33%, close to the OECD average of 33.9% (OECD/AUC/ATAF, Revenue Statistics in Africa 2025). South Africa's tax take is low by international standards; the WC's is near the OECD norm.

WC's inherited debt (A9) is allocated on a population-share basis (12%), consistent with the population share used throughout this model. This mirrors the approach used in the UK's

official Government Expenditure and Revenue Scotland (GERS) statistics, which allocate UK debt interest and defence spending to Scotland on a population-share basis for the same category of analysis — an established convention for apportioning shared national fiscal obligations. Revenue, by contrast, is measured directly rather than apportioned, since it reflects the WC's own observed economic activity rather than a shared national obligation.

Interest on WC's inherited debt (A12) is paid in cash from revenue each year and is a mandatory prior charge under autonomous scenarios: revenue after interest is split 25% to debt repayment (A15) and 75% to services (A16), until debt falls to 30% of GDP (A14). Because interest is paid rather than added to the balance, once the required repayment reaches zero the debt stock is held flat in real terms — it does not continue to grow. The 30% threshold itself continues to rise every year with GDP, so debt/GDP falls further below 30% every year after the threshold is first reached — not because debt grows more slowly than the target, but because debt has stopped growing entirely while the target keeps rising. This is the no-borrowing rule functioning as intended, not a model error — reintroducing borrowing solely to hold the ratio at exactly 30% would contradict the no-deficit rule that is itself a deliberate design feature of the autonomous scenarios.

Section 3 — Growth Premiums (autonomous scenarios)

Ref	Assumption	Value	Source
A18	Conservative growth premium (no reform premium; fiscal retention plus multiplier)	0%	Model design assumption. Isolates the fiscal effect of autonomy from any comparator-based economic reform effect. This does not mean the scenario has no growth effect at all: ending extraction increases revenue available for services spending, which lifts the level of GDP through the fiscal spending multiplier (A28). 2035 GDP is R1,195bn under Conservative versus R1,170bn under Status Quo (about 2% higher) — a real effect, distinct from the comparator-based premium applied in Central and Benchmarked. The entire GDP gap over Status Quo is attributable to the multiplier; the retention effect independent of growth is visible in this scenario's spending and debt figures.
A19	Central growth premium	+2.0% p.a.	Model design assumption. 50% discount applied to the full comparator premium, reflecting partial reform success. See Appendix D.
A20	Benchmarked growth premium	+4.0% p.a.	Derived from post-reform growth experience of Estonia, Ireland, Mauritius and Botswana. See Appendix D.

Section 4 — WC Status Quo Spending Received

Ref	Assumption	Value	Source
A21	WC spending received — observed 2024/25 base year (model input)	R297bn	Econometrix. Western Cape fiscal position — reconciliation to headline figure, 2024/25 (supplied to CIAG, October 2026). Base-year revenue (A10 × A11 ≈ R437bn) × the observed 2024/25 ratio of spending received to revenue raised (R286.61bn ÷ R421.55bn ≈ 68.0%) ≈ R297bn, in 2025 prices. Base-year extraction is therefore ≈R140bn, matching Econometrix's 2024/25 headline net fiscal position of R139.63bn in 2025 prices. Includes provincial and municipal self-raised revenue spent locally; excludes borrowing-funded spending and national debt-service costs, as in the Econometrix method.
A22	WC spending received — 10-year average 2015–2024 (reference only)	R267bn	Econometrix. Western Cape Fiscal Flows Report (2026). 2025 constant prices. Not used as a model input.
A23	Growth rate of spending received	Tracks SA programme spending	Model design assumption. Under Status Quo, WC spending received tracks SA spending growth — no change in fiscal arrangements assumed.

Section 5 — Unemployment Model

Ref	Assumption	Value	Source
A24	WC starting expanded unemployment rate (2025)	24.7%	Stats SA. Quarterly Labour Force Survey Q1 2025 (P0211).
A25	Status Quo annual unemployment change	+0.14 percentage points p.a.	Stats SA. QLFS Q1 2015: WC expanded unemployment 23.3%. Stats SA. QLFS Q1 2025: WC expanded unemployment 24.7%. Average annual change over the 10-year period. Applied uniformly to all scenarios as a conservative assumption, consistent with WC population growth (approximately 2.1%/year, Stats SA mid-year population estimates) outpacing 0.8% GDP growth over the same period.
A26	Wesgro employment elasticity	0.52	Wesgro. (2024). The Relationship between Employment and Economic Growth in the Western Cape. March 2024. Cape Town: Wesgro Research. Employment intensity (elasticity) = 0.52: a 1% rise in GDP goes with about a 0.52% rise in employment. This is an employment elasticity, not an unemployment elasticity; the unemployment formula converts it into a change in the unemployment rate (see Section 5 Methodology Note).

Ref	Assumption	Value	Source
A27	Frictional unemployment floor	5.0%	Concept follows the IMF's natural rate of unemployment — an irreducible minimum arising from labour market transitions and entry (IMF, Finance & Development, "Unemployment: The Curse of Joblessness") — and sits at the midpoint of the commonly cited 4–6% range in mainstream macroeconomic literature. This range is illustrative rather than universal: many economies operate with unemployment well below 4%, confirming the IMF's own position that the natural rate is not a fixed constant but is determined by each country's specific labour market structure and policy settings. No South African-specific estimate of this floor exists in the available literature; 5.0% is used as a defensible reference point rather than an empirically established figure for South Africa. This model applies the floor to the expanded unemployment definition rather than the IMF's narrow-definition convention, which is the stricter of the two conditions — genuine full employment, on a narrow-rate basis, would in practice be reached before scenarios in this model show the expanded rate reaching 5.0%.

Section 5 — Methodology Note

Unemployment projections use the formula: ΔEUR = −(Wesgro elasticity, A26, 0.52) × (1 − prior year's EUR) × (growth above the 0.8% baseline) + (0.14pp annual drift, A25), floored at 5.0% (A27), where EUR is the expanded unemployment rate and growth includes that

generated by the fiscal multiplier. The (1 − EUR) term converts the Wesgro employment-growth elasticity into a year-on-year change in the unemployment rate; it is a mathematical requirement of that conversion — the same percentage growth in employment moves a larger number of people, in level terms, off the unemployment rolls as the employed share of the labour force rises — not a discretionary dampening choice. See A27 for the floor's full derivation and its caveats regarding the narrow-versus-expanded definition, and A25 for the drift term.

Under all scenarios, unemployment is adjusted by the observed historical trend of +0.14 percentage points per annum (A25), applied uniformly. This trend was measured over a decade (2015–2025) in which WC's actual growth was approximately at the 0.8% baseline throughout, meaning the growth-elasticity term contributed negligibly to what was observed in that window; the +0.14pp is not a residual left over after applying the elasticity effect, since that effect was never triggered in the data it comes from. Whether this trend would hold, narrow, or widen at growth rates above the 0.8% baseline is not established by the available two-point data, and it is carried forward unchanged as a conservative assumption rather than adjusted without evidence in either direction.

A separate risk, distinct from the above, is that the Wesgro elasticity (A26) is itself documented as implicitly incorporating historical labour force dynamics including participation rate changes, net migration and demographic shifts — the same broad category of forces likely driving the observed drift. Some overlap between the two terms cannot be ruled out with the data available. If present, this overlap would cause the model to understate rather than overstate the unemployment improvement in the autonomy scenarios, since the drift is a uniform annual worsening applied on top of, not instead of, the elasticity-driven improvement.

This works in the opposite direction to a second effect: the (1 − EUR) conversion assumes the additional jobs do not themselves enlarge the labour force, whereas faster growth would likely draw in new work-seekers and migrants (the expanded definition already counts discouraged work-seekers, but not new entrants or in-migrants). That effect would cause the model to overstate the improvement, most noticeably in Benchmarked. Neither effect can be quantified with the available data.

Section 6 — Fiscal Spending Multiplier

Ref	Assumption	Value	Source
A28	Fiscal spending multiplier (government consumption / services spending)	0.16	Du Rand, Hollander and van Lill (2023). Time-varying fiscal multipliers for South Africa: A large time-varying parameter vector autoregression approach. WIDER Working Paper 2023/106. UNU-WIDER-. Government consumption multiplier = 0.16, from an average cumulative multiplier of 0.155 the paper reports as not statistically different from zero over the full sample period. Applied to additional government services/consumption spending only (health, education, social development, policing — consistent with the composition of WC Spending Received in the underlying Econometrix data). Applied as a level effect: each year's additional services spending lifts the following year's GDP once, and the lift lasts only as long as the additional spending continues. Infrastructure and capital spending are not modelled; the same paper reports an average cumulative government investment multiplier of −0.118 for South Africa. Lasting gains in productive capacity are represented only by the reform premiums (A19, A20).
A29	Multiplier time lag	1 year	Same source. Peak multiplier effect identified at four quarters after spending shock.

Section 6 — Methodology Note

The multiplier is applied to the additional government services/consumption spending generated in each autonomy scenario above the Status Quo level, with a one-year lag. It is applied as a level effect: GDP each year = underlying GDP (GDP before the multiplier: 0.8% base growth plus the scenario's premium) + 0.16 × the previous year's additional services spending; the effect is not compounded into later years. Additional spending is autonomy services spending minus Status Quo spending received: under autonomy the WC gives up all spending received, including equitable-share transfers and grants, so this is a like-for-like comparison. The study this figure is drawn from is contextually different from the Western Cape scenario it is applied to here, and is used as the best available data rather than an ideal match: the model assumes that a large, ongoing increase in provincial spending, funded directly by additional revenue rather than debt, will provide some level of economic impetus. 0.16 is a national, deficit-financed estimate applied here to retained revenue. Leakage to the rest of the country would push a provincial multiplier lower; retaining revenue that previously left the province could push it higher. The bias could run either way. With no multiplier, 2035 GDP versus the Status Quo would be about 0% (Conservative), +21.7% (Central) and +47.6% (Benchmarked), against +2.1%, +25.2% and +52.6% with it.

Kemp and Hollander (2020, Empirical Estimates of Fiscal Multipliers for South Africa, WIDER Working Paper 2020/91) — a separate study using a different methodology and dataset — identify a short-term range of 0.13 to 0.61, and a long-term present-value range of −0.24 to 1.06, for South African fiscal multipliers. The model uses Du Rand, Hollander and van Lill's (2023) central government consumption estimate of 0.16, which sits near the lower end of Kemp and Hollander's short-term range.

Section 7 — Scope

The model estimates the fiscal, economic and labour-market implications of full fiscal autonomy for the Western Cape over a ten-year period (2025–2035). The following are outside the scope of the model:

- Transition costs arising from any move to fiscal autonomy or sovereign independence
- Currency arrangements

- Trade-friction effects
- Migration effects beyond those implicitly captured in the historical elasticity data
- Capital-flight effects
- Institutional design
- Infrastructure and capital spending (see A28)
- The labour-force response to faster growth (see Section 5 Methodology Note)