APPENDIX C — SOURCE REGISTER

Western Cape Fiscal Autonomy Model v4.0

This register documents all primary sources used in the model. Sources are grouped by model component. All assumptions are cross-referenced to Appendix A.

Section 1 — SA Baseline Sources

C1: National Treasury — SA Fiscal Ratios

Source:

- National Treasury. (2026). Budget Review 2026, Chapter 4, Table 4.2: Budget revenue outcomes and outlook. Pretoria: National Treasury.
- National Treasury Budget Reviews 2015–2024, Statistical Annexure. Pretoria: National Treasury.
- SARB Quarterly Bulletin Data Story: How debt is eating into South Africa's budget.

Purpose:

- To establish South Africa's consolidated fiscal position as the basis for the WC Status Quo model.

Variables Used:

Variable	Value
SA fiscal capture rate	27% of GDP
SA debt servicing	4.0% of GDP — used only in the derivation of programme spending; not used in the debt roll-forward (see Appendix B, Section 1)
SA programme spending	27.3% of GDP (derived)
SA budget deficit	4.3% of GDP, inclusive of debt-service costs

Model Components:

- SA Baseline Model
- WC Status Quo Model

C2: National Treasury — SA Opening Debt

Source:

- National Treasury. (2025). Budget Review 2025, Chapter 7: Government Debt and Contingent Liabilities. Pretoria: National Treasury.

Purpose:

- To establish South Africa's gross loan debt as the basis for calculating the WC's inherited debt share, allocated on a population-share basis (see Appendix A, Section 2 Methodology Note, for the GERS-precedent justification of this basis).

Variables Used:

Variable	Value
SA gross loan debt (2024/25)	R5,694bn
WC inherited debt (12% of SA)	R684bn

C3: National Treasury — SA Starting GDP

Source:

- National Treasury. (2026). Budget Review 2026, Chapter 1. Pretoria: National Treasury.

Variables Used:

Variable	Value
SA GDP (2025)	R7,600bn

Section 2 — WC Fiscal Sources

C4: Econometrix — WC Fiscal Flows

Source:

- Econometrix (Pty) Ltd. (2026). Western Cape Fiscal Flows. 13 July 2026. Stellenbosch: Econometrix (Pty) Ltd.
- The report's underlying sources include National Treasury, Statistics South Africa, SARS and all nine provincial treasuries.

Purpose:

- To provide the Western Cape's ten-year fiscal flows (2015–2024), the revenue- and expenditure-attribution methodology, and the historical rise in the WC's net fiscal contribution. The model's base-year figures come from Econometrix's 2024/25 reconciliation (C4a). The R140bn total extraction figure and R125.2bn net extraction figure are model outputs that reconcile with the Econometrix findings; they are not used as direct model inputs.

Revenue and Expenditure Attribution Methodology:

- The Econometrix report cannot directly observe all revenue and expenditure flows at a provincial level, since the majority of South African tax revenue (Personal Income Tax, Corporate Income Tax, VAT) is collected nationally with no official provincial breakdown. The report applies its own provincial attribution framework, documented in its Appendices 3, 4 and 5:
    - Personal Income Tax (PIT) — attributed by residence: total PIT collections adjusted using provincial taxable income proportions from SARS Tax Statistics publications (approx. 30.6% of WC revenue raised).
    - Value Added Tax (VAT) — attributed by consumption: total VAT collections adjusted using provincial taxpayer counts as a geographic proxy (approx. 21.4% of WC revenue raised).
    - Corporate Income Tax (CIT) — attributed by economic activity, not headquarters location: SARS sectoral CIT Tax Assessed data weighted by Stats SA's provincial sectoral Gross Value-Added breakdown (approx. 11.6% of WC revenue raised).

- Spending received — a substantial share is attributed via observed allocations (Provincial and Municipal Equitable Share, SASSA grant data, university funding); the residual (national department operational expenditure, unattributable via direct data) is allocated via a composite of provincial GDP share and provincial General Government Services value-added share. A pure population basis was considered and rejected for this residual, since population is already a significant determinant of the Equitable Share formulas and would otherwise be double-weighted.

Variables Used:

Variable	Value
WC revenue raised (10yr avg 2015–2024, 2025 prices)	R364.6bn (reference only)
WC spending received (10yr avg 2015–2024)	R267bn (reference only)
WC fiscal capture rate (10yr aggregate)	35.1% (reference only)
WC net fiscal contribution, 2015 → 2024 (2025 prices)	≈R70bn → ≈R140bn

Model Components:

- WC Status Quo Model
- WC Autonomous Scenario Revenue Model

C4a: Econometrix — 2024/25 Reconciliation of the WC Fiscal Position

Source:

- Econometrix (Pty) Ltd. (2026). Western Cape fiscal position — reconciliation to headline figure, 2024/25 (R billion). Supplied directly to CIAG, October 2026; not included in the published report.

Purpose:

- To establish the model's observed base year. The WC fiscal capture rate (A11) is 2024/25 revenue raised ÷ WC 2024 nominal GDP (Stats SA P0441.2, Table 1; see C5). Status Quo spending received (A21) is set at the observed 2024/25 ratio of spending received to revenue raised. Revenue raised comprises national taxes attributed to the WC, using the attribution methodology described in C4, plus provincial and municipal self-raised revenue, including municipal service charges. Spending received excludes borrowing-funded spending and national debt-service costs. Base-year extraction is ≈R140bn, matching the reconciliation's headline net fiscal position.

Variables Used:

Variable	Value
WC revenue raised, 2024/25 (current prices)	R421.55bn
of which national taxes attributed to the WC	R318.45bn
of which provincial and municipal self-raised revenue	R103.10bn
WC spending received used in the net position, 2024/25	R286.61bn
WC net fiscal position, 2024/25 (2025 prices)	R139.63bn
WC nominal GDP, 2024 (Stats SA P0441.2, Table 1)	R1,041.4bn
WC fiscal capture rate, 2024/25 (observed)	40.5%
Spending received ÷ revenue raised, 2024/25	68.0%

Model Components:

- WC Status Quo Model
- WC Autonomous Scenario Revenue Model

C5: Stats SA — WC Starting GDP

Source:

- Stats SA. Gross Domestic Product: Regional Estimates P0441.2 (2024). Western Cape real GDP in 2015 constant prices: R666.75bn (Table 2).
- Stats SA national accounts: SA nominal and real GDP (2015 prices) for 2024 and 2025 — P0441.2 (2024), Tables 1 and 2; P0441, quarter ended December 2025, Table 4 and 'Nominal GDP for 2025'. GDP deflator = nominal ÷ real × 100: 2025 ≈ 162.0 (2015 = 100). WC nominal GDP 2024: R1,041.4bn (P0441.2, Table 1), used for the capture rate (C4a).

Purpose:

- To establish the Western Cape's economic base at the start of the modelling period in constant 2025 prices, consistent with the Econometrix report.

Variables Used:

Variable	Value
WC starting GDP (2025 constant prices)	R1,080.2bn
Implied GDP deflator rate (10yr, 2015–2025)	4.9% — see C7

C6: SARS / OECD — Tax-only Comparison (sense check)

Source:

- OECD/AUC/ATAF. (2025). Revenue Statistics in Africa 2025. Paris: OECD Publishing.
- SARS and National Treasury. Tax Statistics 2023. Pretoria.

Purpose:

- A sense check, not used in any calculation. National taxes attributed to the WC (C4a) are ≈30.6% of WC GDP in 2024/25, against South Africa's tax-to-GDP ratio of 25.1%. 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%. South Africa's tax take is low by international standards; the WC's is near the OECD norm.

Variables Used:

Variable	Value
OECD average tax-to-GDP ratio (2023)	33.9%
SA tax-to-GDP ratio (SARS)	25.1%
WC national taxes ÷ WC GDP, 2024/25	≈30.6%
WC including an allowance for municipal property rates	≈32–33%

Section 3 — Interest Rate Sources

C7: National Treasury / Stats SA — Effective Interest Rate (Real)

Source:

- National Treasury. (2026). Budget Review 2026, Chapter 7: Government Debt and Contingent Liabilities. Pretoria: National Treasury. Nominal effective interest rate on gross loan debt: 7.1% over the medium term.
- Stats SA national accounts (see C5). GDP deflator (2015=100, 2025≈162.0). Implied 10-year compound annual rate: 162.0^(1/10) − 1 = 4.94%, rounded to 4.9%.

- Statistics South Africa. Consumer Price Index statistical releases (P0141). 10-year average CPI inflation, 2015–2024: 5.0%. Retained as a cross-reference only; not used in the operative rate.

Purpose:

- To establish the real effective interest rate applied to all scenarios' opening debt balance. The nominal rate (7.1%) is converted to a real rate by deducting the implied GDP deflator rate (4.9%), consistent with this model's GDP-deflator basis for constant 2025 prices, rather than the CPI (5.0%), which was considered as an alternative and diverges only marginally over this period.

Variables Used:

Variable	Value
Nominal effective interest rate	7.1%
Implied GDP deflator rate (10yr)	4.9%
Effective interest rate (real, used in model)	2.2%

Model Components:

- SA Baseline Model (diagnostic only)
- WC Status Quo Model (diagnostic only)
- WC Autonomous Scenario Debt Model (mandatory prior charge)

Section 4 — Economic Growth Sources

C8: Stats SA — WC Real GDP Growth Rate

Source:

- Stats SA. Gross Domestic Product: Regional Estimates P0441.2 (2024). Western Cape 10-year real GDP CAGR 2015–2024.

Variables Used:

Variable	Value
WC real GDP growth rate (Status Quo / Conservative baseline)	0.8% p.a.

C9: Stats SA — SA Real GDP Growth Rate

Source:

- Stats SA. Gross Domestic Product Q4 2024 (P0441). National real GDP 10-year CAGR 2015–2024.

Variables Used:

Variable	Value
SA real GDP growth rate	0.7% p.a.

C10: Comparator Growth Premium

Source:

- Appendix D — Comparator Growth Premium Methodology, including caveats on the Estonia and Ireland comparators.
- World Bank, World Development Indicators (various years).

Purpose:

- To derive the growth premium achievable under comparator-level economic reform, benchmarked against Estonia, Ireland, Mauritius and Botswana.

Variables Used:

Variable	Value
Conservative growth premium	0%
Central growth premium	+2.0% p.a. (50% of full premium)
Benchmarked growth premium	+4.0% p.a. (full comparator premium)

Section 5 — Fiscal Multiplier Sources

C11: UNU-WIDER — Fiscal Spending Multiplier

Source:

- 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.
- Kemp and Hollander (2020). Empirical Estimates of Fiscal Multipliers for South Africa. WIDER Working Paper 2020/91, UNU-WIDER. A separate study using a different methodology and dataset.

Purpose:

- To estimate the additional GDP generated by increased government services/consumption spending under fiscal autonomy. The multiplier is applied only to the increment above Status Quo spending on government services (health, education, social development, policing), with a one-year lag consistent with the finding that the peak effect occurs four quarters after a spending shock. It is applied as a level effect: each year's additional spending lifts the following year's GDP once, and is not compounded. Infrastructure and capital spending are not modelled; Du Rand, Hollander and van Lill (2023) report an average cumulative government investment multiplier of −0.118 for South Africa.

Variables Used:

Variable	Value
Government consumption multiplier (Du Rand, Hollander and van Lill, 2023)	0.16
Short-term multiplier range (Kemp and Hollander, 2020, separate study)	0.13 to 0.61
Time lag	1 year (4 quarters)

Assumption Note:

- 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. Kemp and Hollander (2020) — 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; 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 6 — Labour Market Sources

C12: Stats SA — Historical Unemployment Trend

Source:

- Stats SA. Quarterly Labour Force Survey Q1 2015 (P0211): WC expanded unemployment 23.3%.

- Stats SA. Quarterly Labour Force Survey Q1 2025 (P0211): WC expanded unemployment 24.7%.
- Stats SA. Mid-Year Population Estimates: WC population grew from approximately 6.20m (2015) to 7.63m (2025), approximately 2.1% p.a., against 0.8% p.a. WC GDP growth over the same period.

Purpose:

- To establish the historical annual trend in WC expanded unemployment, applied uniformly to all scenarios as a conservative assumption. Whether this trend would hold, narrow, or widen at growth rates above the 0.8% baseline it was measured from is not established by the available two-point data; it is carried forward unchanged rather than adjusted without evidence in either direction.

Variables Used:

Variable	Value
WC starting expanded unemployment (2025)	24.7%
Annual trend (applied to all scenarios)	+0.14 percentage points p.a.
WC population growth (2015–2025)	approximately 2.1% p.a.

Historical Data:

Variable	Value
2015	23.3%
2016	23.0%
2017	24.7%
2018	22.5%

Variable	Value
2019	22.7%
2020	24.8%
2021	27.9%
2022	29.0%
2023	25.9%
2024	26.1%
2025	24.7%

C13: Wesgro — Employment Elasticity

Source:

- Wesgro. (2024). The Relationship between Employment and Economic Growth in the Western Cape. March 2024. Cape Town: Wesgro Research.

Purpose:

- To estimate the relationship between GDP growth and employment growth in the Western Cape. The elasticity is applied to the growth rate above the 0.8% baseline, converted into a year-on-year change in the unemployment rate via the (1 − prior year's EUR) term — a mathematical requirement of converting an employment-growth elasticity into a rate change, not a discretionary dampening choice. The conversion assumes the additional jobs do not themselves enlarge the labour force; faster growth would likely draw in new work-seekers and migrants (see Appendix A, Section 5 Methodology Note).

Variables Used:

Variable	Value
Employment elasticity of growth	0.52

C14: IMF — Frictional Unemployment Floor

Source:

- International Monetary Fund. Finance & Development. "Unemployment: The Curse of Joblessness."

Purpose:

- To establish an illustrative frictional unemployment floor, following the IMF's general concept of the natural rate of unemployment — an irreducible minimum arising from labour market transitions and entry. This concept is not a fixed constant; the IMF's own position is that the natural rate is determined by each country's specific labour market structure and policy settings, and no South African-specific estimate exists in the available literature. The floor is applied here to South Africa's expanded unemployment definition rather than the IMF's own narrow-definition convention (the basis on which the IMF's own published unemployment statistics, e.g. the World Economic Outlook series, are constructed) — the stricter of the two conditions.

Variables Used:

Variable	Value
Frictional unemployment floor	5.0% (midpoint of the commonly cited 4–6% range in mainstream macroeconomic literature)

Section 7 — Model Governance

C15: Debt Sustainability Threshold

Source:

- Model design assumption. Consistent with IMF fiscal sustainability guidelines and EU Stability and Growth Pact debt reduction benchmarks — both function as ceilings, not maintained targets. Under the no-deficit rule (no new borrowing in autonomous scenarios), interest (C7) is paid in cash from revenue and is not added to the debt stock; once required repayment reaches zero, debt is held flat in real terms while the threshold itself continues to rise with GDP, so debt/GDP falls further below the threshold every year thereafter. This is expected model behaviour, not a shortfall against policy — see Appendix A, Section 2 Methodology Note.

Variables Used:

Variable	Value
Debt sustainability threshold	30% of GDP (ceiling, not held target)

C16: Fiscal Allocation Rule

Source:

- Model design assumption. Calibrated to ensure government spending exceeds Status Quo from year one of autonomy while maintaining meaningful debt reduction.

Variables Used:

Variable	Value
Revenue allocation to debt repayment	25%
Revenue allocation to services	75%

Section 8 — Source Quality Statement

The model relies on the following categories of primary sources:

Primary Statistical Sources:

- Statistics South Africa (Stats SA)
- National Treasury
- South African Revenue Service (SARS)
- South African Reserve Bank (SARB)

Independent Economic Analysis:

- Econometrix (Pty) Ltd, including its 2024/25 reconciliation of the WC fiscal position (supplied to CIAG)
- Wesgro Research
- UNU-WIDER (United Nations University World Institute for Development Economics Research), including SA-TIED-badged and non-SA-TIED-badged working papers, in partnership with National Treasury South Africa

International Statistical Bodies:

- OECD (Organisation for Economic Co-operation and Development)
- International Monetary Fund (IMF)
- World Bank

Comparator Benchmarking:

- Comparator Growth Premium Methodology — see Appendix D

Model Design Assumptions:

- Debt sustainability threshold (30% of GDP, ceiling not held target)
- Fiscal allocation rule (25%/75%)
- Where assumptions are used in place of directly observable data, those assumptions are explicitly identified in Appendix A.