

Fiscal Adjustment and Domestic Demand

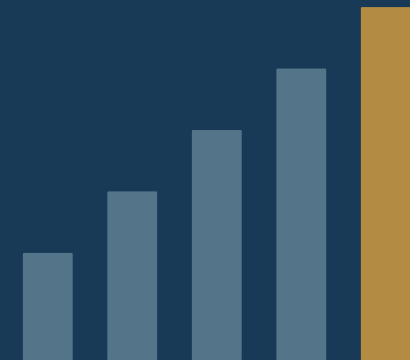
The Importance of Spending Composition

Wages. Procurement. Transfers. Capital. Consumption and investment.

Commissioning institution: Institute of Development and Economic Research (IDER)

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Execution: H1 2025; conditional demand: 2026

About this publication

Independent research • transparent evidence • reproducible calculations

TITLE AND SERIES

Fiscal Adjustment and Domestic Demand: The Importance of Spending Composition

IDER's Ghana Macroeconomic Policy and Business Intelligence
Briefings

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RESPONSIBILITY AND INTERPRETATION

The author and IDER are responsible for this independent research. Source citation does not imply endorsement. Accounting comparisons, attributed study findings and conditional demand models are separate evidence classes. No original Ghana-wide causal effect is claimed.

DATA, CODE AND ENQUIRIES

The package provides frozen source transcriptions, assumptions, executable code, figure/table data and verification records. Original source binaries are not bundled. Research and corrections: info@iderafrica.com.

Contents

Page numbers match the printed folios and PDF pages; entries link to their destinations.

READING AND DECISION USE	FISCAL AND DEMAND EVIDENCE	APPLICATION AND TECHNICAL REFERENCE
About this publication2	1 Measurement and classification19	8A Empirical validation76
Reading guide4	2 Annual spending composition24	9 Identification and selection99
Infographic abstract5	3 Half-year budget execution36	10 Decision use and implementation104
Two-page decision brief6	4 Published empirical evidence44	11 Sources and release limits109
Abbreviations and reading terms8	5 Category-specific transmission50	12 Model and equation catalogue111
How to interpret the evidence9	6 Demand and composition scenarios54	References132
Figure, table and model indexes10	7 Investment and service bundles65	Evidence synthesis136
Technical terminology15	8 Enterprise sales and cash68	

NAVIGATION Running headers return to Contents. Source IDs link to References; equation IDs return to the model index.

Read the spending type, the cash delivered and the demand channel together

The same gross expenditure reduction can affect consumption, enterprise orders and productive capacity differently.

01 WHAT CHANGED?

Separate wages, purchases, household support and capital. Trace government grants to their final use. Keep actual, preliminary and projected records distinct.

02 WHAT REACHED THE ECONOMY?

Match cash delivery, household disposable resources, procurement origin and project milestones. A lower recognised amount is not an automatically identified demand shock.

03 WHAT IS THE ECONOMIC EFFECT?

Distinguish source estimates from imposed scenarios. Consumption, enterprise sales, productive assets and GDP have different units and identifying requirements.

[Annual evidence | p. 24](#)

[Execution | p. 36](#)

[Demand scenarios | p. 54](#)

[Models | p. 111](#)

Spending composition changes the economic meaning of fiscal adjustment

Research question: which expenditure changes reach households, firms and investment—and through which mechanisms?

RESEARCH QUESTION

What is cut—and which demand channel changes?

Spending categories, cash delivery and economic outcomes are separate records.

EVIDENCE STATUS

Official fiscal comparisons
Attributed empirical studies

Explicit conditional models

01 CLASSIFY

Separate household transfers, government grants, compensation and capital financing. Preserve the reporting perimeter.

02 ESTIMATE

Recalculate nominal, price-adjusted and execution changes. Keep published causal estimates attributed to their original studies.

03 STRESS

Test matched-net portfolios, exact parameter-box bounds and 1,098 adaptation-aware cash cases. Scenarios are not probabilities.

H1 2025 CAPITAL EXECUTION

39.34% / 58.38%

Narrow versus broad capital perimeter. Capital embedded in grants changes the interpretation.

PUBLISHED LEAP CONSUMPTION

GHS 26.507

Seven-year monthly effect per adult equivalent, 2022 prices; source FDR $q=0.012$. Programme evidence, not a national MPC.

Sources: IMF CR 20/212 [S01], MoF Mid-Year 2025 [S02], LEAP evaluation [S11]; IDER calculations [S10].

The adjustment headline conceals different household and enterprise exposures

Keep source fiscal categories, within-year execution and conditional demand effects separate.

01 COMPOSITION

SOURCE RECOGNITION SENSITIVITY

-16.585 / +13.095

GHS bn; 2024–2025 primary change

Not one uniform cut

Reported primary spending fell; excluding the source other/discrepancy line, it rose. Neither alone identifies the causal fiscal stance.

02 EXECUTION

H1 2025 PROVISIONAL RECORD

39.34% / 101.36%

Narrow capital / compensation execution

Same half-year denominator

Capital execution lagged payroll. The broad capital measure is 58.38%; do not add grants and their capital content twice.

03 COMPARISON

EQUAL-NET-TARGET ROBUSTNESS

-0.373 to +0.075

GHS bn; wage-heavy minus transfer-heavy

Ranking reverses

At equal direct-tax-adjusted saving, the sign changes within the declared parameter box. No unconditional cut ranking or welfare optimum is identified.

DECISION RULE Reconcile the classification, cash delivery, household incidence and service bundle before judging the adjustment.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; IDER calculations [S10].

A 90-day route to a composition-aware fiscal and business assessment

Proposed after authorised access; responsibilities and acceptance criteria are explicit.

DAYS 0–30	DAYS 31–60	DAYS 61–90
Fiscal and programme data owners CLASSIFY & RECONCILE Map final spending uses, cash status, source vintages and project commitments. Preserve unmapped government grants and category-price gaps. Every captured material row has a source, unit, basis and status.	Treasury, statistics and firms LINK & TEST Connect payroll, transfers, procurement and capital records to consented household, supplier and project outcomes. Run matched scenario cases. No known double counting; all missing outcomes and prices flagged.	IDER and independent reviewer REPRODUCE & RELEASE Publish the composition and execution dashboard, scenario assumptions and a preregistered design for the next empirical stage. Outputs replay; identified and conditional claims remain separate.

Sources: IDER implementation framework [S10].

Proposed controls after authorised access—not achieved national coverage, agreed mandates or an instruction to delay legally due payments.

Abbreviations and reading terms

Source-specific classifications, economic concepts and the unit of analysis remain controlling.

BoG / MoF	Bank of Ghana / Ministry of Finance, Ghana.
CAGD / GIFMIS	Controller and Accountant-General's Department / government financial-management system.
GDP / GHS	Gross domestic product / Ghana cedi.
CPI	Consumer price index; annual-average measure used here.
GFS / IMF	Government finance statistics / International Monetary Fund.
MPC	Marginal propensity to consume; assumed in the scenario model.
LP / IV	Local projections / instrumental variables; designs require identification.
LEAP	Livelihood Empowerment Against Poverty programme.
NHIF / NHIS	National Health Insurance Fund / Scheme.
GETFund / DACF	Ghana Education Trust Fund / District Assemblies Common Fund.

Primary expenditure	Source expenditure excluding the corresponding interest line.
Domestic financing	Source of funding; not the same as domestic sourcing.
Capital perimeter	Coverage of the narrow or broad investment measure.
Net wages	Household cash after the specified deductions.
Domestic receipts	Seller receipts under the model, not domestic value added.
Execution	Outturn relative to the matching-period programme.
AE / FDR	Adult equivalent / false discovery rate; programme units and multiplicity control.
pp / %	Percentage points / percent; not interchangeable.
m / bn	Million / billion; one billion equals 1,000 million.
P01–P02	Prospective research specifications; not estimated.

How to interpret the evidence

Separate source records, published empirical estimates and new conditional calculations.

SOURCE-REPORTED / DATED

Annual and H1 records retain their own status and classification. Preliminary outturns are not final; projections are not observations.

PUBLISHED EMPIRICAL FINDINGS

LEAP methods, t-statistics and FDR q-values are reviewed. Reconstructed intervals are approximate reference displays, not new causal estimates.

EXECUTED ACCOUNTING

Changes, shares, deflator sensitivities, budget execution and crosswalks are recalculated from named source inputs.

CONDITIONAL DEMAND MODELS

Household propensities, sourcing, tax feedback and implementation lags are imposed. First-round receipts are not GDP multipliers.

CASH AND RECOGNITION

A budget, recognised expense, release and bank-settled receipt are different. Aggregate payables are not assigned arbitrarily across spending types.

UNITS AND CONSOLIDATION

Do not add grants and their final uses, or household transfers and subsequent purchases, as separate production effects.

RANGES AND MISSINGNESS

Scenario-box extrema are not confidence intervals. Published-estimate reference intervals are labelled separately; missing outcomes are not filled.

MODELS AND SOURCES

E01–E35 identify methods and source diagnostics; P01–P02 are prospective. Source IDs link to the references and evidence register.

List of figures — 1 of 2

Navigation labels; full captions, units, sources and qualifications accompany each exhibit.

01 Annual primary-spending category changes	25	08 H1 2025 execution by expenditure category	36
02 Primary spending and recognition-line bridge	26	09 H1 total expenditure underrun bridge	37
03 Nominal versus CPI-adjusted category growth	28	10 H1 grant recipients and execution	40
04 Primary-spending composition shares	31	11 H1 capital financing execution	42
05 Capital change by financing source	32	12 Operating-input complementarity	52
06 Spending path by source status	33	13 Conditional domestic-receipts coefficients	55
07 2026 projection composition revision	34	14 Portfolio household versus procurement channel	58

List of figures — 2 of 2

Navigation labels; full captions, units, sources and qualifications accompany each exhibit.

15 Gross versus direct-tax-adjusted portfolio comparison	59	22 H1 other-expenditure offset decomposition	79
16 Finite demand-parameter ranges	61	23 LEAP consumption effects and reference precision	83
17 Conditional demand timing by channel	64	24 LEAP activity incidence and uncertainty	87
18 Effective-capital and commissioning-lag sensitivity	65	25 Regional two-year effects across published samples	89
19 Hypothetical enterprise sales sensitivity	69	26 Equal-net target rectangular parameter ranges	93
20 Enterprise cash under receipt delay	74	27 Order-loss adaptation and financed bridge	96
21 Capital execution within financing categories	78		

List of tables — 1 of 2

Navigation labels; complete definitions and notes accompany each table.

01 Research questions and outcome boundaries	19
02 Spending taxonomy and transfer distinctions	20
03 Transfer category sizes and incidence limits	23
04 Annual spending composition inputs	24
05 Primary-spending measurement sensitivity	27
06 Annual deflator sensitivity	29
07 Real per-capita and precision diagnostics	30
08 Cash basis and source composition boundary	35
09 H1 wages and social-contribution split	38
10 Broad versus narrow capital execution	39
11 Source-period and classification crosswalk	43
12 Published Ghana multiplier evidence	44

13 Empirical and scenario evidence hierarchy	49
14 Four-channel demand assumptions	54
15 Avoiding household and seller double counting	56
16 Equal-gross-cut portfolio definitions	57
17 Direct-tax rescaling arithmetic	60
18 Matched-parameter ranking sensitivity	62
19 Conditional first-round switching thresholds	63
20 Enterprise buyer-mix assumptions	68
21 Private capital-plan funding sensitivity	70
22 Enterprise cash-ledger assumptions	73
23 Enterprise financing scenario outcomes	75

List of tables — 2 of 2

Navigation labels; complete definitions and notes accompany each table.

24 Validation evidence and inference boundaries	76
25 H1 capital subcategory execution	77
26 Grant execution weighting and gross offsets	80
27 Payroll and contribution subcomponent bridge	81
28 LEAP multiplicity and horizon-difference tests	84
29 LEAP panel attrition and distinct denominators	85
30 LEAP receipt status and real-transfer value	86
31 LEAP enterprise-profit and sample boundaries	88
32 Regional sample-count and precision diagnostics	90
33 Equal-net paired portfolio ranking bounds	92
34 Adaptation-aware enterprise funding assumptions	95
35 Financed enterprise cash and terminal reconciliation	97

36 Validation corrections and causal release gates	98
37 Identification and sample-selection safeguards	100
38 Data architecture for future estimation	102
39 Institution-specific business intelligence	104
40 Parliamentary composition checklist	105
41 90-day implementation plan	107
42 Composition and demand monitoring indicators	108
43 Source-access and empirical release limitations	109
44 Reproducibility and evidence map	110
45 Model assumptions and interpretation principles	111
46 Worked source and scenario calculations	131

Model and equation index

Executed definitions, accounting and conditional models are separate from prospective causal research.

E01–E12 FISCAL AND HOUSEHOLDS		E13–E24 DEMAND AND ENTERPRISE		E25–E35 FUNDING AND VALIDATION	
E01 Primary-spending reconciliation	112	E13 Household-transfer channel	118	E25 Display-precision sensitivity	124
E02 Category changes and fiscal shares	112	E14 Domestic procurement channel	118	E26 First-round switching threshold	124
E03 Purchasing-power sensitivity	113	E15 Capital-order channel	119	E27 Private investment financing capacity	125
E04 Real per-capita sensitivity	113	E16 Equal-gross-cut composition	119	E28 Detailed H1 reconciliation	125
E05 Reported and excluded-line sensitivity	114	E17 Direct-tax-adjusted comparison	120	E29 Weighted execution and gross offsets	126
E06 Capital-financing decomposition	114	E18 Parameter and ranking sensitivity	120	E30 Published-effect precision and multiplicity	126
E07 Half-year execution and variance	115	E19 Implementation and timing	121	E31 Eligibility, retention and sample units	127
E08 Broad-capital perimeter bridge	115	E20 Foregone effective capital stock	121	E32 Regional coefficient reference precision	127
E09 Compensation split	116	E21 Enterprise revenue exposure	122	E33 Matched net target and exact box bounds	128
E10 Publication-vintage comparison	116	E22 Dated enterprise cash	122	E34 Adaptation-aware operating cash	128
E11 Published cumulative multiplier	117	E23 Facility need and horizon	123	E35 Recursive bridge and cohort closure	129
E12 Wage-funded consumption channel	117	E24 Operating-input complementarity	123		
PROSPECTIVE ONLY — NOT ESTIMATED		P01 Composition-specific local projections	130	P02 Linked household–enterprise evaluation	130

Fiscal categories and the adjustment target

Definitions of key technical terminology — meaning and report-specific interpretation.

Compensation of employees

The source total includes wages and employer social contributions. It is not household take-home pay, employee headcount or a direct measure of public-service output.

Goods and services

Operating purchases recorded in the fiscal classification. Essential drugs, fuel and maintenance can complement staff and capital; a nominal reduction need not be an efficiency gain.

Household transfer

A payment to a household without a matching sale of output. Scenario cash support is distinct from producer subsidies and intergovernmental grants.

Intergovernmental grant

A transfer within government. Trace the receiving unit's final wages, purchases and capital; do not add the grant and its ultimate expenditure as independent fiscal demand.

Capital expenditure

A budget or statistical investment category whose perimeter must be stated. Net acquisition of nonfinancial assets is not automatically gross fixed capital formation or physical project completion.

Gross versus net adjustment

A gross expenditure reduction can lower tax receipts or generate replacement costs. Equal gross savings are not automatically equal improvements in the fiscal balance.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: These are reading definitions, not current legal or regulatory determinations.

Demand, prices and real resources

Definitions of key technical terminology — meaning and report-specific interpretation.

Marginal propensity to consume

The change in household consumption per additional unit of disposable resources. It differs from an average spending share and is assumed, not estimated, in this report's scenario model.

Domestic seller share

The part of a purchase paid to domestic sellers. It does not measure domestic value added because sellers can resell imports or use imported inputs.

Fiscal multiplier

The causal response of real output to a fiscal shock over a defined horizon, under an identifying design. A first-round receipt coefficient is not a GDP multiplier.

Cumulative multiplier

The cumulative output response divided by the cumulative spending response under the study's normalisation. One- and two-year values answer different questions.

Annual-average inflation

A year-average price comparison suited to annual spending sensitivity. Year-end CPI cannot replace it without changing the question.

Real per-capita spending

Nominal expenditure adjusted by a stated price index and population growth. It is not spending per actual beneficiary or a change in an individual public worker's real wage.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: These are reading definitions, not current legal or regulatory determinations.

Execution, suppliers and capital

Definitions of key technical terminology — meaning and report-specific interpretation.

Budget execution rate

A source outturn divided by the matching period's programme. Underexecution can reflect delay, cancellation or recording differences; it is not an identified causal output loss.

Financing source

Domestic or foreign origin of fiscal funding. It does not determine the origin of suppliers, import content or labour used on the project.

Cash release versus payment

Budget authorisation, Treasury release, payment instruction and supplier bank credit are different stages. A recognised expense may not yet be usable enterprise cash.

First-round domestic receipts

Household-induced domestic purchases plus direct domestic procurement under stated assumptions. The measure excludes feedback rounds and is neither total sales across all supply chains nor GDP.

Effective public capital

An assumed productive asset amount after implementation efficiency and commissioning delay. The model is not a national capital-stock estimate or a monetary measure of social benefits.

Operating complementarity

A service can require staff, materials and usable assets jointly. Protecting wages while removing indispensable operating inputs can reduce service capacity.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: These are reading definitions, not current legal or regulatory determinations.

Identification and interpretation

Definitions of key technical terminology — meaning and report-specific interpretation.

Endogeneity

Spending can respond to expected growth, prices, fiscal stress and project quality. A raw spending–sales association can therefore reflect reverse causation or common shocks.

Selection and survivorship

Executed projects, paid suppliers and surviving firms may differ from cancelled projects, unpaid suppliers and firms that exit. Preserve the eligible starting population.

Anticipation

Households and firms may react to an announced policy before cash spending changes. An empirical design must distinguish announcement, authorisation and actual execution.

Counterfactual

The outcome that would have occurred without the intervention. It cannot be obtained by subtracting two accounting categories or by assuming projection errors are exogenous.

Scenario range

Minimum and maximum outputs across explicitly imposed settings. The range is not a confidence interval or a probability distribution of future outcomes.

Bridge-financing requirement

The largest model cash deficit before an additional facility. It does not establish credit approval, collateral, interest cost or the date of actual business default.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: These are reading definitions, not current legal or regulatory determinations.

Four economic outcomes require more than one spending aggregate

The report’s organising unit is the spending category and its transmission mechanism.

Table 1. Four economic outcomes require more than one spending aggregate

Outcome	Required exposure	Inference boundary
Household consumption	Net wages, cash benefits, receipt timing, prices and household constraints.	Total compensation or a government grant is not a household disposable-income observation.
Enterprise sales	Direct procurement orders plus household purchases by relevant customer groups.	Domestic seller receipts are not domestic value added or a national fiscal multiplier.
Private investment	Sales expectations, financing costs, capacity utilisation and public-infrastructure complements.	A short-run order loss does not determine long-run private capital spending.
Public-service capacity	Usable assets, staffing, materials, maintenance and completed work.	An expenditure category alone cannot measure physical output or value for money.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: No new nationally identified causal coefficient is claimed. Source empirical studies are attributed separately.

Do not compress three distinct transfer channels into one household effect

Source labels remain controlling before household or enterprise incidence is assigned.

Table 2. Do not compress three distinct transfer channels into one household effect

Fiscal category	Likely first recipient	Classification safeguard
Compensation	Employees and social-contribution recipients.	Separate salaries from employer contributions; net household cash needs payroll deductions.
Goods and services	Contractors and suppliers of operating inputs.	Distinguish purchase, delivery, recognition and payment.
Subsidies / transfers	Producers and other source-defined recipients.	The source energy component is a subset, not extra expenditure.
Social benefits	Eligible households or benefit-service providers.	Programme design and targeting matter; do not assume all benefits are unrestricted cash.
Grants to government units	Other public funds or units.	Consolidate and map the final use before assigning wage, transfer or capital demand.
Net nonfinancial assets	Capital suppliers and project implementers.	Land, disposals, work progress and imported equipment differ.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; IMF GFSM 2014 [S06].

Note: The four-channel scenario later uses hypothetical cash wages, procurement, household support and capital—not a relabelling of all source transfers.

A household receipt, a supplier sale and GDP are different quantities

Counting successive cash transactions as independent output creates double counting.

PUBLIC PRODUCTION	SUPPLIER RECEIPTS	TRANSFER USE
Employee compensation can enter the valuation of non-market government services. The household's later purchase is a different transaction; our domestic-receipts measure does not estimate total public plus private output.	A local equipment dealer may import the underlying machine. Local invoicing is therefore insufficient to infer domestic production; value-added and import-content data are needed.	A cash benefit changes disposable resources before it changes consumption. Saving, debt repayment, imports and household purchases must be separated.

Sources: IMF GFSM 2014 [S06]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: The report never adds GDP, turnover and household transfer values into one supposed economic impact.

Announced restraint, lower recognition and lower cash delivery need separate records

A commitment-basis change does not directly establish the cash shock used in a demand model.

AUTHORISED BUDGET	EXECUTION AND CASH	CREDIBLE ADJUSTMENT
Compare the approved annual amount and the within-year programme. An announcement can affect expectations before the spending change appears in the accounts.	Delivery, certification, payment instruction and supplier credit occur at different dates. Underexecution is not automatically cancellation; cash release is not automatically production.	Assess arrears, contingent obligations and postponed maintenance. A lower cash payment can defer a claim rather than reduce the cost of government activity.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; IMF GFSM 2014 [S06].

Note: The report does not identify unobserved cash execution by assigning the source net-payables adjustment proportionally across categories.

The source transfer mix is dominated by channels other than household cash support

2025 preliminary source amounts, GHS billion.

Table 3. The source transfer mix is dominated by channels other than household cash support

Record	Amount	What can be concluded
Subsidies and transfers	17.841	Broad source category; not all household cash.
Energy subset	17.750	99.49% of the subsidies/transfers total; do not add it twice.
Social benefits	2.908	The source separately identifies benefit expenditure. Programme receipt data are not supplied.
Grants to other government units	63.284	Final use includes public activities; it cannot be assigned a household MPC wholesale.

Sources: IMF CR 26/212 [S01]; IMF GFSM 2014 [S06].

Note: Subsidy incidence can pass through prices, supplier balances or losses; the table does not identify those behavioural responses.

The annual adjustment has a pronounced composition—not a uniform contraction

IMF July 2026 vintage; 2024 actual versus 2025 preliminary; GHS billion.

Table 4. The annual adjustment has a pronounced composition—not a uniform contraction

Category	2024	2025	Nominal change
Compensation	67.189	78.970	11.781
Goods and services	11.509	6.090	−5.419
Subsidies / transfers	17.568	17.841	0.273
Social benefits	0.737	2.908	2.171
Grants to other government units	49.842	63.284	13.442
Net nonfinancial assets	29.389	20.235	−9.154
Other / discrepancy	34.641	4.961	−29.680

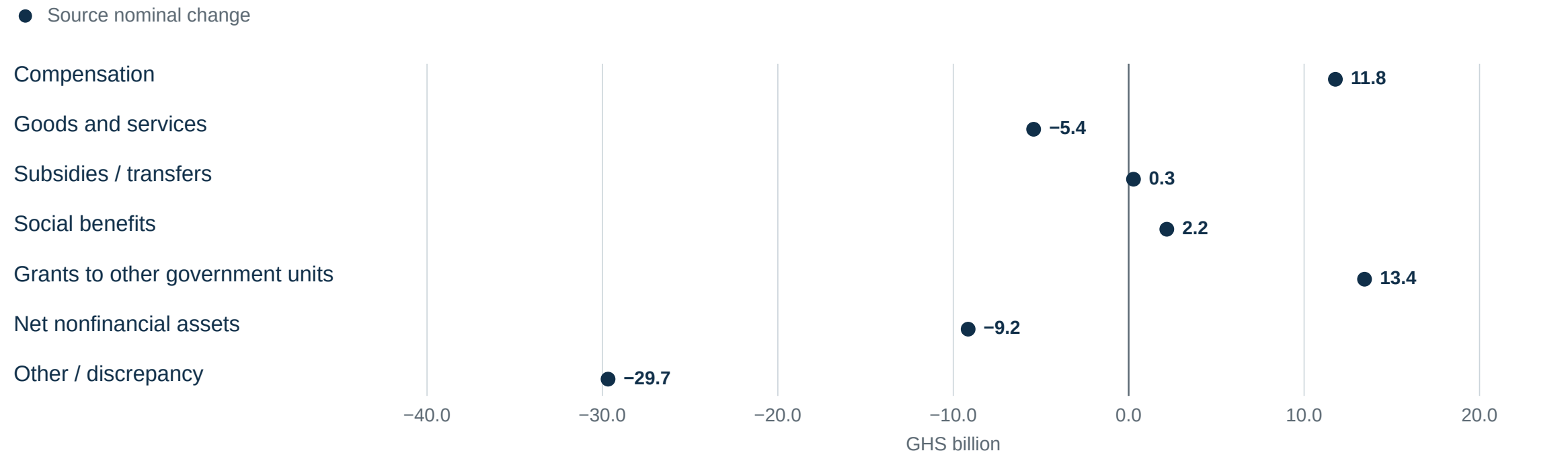
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: Parent categories only. Source primary expenditure is separately retained; small component-rounding residuals are not eliminated.

Compensation and government grants rose while operating purchases and capital fell

Change in the seven primary-spending categories, 2024–2025.

Figure 1. Compensation and government grants rose while operating purchases and capital fell



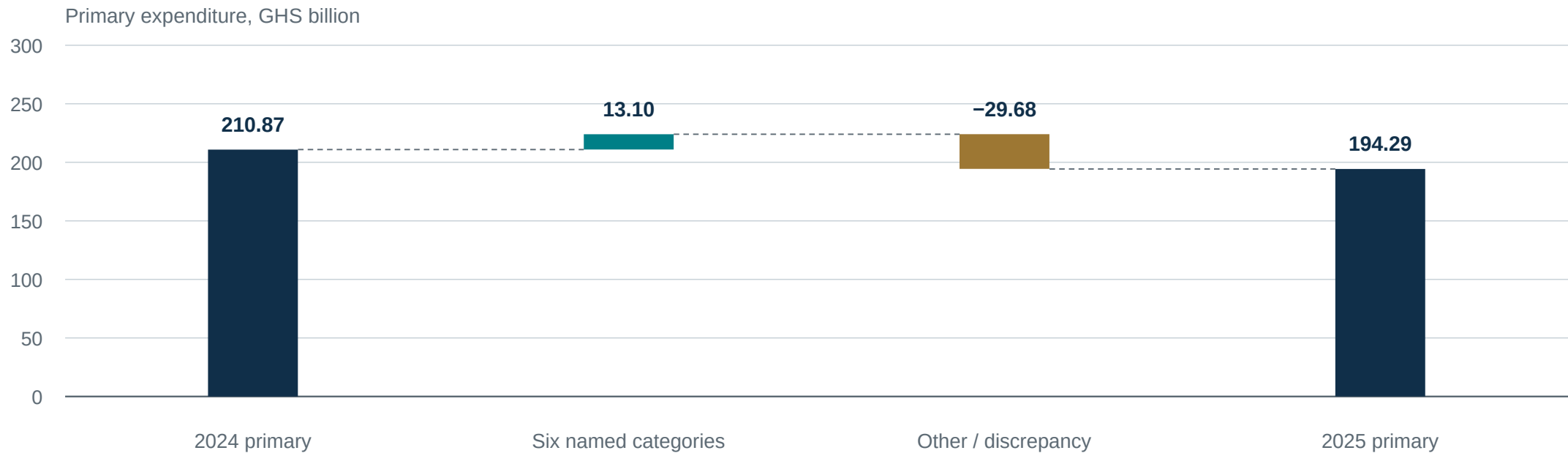
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: Changes are recognised source amounts, not causal demand effects or a verified category-level cash-payment bridge.

The other/discrepancy line materially changes the primary-spending story

GHS billion; decompose the reported change rather than silently deleting a source entry.

Figure 2. The other/discrepancy line materially changes the primary-spending story



Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: The named-category component includes retained source precision. This is a measurement sensitivity, not a corrected discretionary fiscal-stance estimate.

Excluding one recognition line reverses the direction of the spending change

Same source and dates; the alternative is shown alongside—not in place of—the official record.

Table 5. Excluding one recognition line reverses the direction of the spending change

Measure	2024 GHS bn	2025 GHS bn	Change GHS bn
Reported primary expenditure	210.874	194.289	−16.585
Excluding other/discrepancy line	176.233	189.328	13.095
Other/discrepancy only	34.641	4.961	−29.680

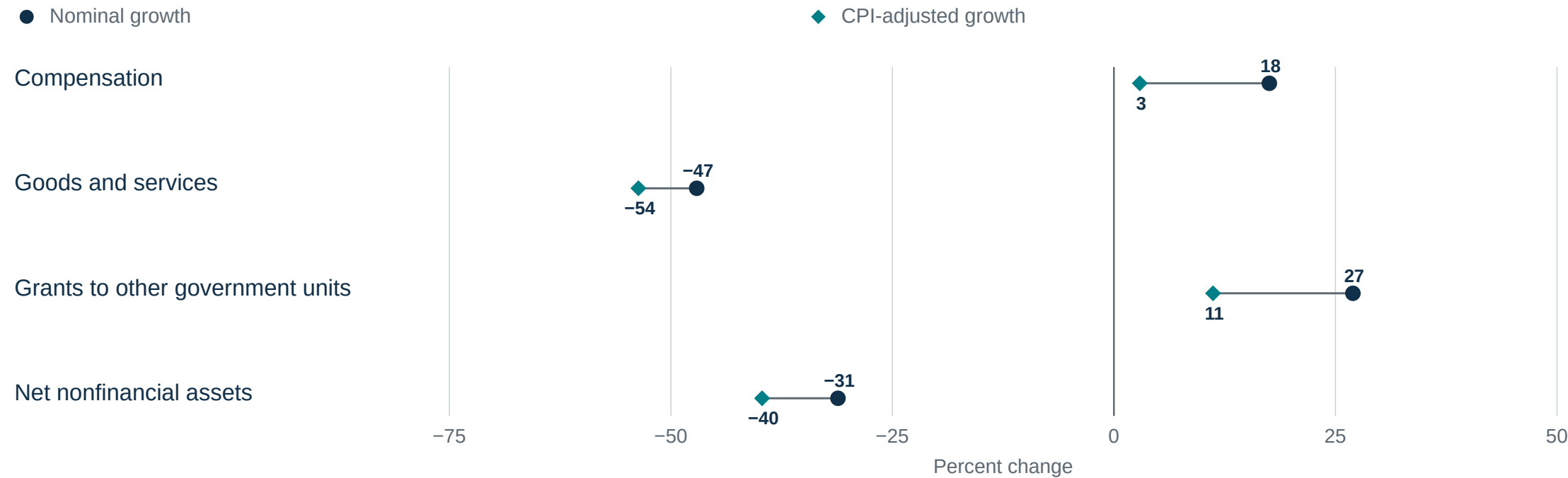
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: The increase in the excluded-line comparison does not prove an expansionary causal stance; transfers and recognition still have heterogeneous incidence.

Nominal compensation growth is much smaller after the price adjustment

2024–2025 growth; annual-average CPI of 14.2% is used as a common sensitivity deflator.

Figure 3. Nominal compensation growth is much smaller after the price adjustment



Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: The small-base social-benefit change is retained in the source table, not this scale comparison. CPI adjustment is not a procurement-quantity measure.

Use annual-average prices, and keep the output-price sensitivity separate

2025 over 2024; all entries are growth rates in percent.

Table 6. Use annual-average prices, and keep the output-price sensitivity separate

Category	Nominal	CPI adjusted	GDP-deflator adjusted
Compensation	17.53	2.92	2.74
Goods and services	-47.08	-53.66	-53.75
Net nonfinancial assets	-31.15	-39.71	-39.81

Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: CPI 14.2%; GDP deflator 14.4%. Neither identifies category-specific input prices; end-year CPI of 5.4% is not used to deflate annual flows.

Real compensation per resident grew much less than the nominal aggregate

Annual-average CPI and source population growth of 1.8%; percent change.

Table 7. Real compensation per resident grew much less than the nominal aggregate

Category	Central real per capita	Display-rounding lower	Display-rounding upper
Compensation	1.100	1.005	1.195
Goods and services	−54.484	−54.532	−54.436
Net nonfinancial assets	−40.775	−40.833	−40.718

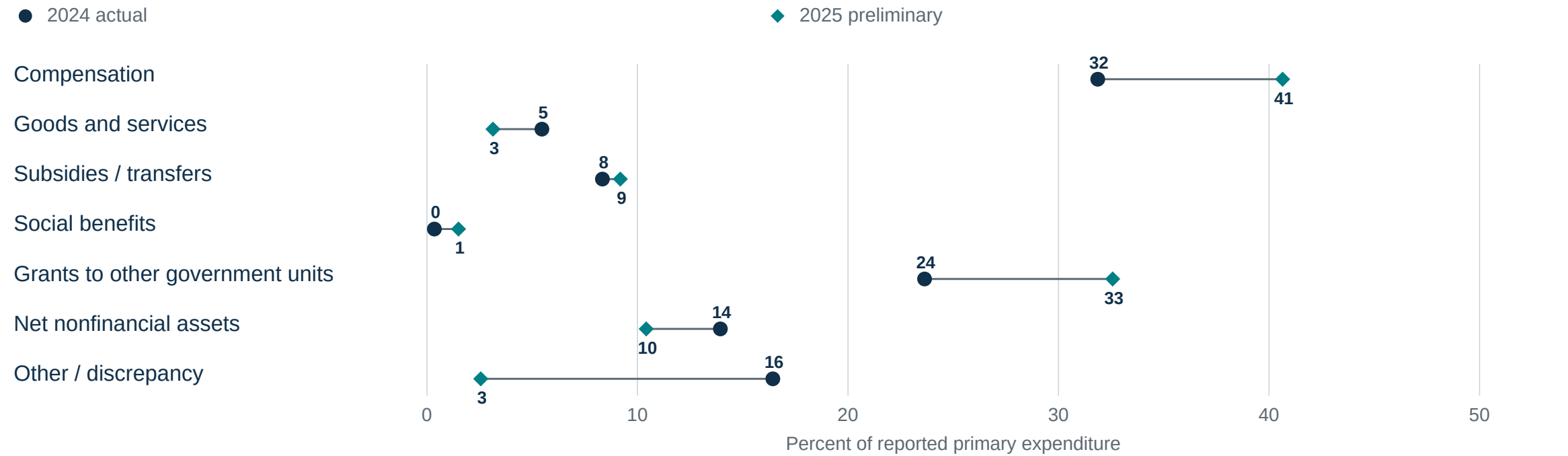
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: Population is not the number of public employees or benefit recipients. The envelope reflects rounding only—not confidence, source error or beneficiary incidence.

The shares of compensation and grants increased in the primary budget

Source amount divided by same-year primary expenditure; includes the other/discrepancy line in the denominator.

Figure 4. The shares of compensation and grants increased in the primary budget



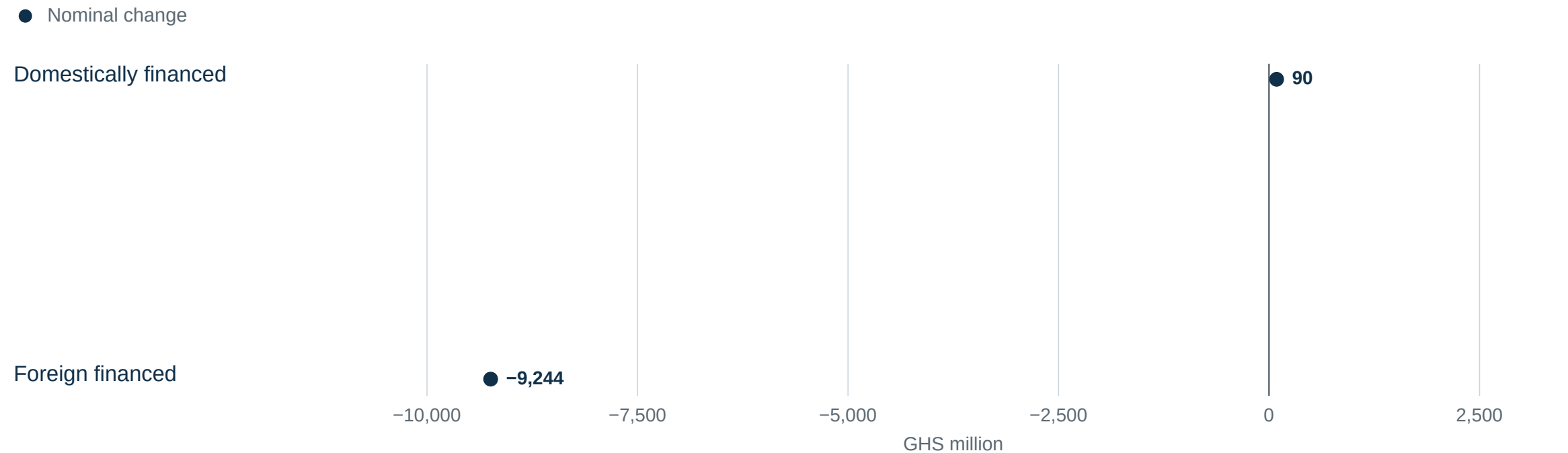
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: A rising share can reflect a shrinking denominator as well as a higher numerator. Shares are not economic-impact weights.

The foreign-financed component accounts for more than the net capital decline

2024–2025 source net acquisition of nonfinancial assets; financing origin is not domestic content.

Figure 5. The foreign-financed component accounts for more than the net capital decline



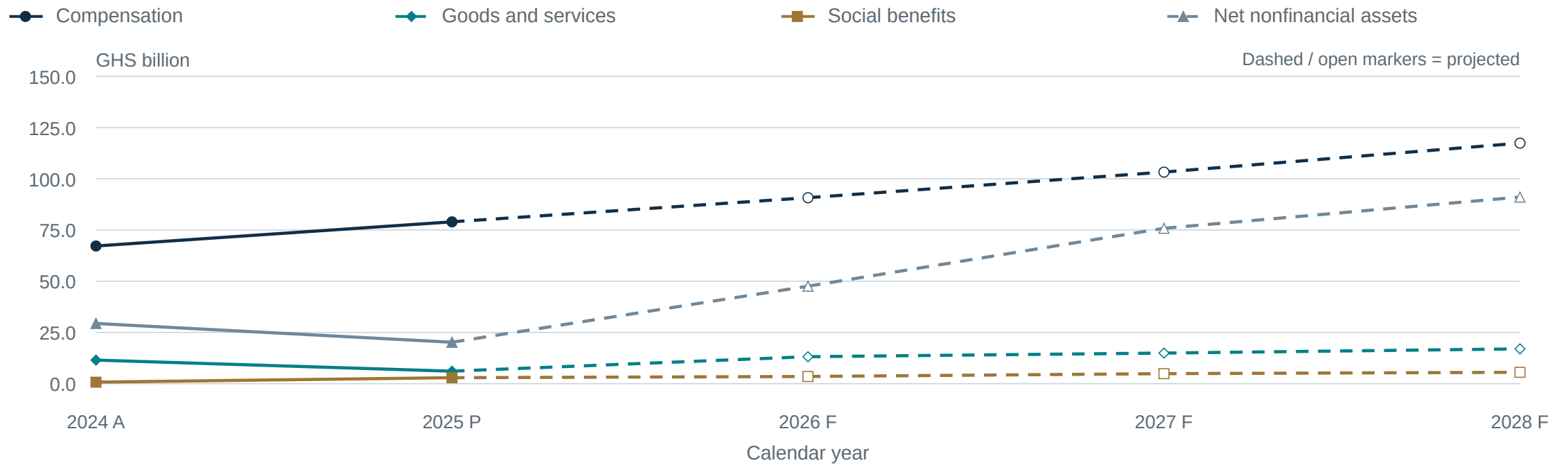
Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: Domestic-financed spending rose GHS 90 m while foreign-financed spending fell GHS 9,244 m; total fell GHS 9,154 m.

The forward composition is a projection—not additional observed responses

Each series uses the current IMF vintage; 2024 actual, 2025 preliminary, 2026–2028 projected.

Figure 6. The forward composition is a projection—not additional observed responses



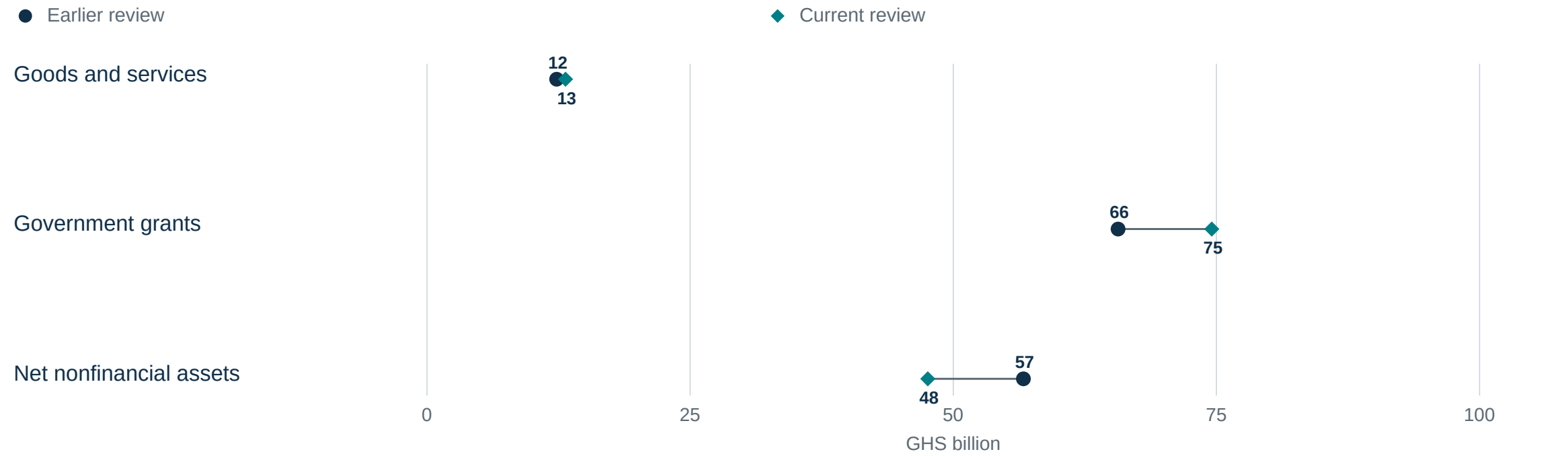
Sources: IMF CR 26/212 [S01].

Note: Read the 2026–2028 segment as source projections. It is not fitted by IDER and is not used as observations in a causal regression.

The 2026 grant and capital projections change while the headline target is retained

Earlier fifth-review projection versus current July 2026 projection; GHS billion.

Figure 7. The 2026 grant and capital projections change while the headline target is retained



Sources: IMF CR 26/212 [S01]; IDER calculations [S10].

Note: The source links higher grants partly to government costs of the domestic gold-purchase programme, with lower capital execution offsetting; revisions are not a treatment experiment.

Fiscal categories cannot be converted to demand shocks without payment information

Matched source primary balance, GHS billion.

Table 8. Fiscal categories cannot be converted to demand shocks without payment information

Year / status	Commitment balance	Net-payables change	Cash balance
2024 / Actual	-24.281	15.522	-8.759
2025 / Preliminary	30.595	-23.653	6.941
2026 / Projection	23.938	-29.827	-5.889

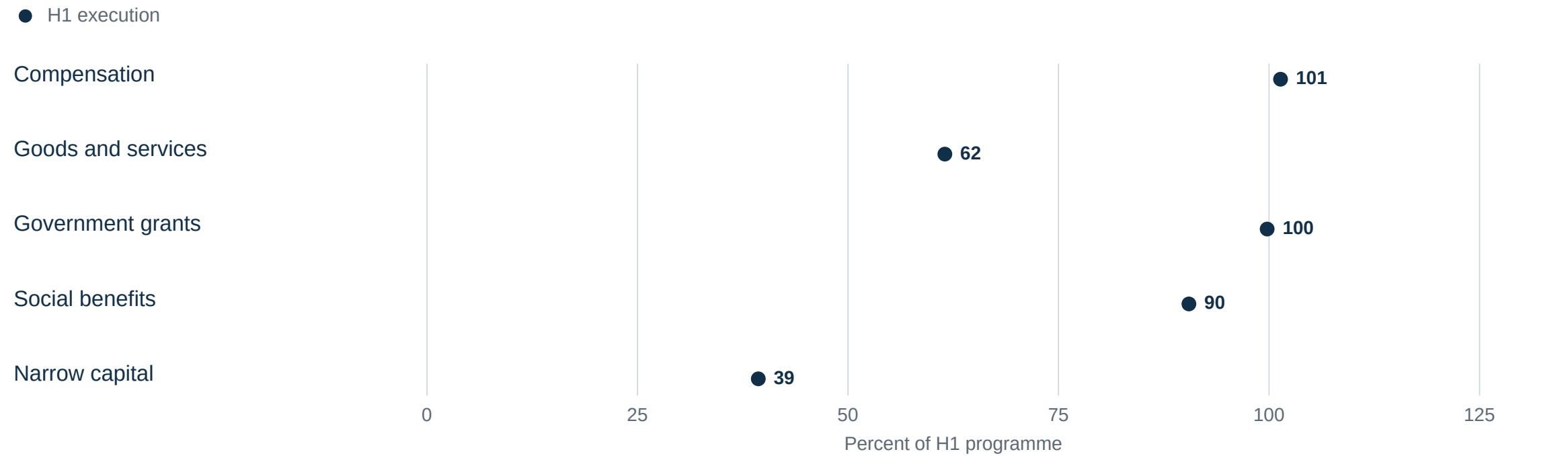
Sources: IMF CR 26/212 [S01].

Note: 2025 has a –GHS 1 m primary cash-bridge residual. The net-payables adjustment is not allocated across wages, procurement, transfers or capital without evidence.

First-half capital execution lagged well behind compensation and grants

H1 2025 provisional outturn divided by the corresponding H1 programme.

Figure 8. First-half capital execution lagged well behind compensation and grants



Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: A programme underrun is not a causal estimate of output lost. The annual budget is not the denominator of this comparison.

Capital accounts for 59.37% of the H1 total expenditure underrun

Programme to provisional outturn, GHS billion; all component changes are accounting contributions.

Figure 9. Capital accounts for 59.37% of the H1 total expenditure underrun



Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: A later catch-up, cancellation, certification delay or reclassification can produce different real consequences; the source does not identify their shares.

The wage overshoot was partly offset by lower social contributions

H1 programme versus provisional outturn, GHS billion.

Table 9. The wage overshoot was partly offset by lower social contributions

Component	H1 programme	H1 outturn	Variance
Wages Salaries	34.099	35.433	1.334
Social Contributions	4.221	3.410	-0.812

Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: Net compensation variance is +GHS 0.522 bn. The table cannot distinguish salary rates, headcount, payroll corrections or employee purchasing power.

The broader capital measure is more than twice the narrow outturn

MoF H1 2025 capital memorandum measure versus the main capital line.

Table 10. The broader capital measure is more than twice the narrow outturn

Scope	H1 programme GHS bn	H1 outturn GHS bn	Execution
Narrow capital line	18.059	7.105	39.34%
Broad capital including grant content	26.232	15.314	58.38%
Implied capital embedded in grants	8.174	8.209	Derived difference

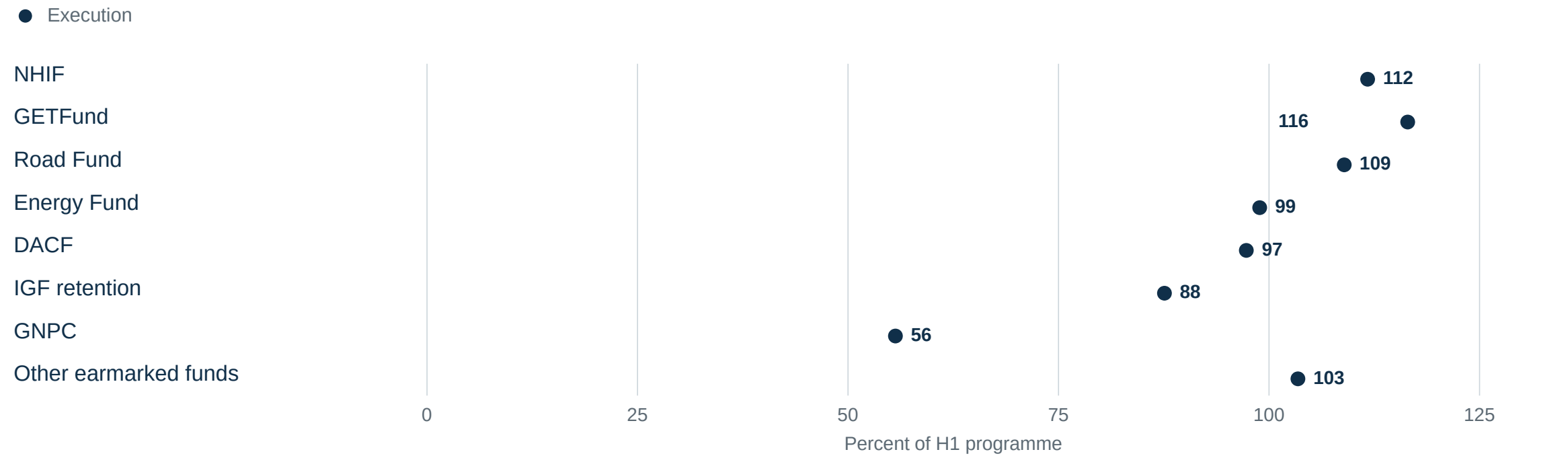
Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: The GHS 8.209 bn embedded amount is not additional spending to add again to grants and capital. Final recipient-use records are required.

A near-target grant aggregate conceals different recipient-unit execution

Selected H1 grant subcategories: provisional amount relative to its own programme.

Figure 10. A near-target grant aggregate conceals different recipient-unit execution



Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: These are monetary flows to named funds or units, not household consumption effects. Different dates and final uses preclude a common MPC.

Protecting a transfer line does not guarantee protection of the ultimate service

Trace the recipient’s spending before assigning consumption, investment or distributional effects.

HEALTH AND EDUCATION	RETAINED REVENUE	CAPITAL EMBEDDED IN GRANTS
A grant to a health or education fund may finance drugs, claims, staff, buildings or arrears. Each use has a different supplier and household transmission channel.	Retention by an institution is a financing and accounting arrangement, not a household grant. Final procurement and capital execution must be mapped to avoid double counting.	A cut outside the main capital line can still reduce investment. The broad capital memorandum is therefore needed alongside the economic-classification table.

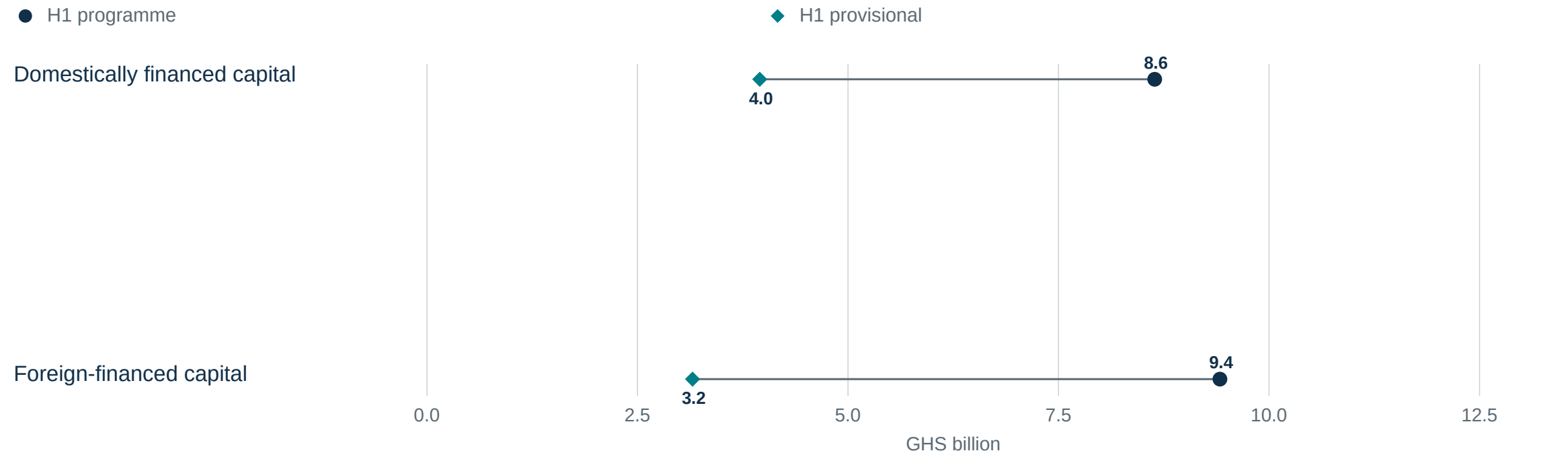
Sources: MoF Mid-Year 2025 [S02]; IMF GFSM 2014 [S06].

Note: The report does not assume that an earmarked allocation was bank-settled or used exactly as planned.

Both domestic and foreign capital financing undershot the H1 programme

First-half 2025 outturn versus programme; source financing labels.

Figure 11. Both domestic and foreign capital financing undershot the H1 programme



Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: The later annual IMF comparison has a different vintage and classification. Do not subtract H1 source values from it to invent a matched H2 outturn.

The H1 and annual sources must not be silently spliced

Both are useful, but their periods, status and economic classifications differ.

Table 11. The H1 and annual sources must not be silently spliced

Comparison	What differs	Permitted use
MoF H1 programme versus H1 provisional	Matching half-year; within one table.	Execution and composition diagnostics.
IMF 2024 actual versus 2025 preliminary	Matching annual source vintage; some source corrections.	Annual recognised spending and purchasing-power sensitivity.
MoF subsidies / other versus IMF subsidies/transfers	Energy and other allocations use different source groupings.	Preserve labels; no direct category growth without a crosswalk.
Narrow capital versus broad memorandum capital	Capital embedded in grants expands the perimeter.	Show both scopes without summing them.
Recognised amount versus supplier bank credit	Timing and payment-stage evidence differ.	Do not reconstruct category-level cash shocks by assumption.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; IMF GFSM 2014 [S06].

Note: No H1 amount is doubled into a year estimate, and no budget variance is called a causal fiscal surprise.

The Ghana study reports different consumption and investment responses

Published 2026 abstract; quarterly sample 2006 Q1–2025 Q4; not re-estimated by IDER.

Table 12. The Ghana study reports different consumption and investment responses

Spending variable	Horizon	Published cumulative multiplier	Inference available
Government consumption	One year	0.89	Point value; source interval not obtained.
Government consumption	Two years	0.84	Point value; source interval not obtained.
Domestically financed investment	One year	0.73	Source describes the estimate as not significant.
Domestically financed investment	Two years	1.79	Source describes medium-term significance.
Total government investment	Both reported horizons	No point value transcribed	Abstract reports no statistically significant effect; not zero.

Sources: Luciani & Asamoah (2026) [S03].

Note: The full paper, identification details and covariance were not obtained. Consumption does not isolate wages from purchases; domestic financing does not establish domestic sourcing.

Do not turn a published multiplier into four unsupported category coefficients

The study informs the research question but does not calibrate the report’s wage, transfer and procurement scenarios.

ESTIMAND	IDENTIFICATION ACCESS	USE IN THIS REPORT
Government consumption and investment are aggregate categories. The reported cumulative GDP response is not household MPC, supplier-sales elasticity or spending per beneficiary.	An abstract cannot establish the full identification strategy, anticipation treatment or robustness. The report attributes the estimates and does not manufacture confidence intervals.	The evidence motivates separate short- and medium-term channels. Our conditional domestic-receipts coefficients remain explicit assumptions rather than relabelled study results.

Sources: Luciani & Asamoah (2026) [S03]; Batini et al. (2014) [S07].

Note: Statistical non-significance is not proof of a zero investment effect. The two-year estimate is not an optimal policy weight.

SSA narrative evidence cautions against ignoring consolidation design

IMF Working Paper 26/12 studies 14 countries and policy actions over 1990–2024.

NARRATIVE SHOCK	REPORTED RESPONSE	TRANSFERABILITY
The authors identify consolidation actions using their stated motivations rather than assuming every fiscal change is exogenous. They estimate dynamic responses with local projections.	The paper reports that a consolidation of 1% of GDP is associated with an output contraction of about 0.54% after two years under its identifying approach. Spending-based adjustment is more contractionary than tax-based adjustment in the study.	Country, cycle, financing and policy mix matter. A regional aggregate estimate is not a wage, procurement, household-benefit or capital coefficient for Ghana.

Sources: IMF WP 26/12 [S04].

Note: This is attributed source evidence; neither the narrative panel nor its regression is re-estimated here.

Targeted household support has consumption evidence—but not a universal transfer multiplier

The overview is cross-checked against the full seven-year evaluation, including methods and inference.

ELIGIBLE POPULATION	SOURCE RESULT	BOUNDARY
LEAP 1000 followed households with eligible pregnant women or young children near the programme selection threshold. The comparison is not all Ghanaian households or all public transfers.	The overview reports higher monthly per-adult-equivalent total consumption: GHS 20.70 after two years and GHS 26.51 at the later seven-year follow-up, expressed in 2022 prices.	Programme receipt includes cash and linked health-insurance access. A level effect is not a marginal spending propensity, a GDP multiplier or the return to every additional budget cedi.

Sources: UNICEF LEAP overview (2024) [S05]; LEAP seven-year evaluation (2024) [S11].

Note: The unit is monthly GHS per adult equivalent in constant Greater Accra August 2022 prices. Full-study precision is reviewed in the validation chapter.

Capital quality and timely payment condition the spending response

The project amount and the cash received by the supplier are necessary but insufficient outcome measures.

INVESTMENT EFFICIENCY	PAYMENT TIMING	COMPLEMENTARITY
Public capital can support productive capacity when selection, delivery and maintenance work. The IMF efficiency framework does not justify assigning a cross-country efficiency estimate to a Ghanaian project.	The Quickpay evidence concerns faster payment to US contractors and employment spillovers. It motivates measuring payment dates, but does not supply a Ghana employment coefficient.	A completed asset may require staffing and recurring inputs. Protecting capital while eliminating essential operations—or protecting staff without materials—can reduce delivered services.

Sources: IMF public investment (2015) [S08]; Barrot & Nanda (2020) [S09]; IDER calculations [S10].
Note: The report makes no project-return estimate or aggregate jobs claim from an expenditure total.

Different numerical objects must remain separate in decision use

The unit, identification and uncertainty differ.

Table 13. Different numerical objects must remain separate in decision use

Object	What is numerical here	What it cannot establish
Observed fiscal/execution comparison	Recomputed source changes, shares and period-specific execution.	A causal consumption, sales or investment effect.
Published empirical effect	Attributed Ghana multiplier and programme findings; regional narrative result.	A newly fitted IDER estimate or transferable universal coefficient.
Conditional first-round model	Explicit wage, transfer and domestic-purchase parameters.	GDP multiplier, general-equilibrium response or forecast probability.
Prospective causal design	Outcome, shock, sampling and inference requirements.	A completed experiment or identified original Ghana estimate.

Sources: Luciani & Asamoah (2026) [S03]; IMF WP 26/12 [S04]; UNICEF LEAP overview (2024) [S05]; IDER calculations [S10].

Note: Accounting precision and a larger scenario grid do not strengthen causal identification by themselves.

The wage channel operates through net resources and public-service production

The scenario isolates household spending without claiming to measure all consequences of payroll adjustment.

NET HOUSEHOLD CASH	CONSUMPTION AND SAVING	SERVICE AND LABOUR EFFECTS
A gross payroll change can affect employee take-home pay, withholding taxes and contributions differently. The model uses a declared 80% net-cash fraction, not a Ghana payroll estimate.	An assumed consumption propensity maps net income into purchases. Debt repayment, saving and imported goods absorb the remainder; they are not treated as domestic sales.	Staffing, skills, absenteeism and wage retention affect public output. Cutting wasteful payroll and cutting frontline capacity are not economically interchangeable.

Sources: IMF CR 26/212 [S01]; IMF GFSM 2014 [S06]; IDER calculations [S10].

Note: Public-worker headcount, disposable wages and service-production elasticities were not observed in the source fiscal table.

Targeting changes who bears the adjustment, not just the aggregate amount

Cash support to constrained households is a separate channel from subsidies and grants to public funds.

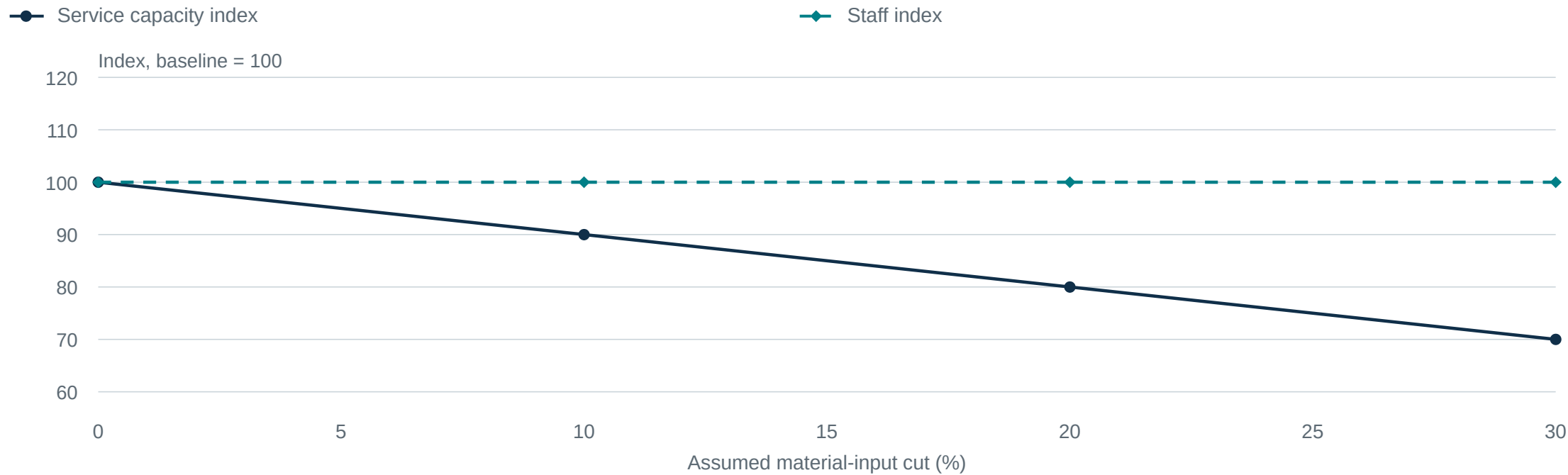
CONSUMPTION BUFFER	PROTECTION AND INCIDENCE	FISCAL CLASSIFICATION
A household facing unmet essentials may spend a high fraction of a transfer. The scenario uses 0.90, with alternatives; this is not fitted from Ghana’s aggregate benefit line.	Recipient eligibility, household size, real benefit erosion and payment regularity determine exposure. Equal nominal reductions can have unequal welfare effects even with similar seller receipts.	The LEAP evidence cannot be applied to all intergovernmental grants, energy-sector support or pension costs. Programme-level cash and recipient records are required.

Sources: UNICEF LEAP overview (2024) [S05]; IMF GFSM 2014 [S06]; IDER calculations [S10].
Note: No welfare ranking or aggregate poverty impact is inferred from the illustrative domestic-demand coefficient.

Protecting staff while cutting indispensable inputs can reduce service capacity

Hypothetical fixed-proportions production: staff index stays at 100; materials are binding.

Figure 12. Protecting staff while cutting indispensable inputs can reduce service capacity



Sources: IMF public investment (2015) [S08]; IDER calculations [S10].

Note: A fixed-proportions example is not an estimated Ghana production function. The effect of removable waste would differ.

Capital spending has an order-book channel and a later capacity channel

A lower current capital payment cannot be interpreted using only an immediate consumption multiplier.

TODAY’S ORDERS	LATER CAPACITY	PRIVATE INVESTMENT
Construction labour, local materials and equipment suppliers receive expenditure at different stages. Imported equipment can limit domestic first-round receipts without eliminating future productivity benefits.	Commissioning delays, project quality, operating budgets and maintenance determine when assets provide services. A near-complete high-value project differs from a poorly selected new project.	Reliable infrastructure can complement private capital, while financing pressure can crowd it out. Neither response is identified by this report’s aggregate fiscal amounts.

Sources: Luciani & Asamoah (2026) [S03]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: The capital-stock illustration below measures conditional effective-asset units, not Ghana GDP, project returns or private investment caused.

The first-round calculation declares every behavioural parameter

One unit of gross paid expenditure is removed in each channel; central inputs are assumptions.

Table 14. The first-round calculation declares every behavioural parameter

Channel	Assumed household / sourcing parameters	First-round domestic receipts per GHS
Gross cash wages	Net household fraction $0.80 \times \text{MPC } 0.65 \times \text{domestic seller share } 0.75$.	0.390
Goods and services	Direct domestic seller share 0.65.	0.650
Cash household support	MPC $0.90 \times \text{domestic seller share } 0.85$.	0.765
Capital purchases	Direct domestic seller share 0.55; capacity is a separate model.	0.550

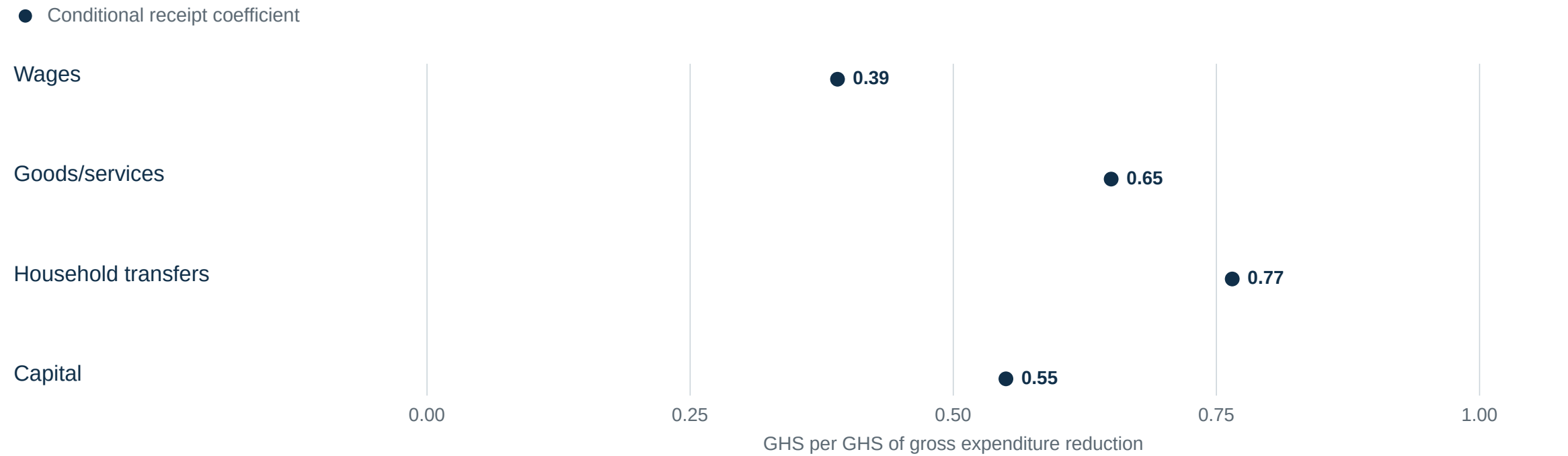
Sources: IDER calculations [S10].

Note: All coefficients are conditional. They are neither estimated Ghana fiscal multipliers nor shares of domestic value added.

The first-round seller-receipt effect differs across the four channels

GHS of domestic seller receipts lost per GHS 1 reduction in the defined paid expenditure.

Figure 13. The first-round seller-receipt effect differs across the four channels



Sources: IDER calculations [S10].

Note: The relative values reflect the stated parameters. The chart omits public-service output, feedback rounds, exchange rates, interest rates and future capital benefits.

Consumption, imports and domestic receipts must not be added twice

Central conditional model per GHS 1 gross channel reduction.

Table 15. Consumption, imports and domestic receipts must not be added twice

Channel	Household consumption lost	Domestic seller receipts lost	Excluded from this measure
Gross cash wage	0.520	0.390	0.200 direct withholding; household saving and imported purchases; public output.
Cash household support	0.900	0.765	Saving, debt repayment, imported purchases and non-cash programme effects.
Government operating purchase	Not a household transfer	0.650	Imported purchase and later supplier income/spending rounds.
Government capital purchase	Not a household transfer	0.550	Imported equipment and later productive-capacity effects.

Sources: IDER calculations [S10].

Note: Consumption lost and domestic receipts lost overlap. They are different breakdowns of the same scenario—not additive GDP losses.

Four portfolios each remove GHS 1 billion of gross cash expenditure

Budget reductions below are hypothetical allocations, not recommended cuts or estimated government plans.

Table 16. Four portfolios each remove GHS 1 billion of gross cash expenditure

Portfolio	Wages	Goods/services	Household transfers	Capital
Wage-heavy	70%	10%	10%	10%
Procurement/capital-heavy	10%	40%	0%	50%
Balanced	25%	25%	25%	25%
Household-transfer-heavy	10%	10%	70%	10%

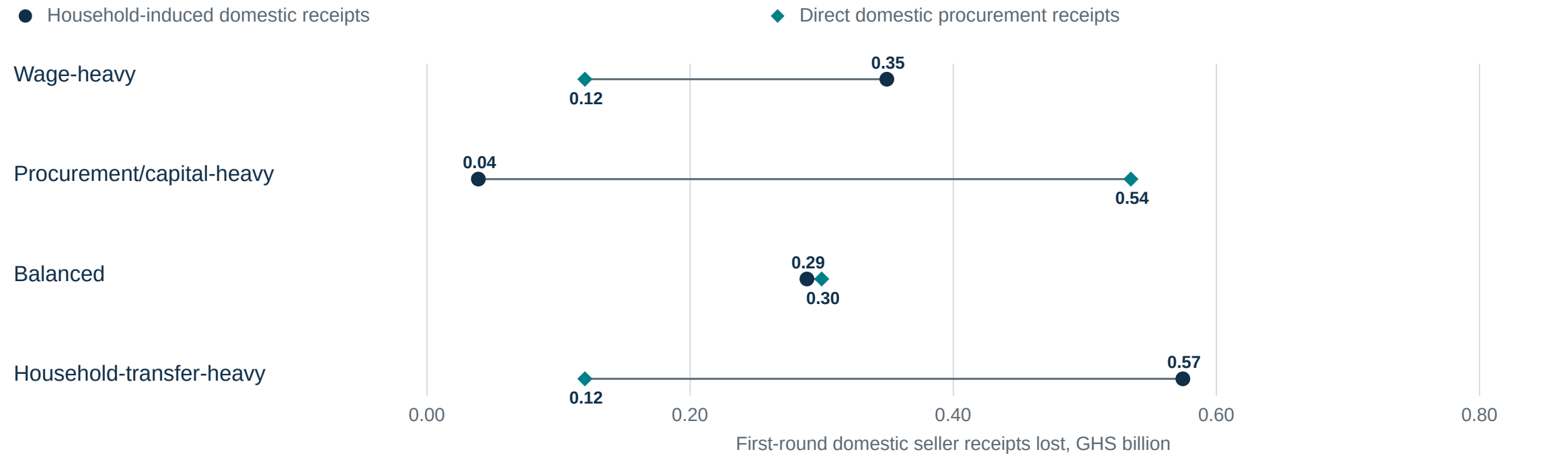
Sources: IDER calculations [S10].

Note: Cash household support is a defined scenario category. Do not substitute the whole source grants or subsidies line. Legal and service constraints are not optimised.

Equal gross savings yield different household and procurement exposure

Central scenario losses, GHS billion, from the same GHS 1 bn gross expenditure reduction.

Figure 14. Equal gross savings yield different household and procurement exposure



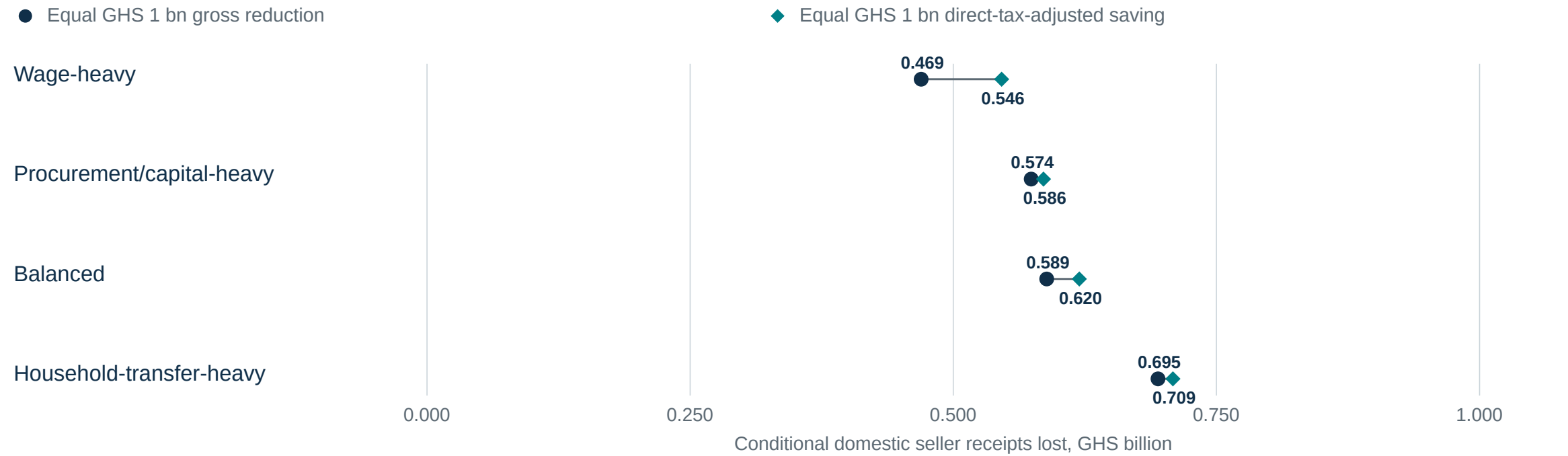
Sources: IDER calculations [S10].

Note: The two plotted components sum to the total per portfolio. No feedback multiplier is applied and no portfolio is labelled welfare-optimal.

The fiscal denominator changes the comparison even before wider feedback

Domestic receipts lost, GHS billion: same gross cut versus same direct-wage-tax-adjusted saving.

Figure 15. The fiscal denominator changes the comparison even before wider feedback



Sources: IDER calculations [S10].

Note: Only assumed 20% wage withholding feedback is included. VAT, profits, prices, employment and all other tax changes remain outside the rescaling.

A wage-heavy gross cut requires a larger rescaling to reach the same net target

GHS billion; assumed direct wage withholding of 20%, with other fiscal feedback excluded.

Table 17. A wage-heavy gross cut requires a larger rescaling to reach the same net target

Portfolio	Gross reduction required	Direct tax revenue lost	Net direct saving
Wage-heavy	1.163	0.163	1.000
Procurement/capital-heavy	1.020	0.020	1.000
Balanced	1.053	0.053	1.000
Household-transfer-heavy	1.020	0.020	1.000

Sources: IDER calculations [S10].

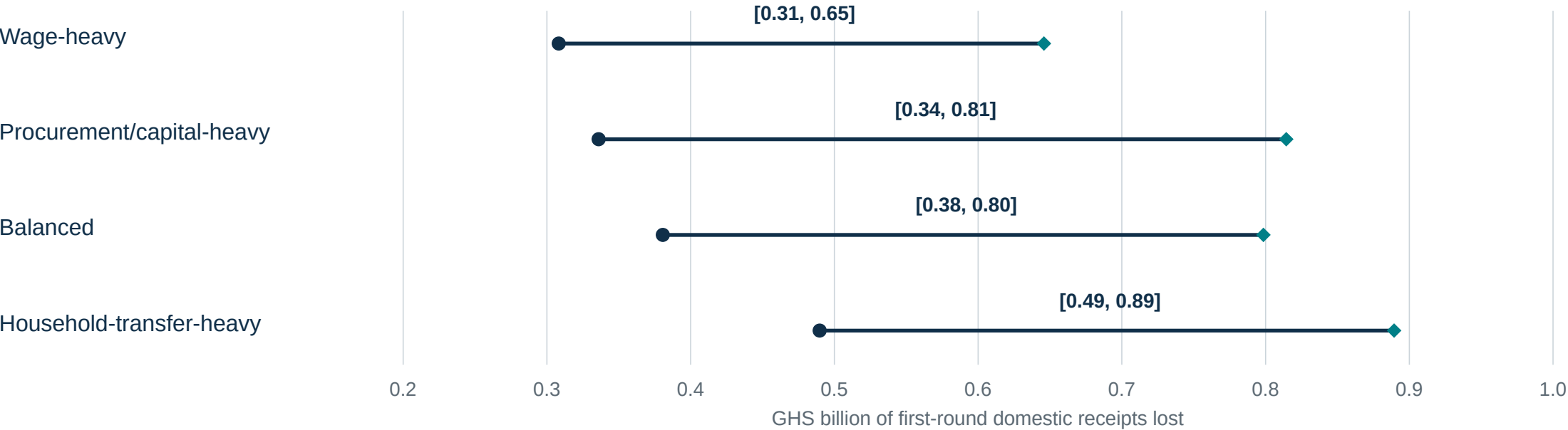
Note: This is a partial fiscal-accounting comparison, not a complete net-deficit adjustment. The report does not estimate tax incidence from total compensation.

Assumed propensities and sourcing create broad conditional ranges

729 common settings per portfolio; 2,916 outputs across the four equal-gross portfolios.

Figure 16. Assumed propensities and sourcing create broad conditional ranges

CONDITIONAL RANGES — NOT CONFIDENCE INTERVALS



Sources: IDER calculations [S10].

Note: The grid varies six parameters. It is not a sampled distribution; no percentile, probability of a ranking or confidence level is asserted.

Most portfolio rankings reverse somewhere within the tested settings

Each difference uses identical parameters for the two compared portfolios.

Table 18. Most portfolio rankings reverse somewhere within the tested settings

Left minus right portfolio	Minimum difference	Maximum difference	Same sign throughout?
Wage-heavy – Procurement/capital-heavy	−0.378	0.181	No
Wage-heavy – Balanced	−0.281	0.055	No
Wage-heavy – Household-transfer-heavy	−0.414	−0.011	Yes, within this grid
Procurement/capital-heavy – Balanced	−0.184	0.155	No
Procurement/capital-heavy – Household-transfer-heavy	−0.425	0.196	No
Balanced – Household-transfer-heavy	−0.283	0.083	No

Sources: IDER calculations [S10].

Note: Units are GHS billion. Stable sign within a declared grid is not proof of a universal policy ranking or welfare superiority.

Domestic sourcing can overturn a simple wages-versus-capital ranking

Conditional equalities under the central wage parameters.

Table 19. Domestic sourcing can overturn a simple wages-versus-capital ranking

Equality being tested	Threshold	Interpretation
Capital domestic seller share equals wage receipt coefficient	39.0%	Above this share, one gross capital cedi has a larger first-round receipt effect in this model.
Operating procurement domestic share equals wage coefficient	39.0%	Domestic-content evidence matters more than a generic current-spending label.
Transfer MPC at 85% domestic share equals wage coefficient	45.88%	Targeting and household constraints can change the relative demand effect.

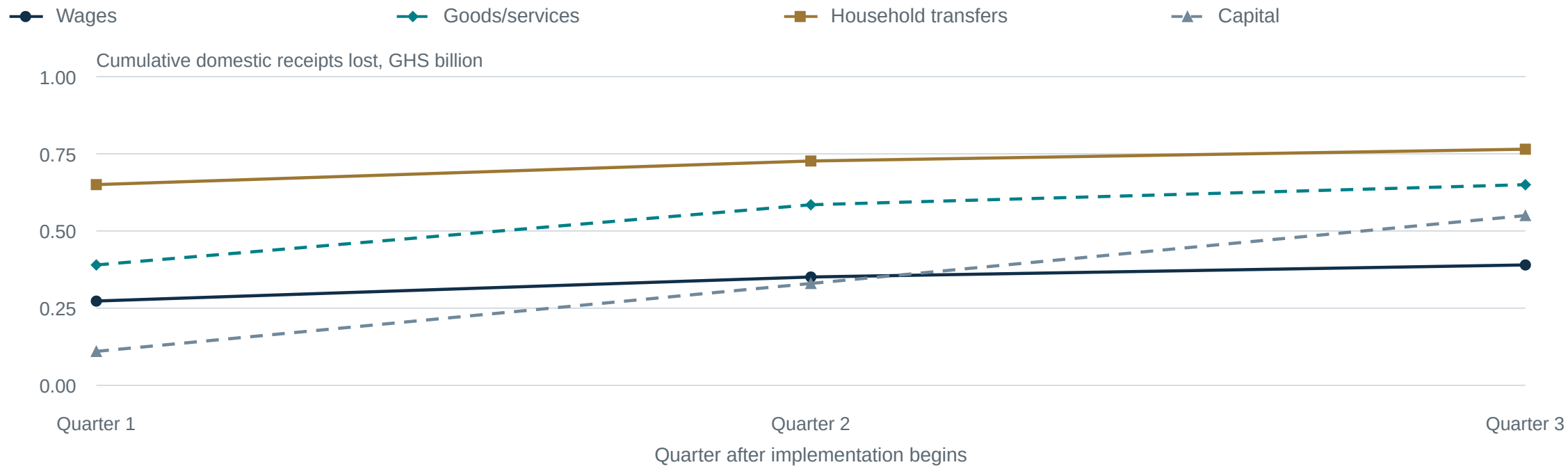
Sources: IDER calculations [S10].

Note: Thresholds exclude public-service production, long-run capital benefits and distribution. They do not recommend a cut.

The early demand footprint depends on implementation timing

One GHS 1 bn ultimate gross reduction per channel; cumulative central domestic receipts lost.

Figure 17. The early demand footprint depends on implementation timing



Sources: IDER calculations [S10].

Note: Quarter shares are assumptions, not estimated impulse responses. Ultimate gross savings are equal but first-quarter savings are not.

A current capital cancellation can remove services after a commissioning lag

GHS 1 bn cancelled project; assumed conversion efficiency 60% and depreciation 5% a year.

Figure 18. A current capital cancellation can remove services after a commissioning lag



Sources: IMF public investment (2015) [S08]; IDER calculations [S10].

Note: These are effective-stock units under a hypothetical production convention, not GDP losses, national capital stocks or measured project benefits.

A payment delay and a project cancellation cannot share one impact label

The same near-term Treasury cash reduction can leave different liabilities and productive capacity.

PAYMENT DELAY	EXECUTION DELAY	CANCELLATION
Delivered work can remain payable while contractor financing costs rise. The Treasury may defer cash without undoing current production; arrears and legal obligations require separate records.	Unperformed work shifts materials, employment and commissioning. The eventual project may still be completed, but the service stream starts later and costs may change.	A cancelled project removes future spending and possibly future services. Avoided low-value costs, termination liabilities and loss of complements must be assessed project by project.

Sources: IMF GFSM 2014 [S06]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: No observed Ghana project is classified into these states by this publication.

Protect useful service bundles—not a budget label in isolation

A composition decision must combine demand, delivery, medium-term value and fiscal feasibility.

OPERATING BUNDLE	PROJECT READINESS	TARGETED PROTECTION
Identify staff, materials, maintenance and assets needed for a defined service. Protecting one input while cutting its essential complement can strand public resources.	Review appraisal, completion percentage, remaining cost, funding and legal commitments. Near-complete productive projects may have a different cost of interruption from unready new starts.	Assess who loses disposable income and which essential uses are displaced. Targeting, benefit adequacy and administrative capability matter alongside the aggregate demand estimate.

Sources: UNICEF LEAP overview (2024) [S05]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: The report provides a decision framework, not an optimised national spending allocation or a blanket exemption for all capital projects.

The relevant exposure is the firm’s customer mix—not the national spending share

Assumed fractions of baseline revenue; the remaining share is unaffected.

Table 20. The relevant exposure is the firm’s customer mix—not the national spending share

Hypothetical profile	Wage-funded retail	Transfer-funded retail	Public procurement	Capital orders
Food retailer	35%	25%	5%	0%
Diversified consumer producer	25%	10%	15%	5%
Government supplier	5%	0%	70%	5%
Civil works contractor	0%	0%	10%	75%
Equipment importer	5%	0%	15%	65%

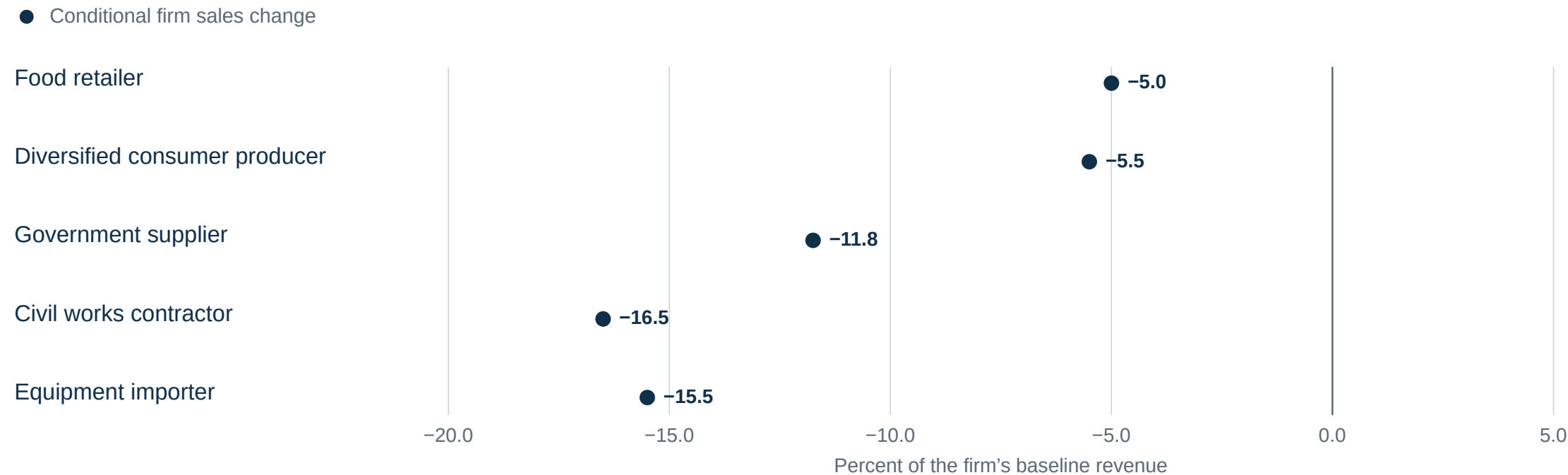
Sources: IDER calculations [S10].

Note: No companies were sampled. Revenue categories are mutually exclusive in the model; source government accounts do not identify these firm weights.

Capital-exposed and procurement-exposed firms can face different sales shocks

Imposed channel changes: wage-funded consumption –5%; transfer-funded –10%; procurement –15%; capital orders –20%.

Figure 19. Capital-exposed and procurement-exposed firms can face different sales shocks



Sources: IDER calculations [S10].

Note: These shocks are separate from the equal-GHS 1 bn portfolios. Prices, substitution, other sales and margins are held fixed; no output or jobs coefficient is fitted.

Lower sales can leave a planned capital purchase unfunded

Hypothetical fixed plan: GHS 1 m capex, GHS 1.1 m available own funds plus usable credit, GHS 10 m sales and a 25% cash contribution margin.

Table 21. Lower sales can leave a planned capital purchase unfunded

Profile	Cash contribution lost	Funding gap: unchanged FX	Funding gap: FX +20%
Food retailer	125.0	25.0	125.0
Diversified consumer producer	137.5	37.5	137.5
Government supplier	293.8	193.8	293.8
Civil works contractor	412.5	312.5	412.5
Equipment importer	387.5	287.5	387.5

Sources: IDER calculations [S10].

Note: All monetary entries are GHS thousand. Imported capex share is assumed 50%; the FX shock raises plan cost by GHS 100 k. Gaps are financing tests, not realised investment effects.

An unfunded investment plan is not an estimated decline in realised investment

The new capital test links the enterprise sales scenario to available investment resources.

CASH CONTRIBUTION	CAPITAL-COST EXPOSURE	UNOBSERVED RESPONSE
The model subtracts only the assumed margin on lost sales from investment funds available after normal operating commitments. It does not subtract the full sales decline as though all costs were fixed.	The imported portion of a fixed capital plan becomes more expensive under depreciation. This differs from the public capital cancellation model and is not an additional national expenditure loss.	Owners might reduce, phase, refinance or cancel the plan. The report does not choose a realised behavioural response or claim that a financing gap causes a particular percentage fall in investment.

Sources: IDER calculations [S10].

Note: Own funds and credit availability are hypothetical. No firm-specific lender approval, collateral, project return or investment forecast is supplied.

A smaller order book and a slower receipt affect different parts of the cash plan

The sales scenario must be linked to actual billing and spending dates before financing is assessed.

ORDER LOSS	PAYMENT DELAY	FINANCING RESPONSE
A cancelled purchase reduces future revenue. Costs may fall only partly or with delay; the fixed-cost cash test deliberately holds planned operating payments unchanged.	The sale and receivable may already exist, but cash arrives after payroll or supplier deadlines. Eventual cohort receipts can remain unchanged while the bridge requirement rises.	Loan availability, fees, collateral and owner funding affect the feasible operating response. A negative simulated cash position is not an observed default or a headcount forecast.

Sources: Barrot & Nanda (2020) [S09]; IDER calculations [S10].

Note: The cash model is a mechanism demonstration, not a representative Ghana enterprise or a calibrated business forecast.

The enterprise cash example is specified before the receipt shocks

All amounts GHS thousand; one hypothetical 90-day operating cohort.

Table 22. The enterprise cash example is specified before the receipt shocks

Item	Assumption	Treatment
Opening usable cash	200 on day 0	No opening loan or hidden reserve.
Customer receipts	600 on day 30; 700 on days 60 and 90	60% government share; remainder unaffected.
Operating cash payments	550 on days 20, 50 and 80	Cost plan held fixed under order reduction.
Government order cut	0%, 10% or 20%	Reduces the government receipt amounts only.
Government receipt delay	0, 15 or 30 days	Moves receipt dates; post-day-90 amounts retained.

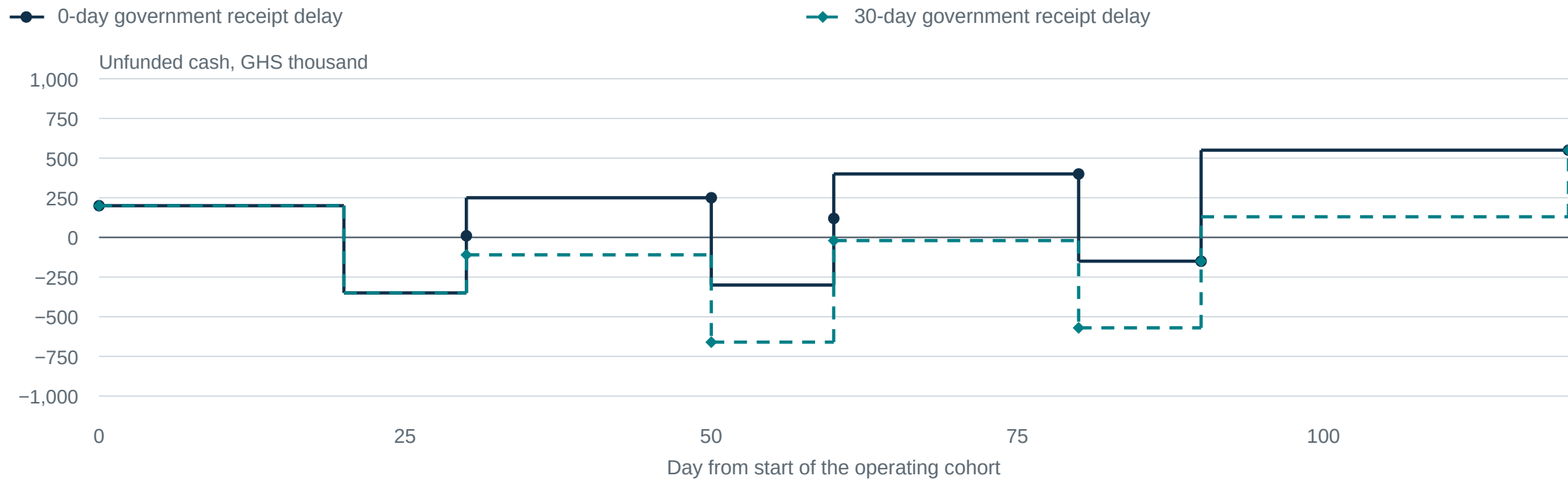
Sources: IDER calculations [S10].

Note: Payments precede receipts on any shared day. Taxes, lending fees, wage adjustment and new post-horizon operations are excluded.

Delaying receipts can increase bridge demand without changing eventual cash

No order loss; fixed cost schedule; delayed receipts remain in the same cohort.

Figure 20. Delaying receipts can increase bridge demand without changing eventual cash



Sources: IDER calculations [S10].

Note: The 90-day bridge rises from GHS 350 k to GHS 660 k at 30 days of delay. All-cohort cash remains GHS 550 k. Post-horizon receipts do not fund earlier payments.

Report bridge, horizon cash and eventual cash separately

Nine conditional cases from the same enterprise ledger; GHS thousand.

Table 23. Report bridge, horizon cash and eventual cash separately

Delay / order cut	Bridge required	Day-90 closing	Eventual cohort cash
0 days / 0%	350	550	550
0 days / 10%	350	430	430
0 days / 20%	372	310	310
15 days / 0%	350	130	550
15 days / 10%	350	52	430
15 days / 20%	372	-26	310
30 days / 0%	660	130	550
30 days / 10%	660	52	430
30 days / 20%	660	-26	310

Sources: IDER calculations [S10].

Note: A financing requirement is not an approved facility. Fixed operating costs intentionally exclude the firm’s unestimated adaptation response.

The validation adds disaggregated records and explicit inferential checks

New source evidence and model extensions remain distinguishable; no original causal regression is presented.

Table 24. The validation adds disaggregated records and explicit inferential checks

Block	What has been added	What the addition does not establish
H1 economic classification	Capital sublines, social contributions and offsetting grant/other-expenditure movements.	Payment completion, physical output or discretionary exogenous shocks.
LEAP seven-year evaluation	Published consumption/economic coefficients, t-statistics, q-values, attrition and receipt status.	New IDER estimates, a national MPC or effects of all government transfers.
Regional narrative paper	Published coefficients/SEs, horizon-specific diagnostics and sample-count exception.	Four category-specific Ghana multipliers or independently verified causal assumptions.
Matched fiscal target	Equal-net comparisons at 729 parameter settings and all 64 rectangle corners.	A probability distribution, policy optimum or total macroeconomic multiplier.
Enterprise funding	1,098 cash cases varying order loss, delay, cost flexibility and interest.	Observed firms, finance offers, jobs effects or realised investment behaviour.

Sources: MoF Mid-Year 2025 [S02]; IMF WP 26/12 [S04]; LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: Source-derived evidence, attributed econometric findings and synthetic scenarios have separate input files and status labels.

The normal domestic capital line executed 1.32% of its H1 programme

H1 2025 programme versus provisional outturn. Sub-lines are nested, not additive to their parents.

Table 25. The normal domestic capital line executed 1.32% of its H1 programme

Source line	Programme GHS bn	Outturn GHS bn	Execution %
Domestic financed	8.642	3.952	45.73
Normal domestic capital	3.498	0.046	1.32
Big Push capital	5.144	3.906	75.93
Big Push: ABFA	3.179	1.829	57.54
Big Push: mineral royalties	1.965	2.077	105.69
Foreign financed	9.417	3.153	33.49

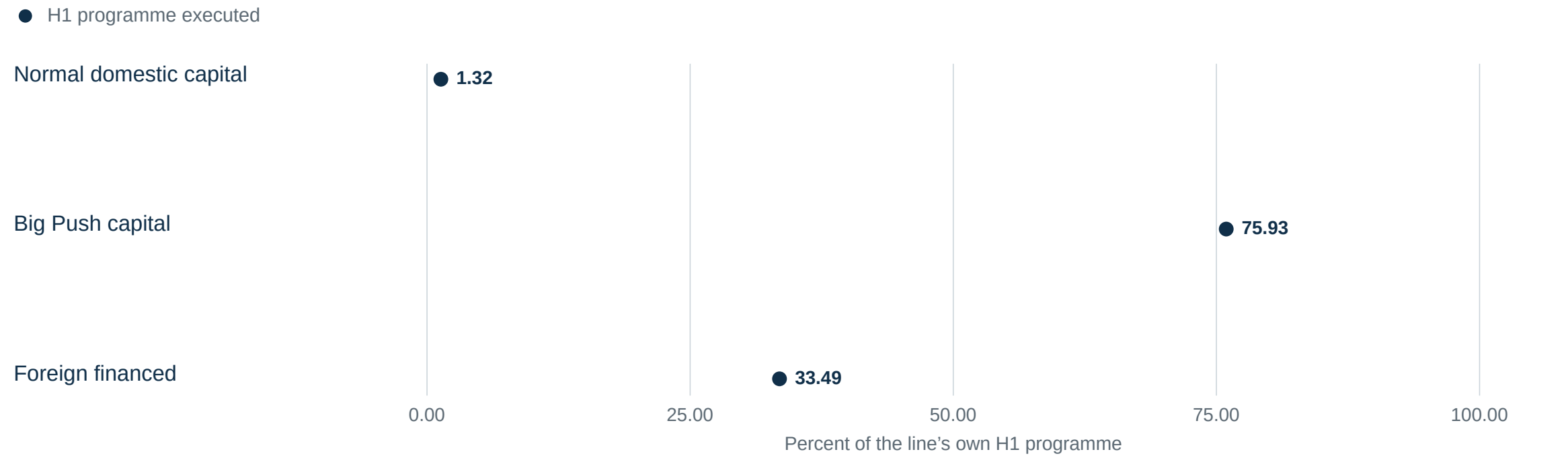
Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: “Normal” and “Big Push” are source labels. The result does not identify cancellation, delayed certification or verified completion.

The domestic capital aggregate masks sharply different execution rates

The normal line represents only 1.17% of the disclosed domestic-capital outturn.

Figure 21. The domestic capital aggregate masks sharply different execution rates



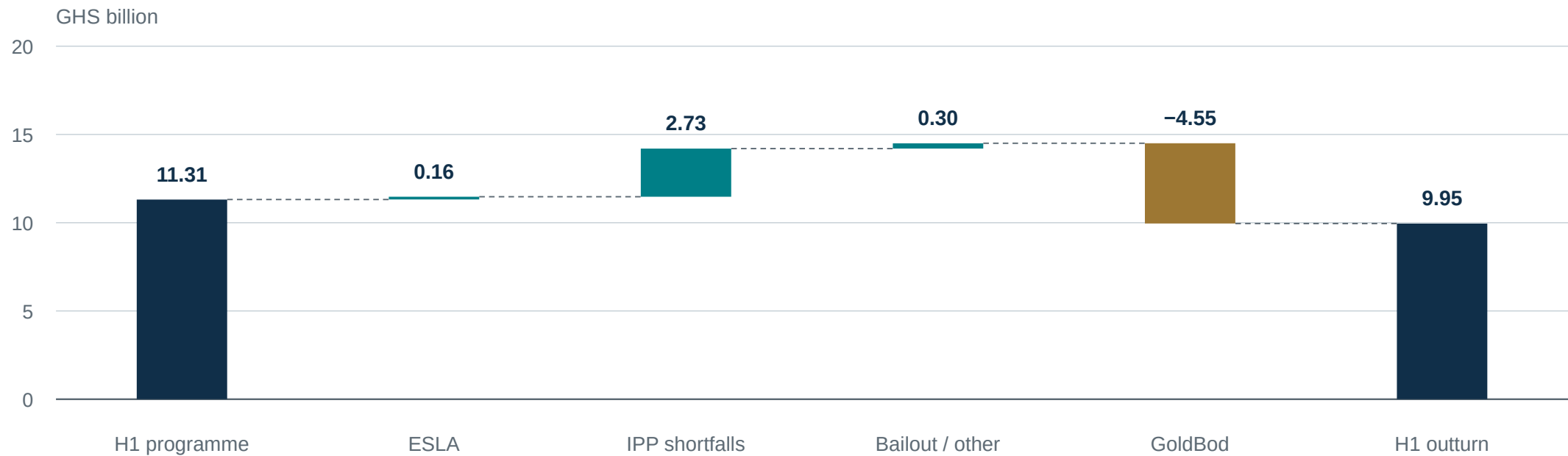
Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: Financing origin is not local sourcing. Recipient-level expenditure, project status and payment evidence are still required.

H1 “other expenditure” fell even as three component lines overshot

Programme-to-outturn bridge, GHS billion; the one-cedi component residual is below display precision.

Figure 22. H1 “other expenditure” fell even as three component lines overshot



Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: GoldBod’s zero on this specific H1 line is not evidence of zero activity or spending under another classification or date.

A 99.78% grant aggregate conceals GHS 2.923 billion of gross deviations

Eight positive-programme recipient lines; the zero-programme GIIF line is excluded from mean execution.

Table 26. A 99.78% grant aggregate conceals GHS 2.923 billion of gross deviations

Diagnostic	Calculated value	Interpretation
Aggregate execution	99.78%	Ratio of the parent outturn and programme; implicitly programme-weighted.
Simple mean across eight lines	97.49%	Each line gets equal weight; not the fiscal total’s execution rate.
Gross above-programme amounts	1.434 GHS bn	NHIF, GETFund, Road Fund and other earmarked funds.
Gross below-programme amounts	1.489 GHS bn	Energy Fund, DACF, IGF retention and GNPC.
Net parent variance	−0.055487 GHS bn	Opposing movements offset; three cedis of child-to-parent precision remain.

Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: Recipient-fund allocations are not household cash transfers. These figures do not establish the final use or bank settlement of grants.

Lower contributions partly offset the H1 wage-and-salary overshoot

GHS million; pensions, gratuities and social security are children of the contribution subtotal.

Table 27. Lower contributions partly offset the H1 wage-and-salary overshoot

Component	Programme	Outturn	Variance
Wages and salaries	34,098.646	35,432.900	1,334.255
Social contributions	4,221.412	3,409.589	-811.823
Pensions	1,527.619	1,230.015	-297.604
Gratuities	477.381	283.416	-193.965
Social security	2,216.412	1,896.159	-320.253

Sources: MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: The compensation total is not take-home pay. No employee count, tax incidence, arrears payment or beneficiary-level consumption is inferred.

The LEAP evidence is a near-threshold programme comparison—not a national MPC

The full July 2024 seven-year evaluation is now inspected, rather than relying only on its overview.

DESIGN AND ESTIMAND	ADJUSTMENT AND INFERENCE	REMAINING RESTRICTIONS
Households near the PMT eligibility cutoff in five pilot districts were followed in 2015, 2017 and 2022. Adjusted difference-in-differences compares the original eligibility groups; cash plus NHIS access is the programme bundle.	The source controls for PMT score and baseline household/head characteristics, includes district effects, clusters at community level and applies attrition weights. Selected outcome families have published FDR-adjusted q-values.	Near-threshold comparability and counterfactual trends are maintained assumptions, not established by a fiscal table. Later comparison-group enrolment and missing households prevent interpreting the coefficient as cash-receipt dose response.

Sources: LEAP seven-year evaluation (2024) [S11].

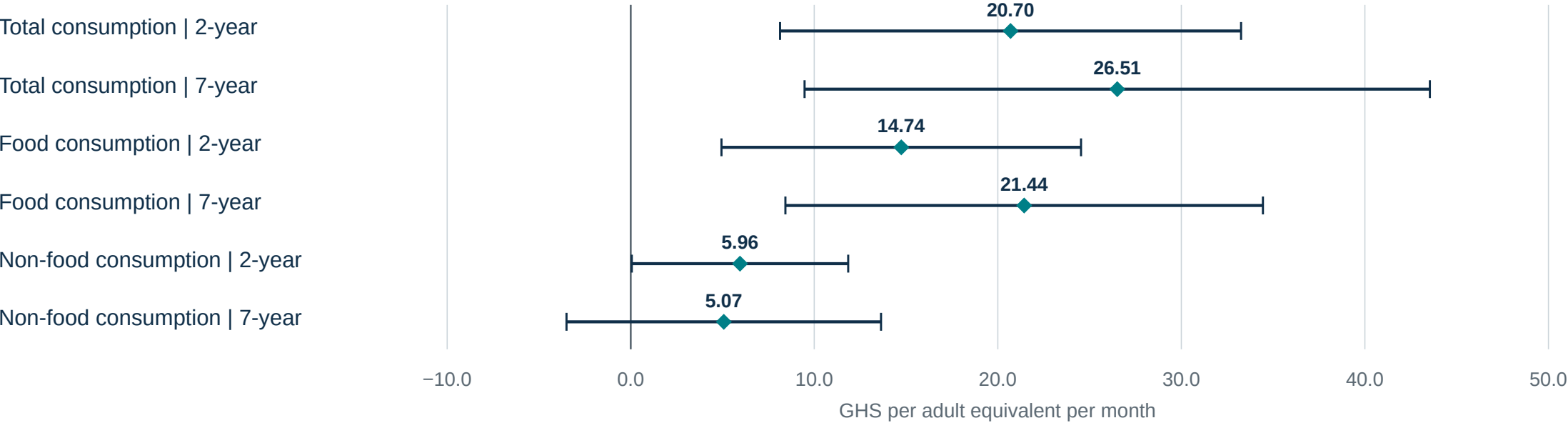
Note: Source models are reviewed and attributed, not re-estimated. No programme coefficient is inserted into the wage or procurement scenarios.

Published consumption effects are positive, but non-food precision is weaker

LEAP 1000: monthly GHS per adult equivalent, Greater Accra August 2022 prices; not per capita.

Figure 23. Published consumption effects are positive, but non-food precision is weaker

APPROXIMATE 95% NORMAL-REFERENCE INTERVALS



Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: Intervals use $|\text{estimate}/t|$ and 1.96, hence are approximate and not multiplicity-adjusted. Published p/q values are shown on the next page.

A larger seven-year estimate does not establish a statistically larger effect

Published Table 8 estimates and Appendix Table A7 p/q values; no independent or unpaired test is substituted.

Table 28. A larger seven-year estimate does not establish a statistically larger effect

Outcome / comparison	Estimate	Source p	FDR q	Unit
Total consumption 7-year	26.507	0.003	0.012	GHS / AE / month
Total consumption 7-year minus 2-year	5.813	0.384	0.238	GHS / AE / month
Food consumption 7-year	21.437	0.002	0.012	GHS / AE / month
Food consumption 7-year minus 2-year	6.697	0.206	0.141	GHS / AE / month
Non-food consumption 7-year	5.071	0.248	0.157	GHS / AE / month
Non-food consumption 7-year minus 2-year	-0.884	0.781	0.447	GHS / AE / month

Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: The total-consumption difference is 5.813, p=0.384. Consumption trims each round’s bottom/top 1%; pooled N=6,291 is not unique households.

Balanced-panel retention is 85.74%, not complete follow-up

Published baseline and three-wave panel counts; no new response weights are estimated.

Table 29. Balanced-panel retention is 85.74%, not complete follow-up

Eligibility group	Baseline households	Balanced panel	Missing	Retained %
Treatment	1262	1097	165	86.93
Comparison	1235	1044	191	84.53
Total	2497	2141	356	85.74
Round-3 interview only	2,497	2,254	243	90.27

Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: Round-3 interviews and the three-wave panel differ. The source uses attrition IPW; this cannot by itself certify missingness is ignorable.

Eligibility and actual receipt are not interchangeable treatment variables

Published simple means have their own response denominators; the transfer-value samples are 1,031 and 986.

Table 30. Eligibility and actual receipt are not interchangeable treatment variables

Source measure	2017	2022	Difference / meaning
Current beneficiary: treatment group	87.2%	88.2%	+1.0 percentage point
Current beneficiary: comparison group	2.5%	7.7%	+5.2 percentage points
Between-group receipt gap	84.7 pp	80.5 pp	Not used as an IV first stage or to rescale the programme coefficient.
Real monthly grant per adult equivalent	GHS 18.3	GHS 16.8	
Mean grant / consumption share	12.2%	7.5%	–4.7 percentage points; not an MPC.

Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

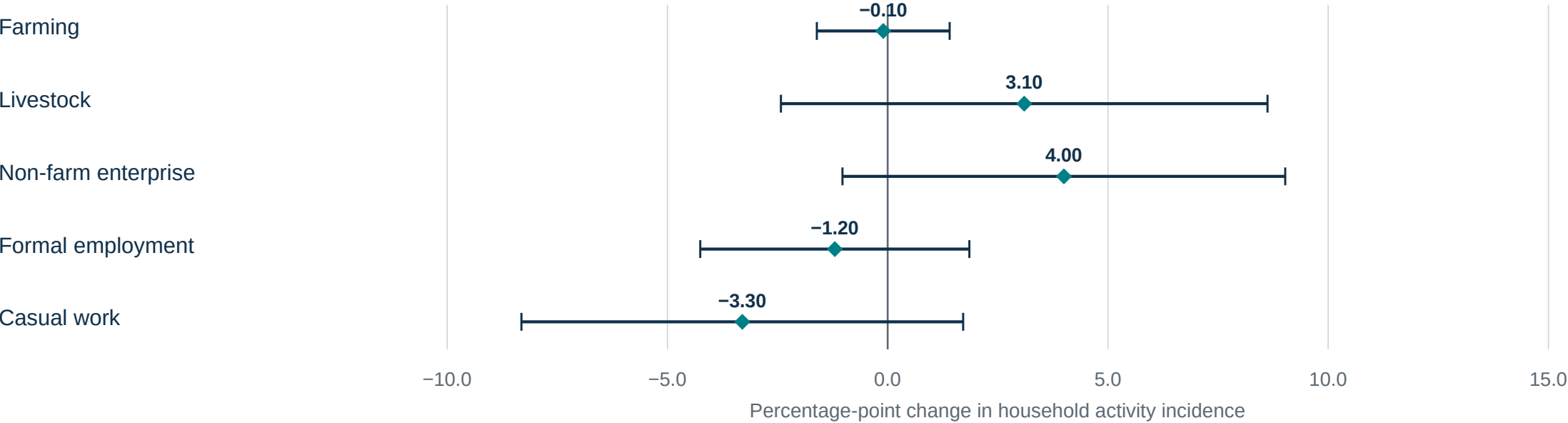
Note: Dividing the impact estimate by a later receipt gap would require additional identification and matched-sample assumptions, which are not established.

Consumption gains do not establish additional household enterprises

Published seven-year incidence contrasts; the source does not mark these economic-activity estimates as significant.

Figure 24. Consumption gains do not establish additional household enterprises

APPROXIMATE 95% NORMAL-REFERENCE INTERVALS



Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: The non-farm-enterprise point estimate is +4.0 pp (t=1.56). Intervals crossing zero do not prove zero effect. This is not firms formed per transfer cedi.

The profit outcome answers a different question from enterprise participation

Published seven-year Table 11 estimates; units and outcome definitions remain separate.

Table 31. The profit outcome answers a different question from enterprise participation

Outcome	Point estimate	Printed t	Approx. 95% reference range	Interpretation
Monthly non-farm profit	1.068	0.24	−7.65 to 9.79	GHS per month; not a percentage return or new IDER estimate.
Number of income sources	0.024	0.44	−0.083 to 0.131	Count change; not employment headcount.
Pooled economic-activity rows	6,423	Not a statistic	2,141 households × 3 rounds	Repeated records are not independent new households.
Consumption pooled rows	6,291	Not a statistic	132 fewer than the untrimmed panel	Round-specific tail exclusions; do not infer a new balanced household count.

Sources: LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

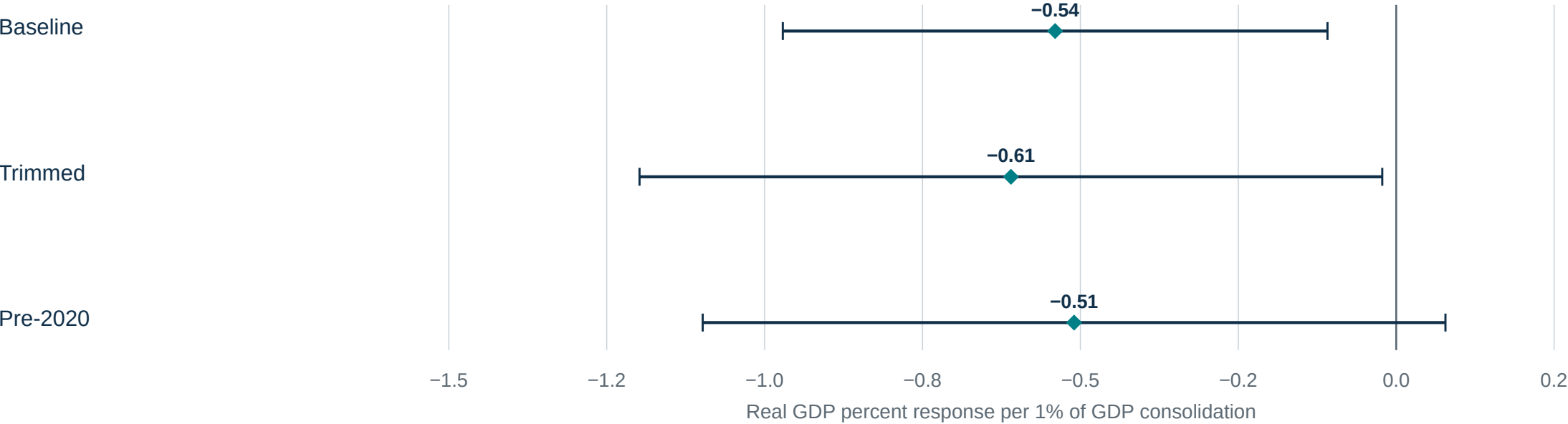
Note: The full report’s p/q evidence is prioritised where available. Rounded t-statistics allow only approximate standard-error reconstruction.

The two-year regional estimate is sensitive to sample and reference precision

Published Table 2 coefficients and country-clustered standard errors; not newly fitted regressions.

Figure 25. The two-year regional estimate is sensitive to sample and reference precision

APPROXIMATE 95% NORMAL-REFERENCE INTERVALS



Sources: IMF WP 26/12 [S04]; IDER calculations [S10].

Note: Normal-reference intervals use reported SEs. Pre-2020: $-0.51 \pm 1.96 \times 0.30$ crosses zero; the source marks significance only at 10%.

The regional robustness tables contain an unresolved sample-count exception

Horizon-specific published records retained without silently repairing the source.

Table 32. The regional robustness tables contain an unresolved sample-count exception

Horizon	Baseline N	“Trimmed” N	KP F	95% t(13) reference: baseline
0 years	365	374	22.04	−0.597 to 0.137
1 years	352	362	17.06	−0.852 to 0.012
2 years	339	350	8.35	−1.015 to −0.065
3 years	326	338	6.52	−0.907 to 0.347

Sources: IMF WP 26/12 [S04]; IDER calculations [S10].

Note: “Trimmed” N exceeds baseline N. The t(13) range is a sensitivity reference, not the authors’ interval or a corrected small-cluster estimator.

Identification safeguards must be specific to the evidence being used

Additional numerical detail does not create an exogenous spending shock.

REGIONAL CONSOLIDATION	PROGRAMME ELIGIBILITY	ORIGINAL GHANA COMMISSION
Narrative motivation, anticipation, simultaneous reforms and common shocks remain substantive restrictions. A KP statistic alone does not establish exclusion or weak-instrument-robust coverage. No new IV coefficient is released.	The LEAP design has a near-cutoff population, attrition weights and a programme bundle. Comparison-group enrolment, tail trimming and community dependence are retained; no national transfer multiplier is manufactured.	A category-specific causal estimate still needs cash exposure, outcomes and defensible assignment. The source fiscal rows are not treated as shocks, and projections are never used as realised consumption or investment.

Sources: IMF WP 26/12 [S04]; LEAP seven-year evaluation (2024) [S11]; Andrews, Stock & Sun (2019) [S12]; IDER calculations [S10].

Note: P01–P02 remain prospective. The source studies’ empirical claims are attributed; no assertion is made that all endogeneity has been removed.

Equal net fiscal saving removes the last stable ranking in this parameter box

Paired differences at the same six parameters; GHS billion of first-round domestic seller receipts lost.

Table 33. Equal net fiscal saving removes the last stable ranking in this parameter box

Left minus right	Minimum	Maximum	Stable sign?
Wage-heavy – Procurement/capital	−0.327	0.263	No
Wage-heavy – Balanced	−0.246	0.114	No
Wage-heavy – Transfer-heavy	−0.373	0.075	No
Procurement/capital – Balanced	−0.206	0.138	No
Procurement/capital – Transfer-heavy	−0.434	0.200	No
Balanced – Transfer-heavy	−0.274	0.108	No

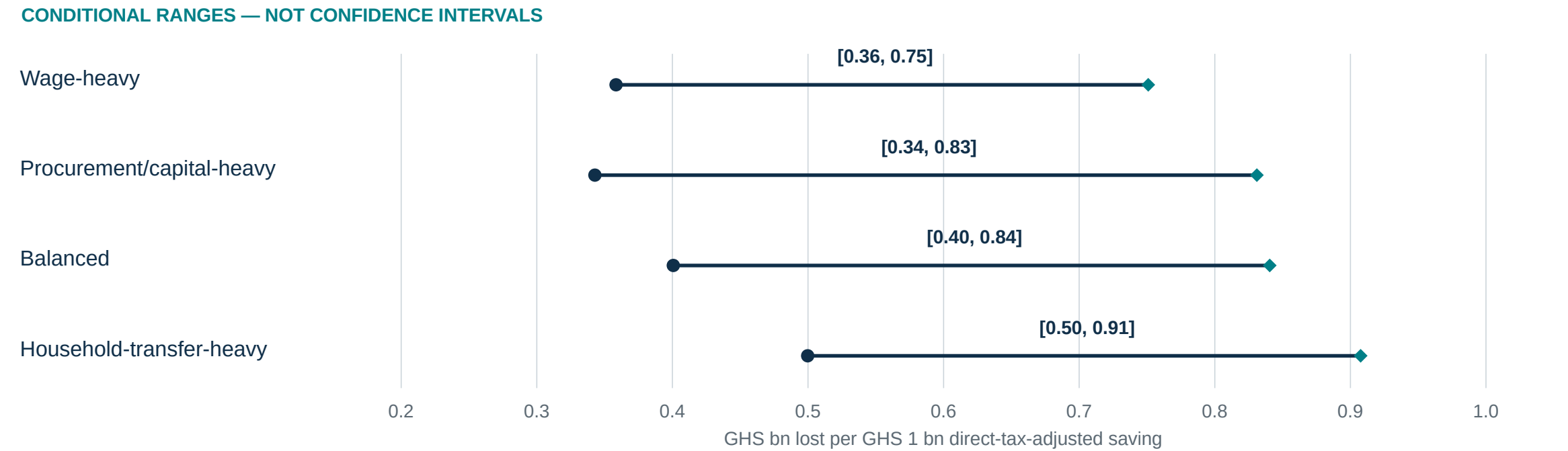
Sources: IDER calculations [S10].

Note: The wage-heavy versus transfer-heavy contrast changes from always negative at equal gross cuts to −0.373 to +0.075 at equal direct-tax-adjusted savings.

The same net target increases exposure in wage-heavy comparisons

Exact extrema over the original six-parameter rectangle, holding wage withholding at 20%.

Figure 26. The same net target increases exposure in wage-heavy comparisons



Sources: IDER calculations [S10].

Note: Each result rescales the gross cut before computing receipts. Wider tax, monetary, welfare and public-service responses are not included.

The 64-corner check establishes extrema only under the declared model

The validation strengthens numerical coverage without pretending that the scenario parameters are observed.

SAME TARGET	EXACT RECTANGLE	LIMIT OF THE CLAIM
For portfolio p, divide the gross-receipt response by $1 - 0.20 \times \text{wage weight}$. Household net-wage fraction remains 0.80. Comparing different fiscal saving denominators would change the question.	Every contrast is affine in each one of the six parameters when the others are fixed. Repeated endpoint selection therefore places a minimum and maximum at a corner: all 64 corners are evaluated independently.	The rectangle is assumed, not an estimated joint distribution. Parameter dependence, wage-tax changes, public services and general equilibrium are outside the proof; no ranking frequency is called a probability.

Sources: IDER calculations [S10].

Note: All 2,916 matched-net results lie within the corresponding corner bounds. Corner witnesses and the proof are supplied in the methodology annex.

A smaller order book may reduce costs; a delayed old invoice does not

The extension makes adaptation explicit rather than assuming all operating costs remain fixed.

Table 34. A smaller order book may reduce costs; a delayed old invoice does not

Input	Specified rule	Boundary
Unchanged operating plan	Opening cash 200; three payments of 550; receipts 600/700/700. All GHS thousand.	Same baseline as the original nine-case ledger.
Order loss and government share	Order cuts 0%, 10%, 20%; government share 60%.	Private receipts and prices unchanged.
Cost flexibility	Reduce each operating payment by $550 \times 0.60 \times \text{order cut} \times \text{flexibility}$. Flexibility 0, 0.5, 1.	Assumed avoidable costs; no observed wage or headcount response.
Delay and finance	Government receipts shift by 0–60 days; rates 0% or 24%; 1,098 cases.	Payments precede same-day receipts; no approved facility is inferred.
Interest horizon	Charge a negative end-day balance before the next day, through the last receipt.	Day-90 cash is separate; peak bridge and cost follow the full cohort. No charge after its last receipt.

Sources: IDER calculations [S10].

Note: Cost relief applies to foregone new orders only. It is not assigned to an already delivered, certified but unpaid invoice.

Cost flexibility reduces the bridge, but does not eliminate payment timing

20% government-order cut, 24% assumed annual bridge rate; GHS thousand.

Figure 27. Cost flexibility reduces the bridge, but does not eliminate payment timing

	No cost relief	Half flexibility	Full flexibility
0-day delay	376.8	319.1	285.9
15-day delay	377.9	319.1	285.9
30-day delay	668.2	601.1	534.0
60-day delay	949.5	847.9	746.2

Full-cohort peak bridge, GHS thousand

Sources: IDER calculations [S10].

Note: Flexibility is an imposed operating response, not an estimated cost elasticity. Cells do not measure actual Ghana business finance or defaults.

Interest and cost adaptation change both the limit and eventual cohort cash

Same 20% order cut and 30-day payment delay, with a hypothetical 24% bridge facility; GHS thousand.

Table 35. Interest and cost adaptation change both the limit and eventual cohort cash

Cost flexibility	Full-cohort peak	Day-90 cash	Eventual cash	Full-cohort interest
0.0	668.172	−39.794	295.413	14.587
0.5	601.075	61.857	397.857	11.143
1.0	533.978	163.054	499.054	8.946

Sources: IDER calculations [S10].

Note: Eventual cash = 550 −1,200×cut +1,650×0.60×cut×flexibility − interest. Future receipts are not available before their dates.

Release decisions now depend on these specific validation results

The amendment log separates corrected wording, new evidence and still-unresolved research requirements.

Table 36. Release decisions now depend on these specific validation results

Finding	Report treatment	Condition for stronger claims
LEAP consumption unit	Corrected per capita to per adult equivalent; full-study evidence and q-values added.	Do not treat the published level effect as an MPC or all-transfer multiplier.
Compensation versus wages	Corrected the annual figure title to compensation; H1 wage/contribution sublines retained.	Net employee cash and headcount require payroll evidence.
H1 internal offsets	Capital, grant and other-expenditure components now reconcile to parents.	Invoices, delivery and payment dates needed for actual demand shocks.
Source inference exceptions	Regional “trimmed” sample count and unavailable source table images remain disclosed.	Obtain replication data and second-source/image confirmation.
Policy and enterprise scenarios	Same-net-target and cost-adaptation checks added; no welfare ranking or firm effect fitted.	Authorised linked data, observed parameters and credible counterfactual required.

Sources: MoF Mid-Year 2025 [S02]; IMF WP 26/12 [S04]; LEAP seven-year evaluation (2024) [S11]; IDER calculations [S10].

Note: The original frozen outputs remain in the archive. Numerical reproducibility is not an independent audit of source systems or an external peer review.

The first-round arithmetic is not the full fiscal multiplier

Prices, interest rates, exchange rates and expectations can amplify or offset direct spending channels.

FINANCING AND MONETARY POLICY

Credible adjustment can alter borrowing costs and risk perceptions. Monetary responses and bank liquidity determine whether cheaper funding offsets lost sales; no response is assumed here.

IMPORTS AND FX

Import content changes immediate local receipts and FX demand. Exchange-rate movements also affect costs and balance sheets, so domestic content alone cannot rank macroeconomic outcomes.

CAPACITY AND THE CYCLE

Slack, supply constraints, household liquidity and project quality change the response. A contraction in a downturn may not be symmetric with an expansion during a boom.

Sources: IMF WP 26/12 [S04]; Batini et al. (2014) [S07]; IMF public investment (2015) [S08].

Note: No automatic confidence dividend, interest-rate reduction or exchange-rate effect is added to the conditional scenario results.

An expenditure–sales regression needs an identified shock, not just more controls

These threats are treated explicitly rather than declared eliminated.

Table 37. An expenditure–sales regression needs an identified shock, not just more controls

Threat	Specific problem	Required empirical safeguard
Reverse causation	Government spending and transfers can respond to expected weak activity.	Narrative motivation, justified instruments or credible assignment; test anticipation.
Composition substitution	A capital reduction may finance another category or arrears clearance.	Observe the full budget and financing package, not one component alone.
Cash and price measurement	Recognised spending can differ from paid cash and real input quantities.	Link releases and receipts; use category-specific prices when available.
Supplier and project selection	Paid/successful projects may differ from unpaid, cancelled or failed projects.	Start from an eligible roster and preserve exits, failures and missing outcomes.
Common shocks and spillovers	Growth, FX and local demand affect treated and comparison groups.	Credible comparison and interference design; inference at the relevant dependence level.

Sources: Luciani & Asamoah (2026) [S03]; IMF WP 26/12 [S04]; IDER calculations [S10].

Note: No propensity weighting or imputation is applied to fabricate unobserved firm outcomes, source coverage or a causal effect.

Estimate consumption, sales and investment responses separately

P01 defines a possible local-projections design; no original Ghana regression is fitted in this publication.

SHOCK SERIES	OUTCOMES	ROBUSTNESS
Distinguish gross cash wages, operating procurement, household benefits and capital purchases. Record announcement, authorisation and delivery dates; do not use an accounting residual as an exogenous shock.	Use real household consumption, sectoral enterprise turnover, private capital expenditure and public project progress. Normalise cumulative effects to the identified spending innovation at each horizon.	Prespecify lags, horizons, price treatment, instrument diagnostics and uncertainty. Test pre-trends, anticipatory responses, alternative windows and weak identification; projections are not outcome observations.

Sources: Luciani & Asamoah (2026) [S03]; IMF WP 26/12 [S04]; Batini et al. (2014) [S07]; IDER calculations [S10].

Note: Fitted point estimates, standard errors and causal claims require the underlying data and a defensible identification strategy.

The four-category design requires linked cash, recipient and project data

A source fiscal table is a starting point, not the complete evaluation dataset.

Table 38. The four-category design requires linked cash, recipient and project data

Layer	Required fields	Release condition
Fiscal payment panel	Economic category, project/programme, amount, release date, supplier value date, recognition basis.	Reconcile category cash totals and preserve unmatched claims.
Household panel	Actual net wages/benefits, eligibility, purchases, prices, debt and saving.	Consent, representative sampling, baseline constraints and attrition.
Enterprise panel	Customer mix, invoices, receipt dates, sales, costs, payroll, investment and firm exit.	Retain failed suppliers and unmatched outcomes; no survivor-only result.
Capital projects	Appraised value, implementation stage, imported inputs, completion, maintenance and service indicators.	Observe delivered assets, not just invoice expenditure.
Causal design	Shock source, treatment timing, counterfactual, spillovers and dependence unit.	Association label when exclusion or comparison conditions fail.

Sources: IMF GFSM 2014 [S06]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: Blank data-request schemas are included in the package; they contain no invented household, firm or project records.

A programme effect cannot be scaled mechanically to the whole budget

P02 requires a defined recipient or enterprise population and its own credible comparison.

TARGET POPULATION	INTERFERENCE	ESTIMAND DISCIPLINE
LEAP recipients, public workers and suppliers face different constraints. Receipt-weighted, population-weighted and firm-weighted averages answer different questions.	A transfer recipient buys from a local firm; a paid contractor may hire from another firm. Direct gains can coexist with displaced activity, imports or local price changes.	State whether the target is the effect of eligibility, a facilitation offer, actual cash received or a spending shock. A valid estimate for one target does not automatically identify another.

Sources: UNICEF LEAP overview (2024) [S05]; Barrot & Nanda (2020) [S09]; IDER calculations [S10].

Note: No Ghana-wide jobs total, national firm-sales multiplier or representative household MPC is inferred from the conditional examples.

Translate spending composition into the institution’s actual exposure

A policy-budget amount is not automatically an investable market or an available cash stream.

Table 39. Translate spending composition into the institution’s actual exposure

Audience	Use of this report	Next evidence to verify
MoF, Treasury and Parliament	Separate headline adjustment, final spending use, cash execution and distribution.	Category releases, paid invoices, programme eligibility and project status.
Banks, funds, insurers and pensions	Stress customer revenue and borrower liquidity by fiscal exposure.	Holdings, borrower concentrations, loan terms and dated asset/liability cash.
Manufacturers, retailers and MSMEs	Distinguish payroll-driven consumption, benefits and direct public orders.	Own sales mix, import content, margins, orders and customer payment dates.
Contractors and government suppliers	Model cancelled work separately from delayed cash.	Accepted work, payment certificates, completion cost and usable credit.
DFIs, private equity and diaspora investors	Assess infrastructure complements, execution risk and private demand.	Project appraisal, operating budget, ownership and financing conditions.

Sources: IDER calculations [S10].

Note: No portfolio allocation, credit rating, current product recommendation or guaranteed payment is provided.

A composition hearing should ask what was protected and what was displaced

Five questions make the adjustment accountable beyond a deficit total.

Table 40. A composition hearing should ask what was protected and what was displaced

Question	Evidence to request	Misleading shortcut to avoid
Which categories supplied the adjustment?	Matched nominal, real-sensitivity and cash-execution decomposition.	Calling every spending reduction an equal demand shock.
Where did government grants ultimately go?	Recipient fund expenditure and capital content, consolidated.	Treating the transfer line as household cash.
Was capital cancelled, delayed or merely unpaid?	Project progress, certificate, retention and bank settlement.	Equating lower capital recognition with lower physical work.
Who bore the household-income reduction?	Net payroll and programme-recipient distribution.	Using total population as a beneficiary count.
Which services and private activities were affected?	Materials/staff/assets and linked firm/household outcomes.	Inferring GDP or jobs from a first-round receipts coefficient.

Sources: IDER calculations [S10].

Note: These are proposed scrutiny requirements; they are not findings of legal non-compliance by an institution.

Assess final use and service readiness before imposing across-the-board cuts

The evidence supports a discriminating review, not a universal ordering of four budget labels.

FIRST: RECONCILE	SECOND: TEST INCIDENCE	THIRD: PROTECT VALUE
Resolve economic classification, intergovernmental double counting and paid-versus-recognised amounts. The source capital perimeter changes execution from 39.34% to 58.38%.	Compare net household resources, supplier orders and project progress. Use the scenario ranking only with measured local sourcing and household constraints.	Identify legally due obligations, targeted essential support and functioning service bundles. Evaluate readiness and remaining value before protecting or cancelling a capital line.

Sources: MoF Mid-Year 2025 [S02]; UNICEF LEAP overview (2024) [S05]; IMF public investment (2015) [S08]; IDER calculations [S10].

Note: The report does not claim that all capital spending is superior to all recurrent spending, or that every transfer has a high multiplier.

The first 90 days should produce a reproducible composition-and-demand pilot

Proposed timeline begins after data access and institutional approval.

Table 41. The first 90 days should produce a reproducible composition-and-demand pilot

Window / owner	Concrete deliverable	Measurable acceptance criterion
Days 0–30 MoF/CAGD and IDER	Freeze category crosswalk, final-use map, source vintages and public payment roster.	Every captured material item has category, amount, basis and date; all unmapped grants disclosed.
Days 31–60 Treasury, statistics, programme and supplier teams	Match cash delivery; build household/enterprise/project exposure records and sensitivity cases.	No known double counting; all missing price, recipient and payment fields flagged.
Days 61–90 IDER and independent reviewer	Release descriptive evidence, approved scenario dashboard and preregistered next-stage design.	All numerical outputs replay; each claim has a source/status; no unidentified causal coefficient released.

Sources: IDER calculations [S10].

Note: Acceptance targets apply to captured pilot data, not achieved nationwide coverage. No institution has been assigned a new mandate by this report.

Monitor composition, delivery and outcomes on separate but linked records

Suggested frequency and ownership for the approved pilot.

Table 42. Monitor composition, delivery and outcomes on separate but linked records

Indicator	Definition	Frequency / owner
Economic composition	Category amount and share on matched primary-expenditure and GDP bases.	Monthly / fiscal reporting
Within-year execution	Paid or recognised outturn divided by matching-period programme, labelled by basis.	Monthly / budget and Treasury
Household real resources	Actual net wage/benefit receipts with relevant prices and recipients.	Programme/payroll cycle / programme lead
Enterprise demand and liquidity	Buyer-category sales, orders, collection days and event-date cash minima.	Monthly / consenting supplier panel
Project delivery	Verified milestone, remaining cost, commissioning and operating resources.	Project stage / implementing agency
Identification and coverage	Eligible universe, missing records, comparison design and source exceptions.	Every release / research quality lead

Sources: IDER calculations [S10].

Note: Monitoring indicators are not treatment effects. Thresholds need authorised owners and actual programme data.

Measurement limits remain attached to the findings

These conditions govern the use of the report and its supporting extracts.

Table 43. Measurement limits remain attached to the findings

Issue	Treatment	Restriction
Primary table images	IMF and MoF values were checked through parsed primary text/headings and arithmetic; screenshot requests failed.	No claim of image-verified table transcription or a source-system audit.
Observation window	Current annual record has 2024 actual and 2025 preliminary; later years are projections.	No original causal regression using projections as observations.
Classification and price indices	MoF and IMF transfer/capital scopes differ; common deflators are sensitivities.	No unqualified cross-source category growth or real procurement quantity.
Published Ghana study	Publisher abstract accessed; full methods, intervals and replication files unavailable.	Source point findings attributed; no re-estimation or invented uncertainty.
Conditional parameters	MPC, sourcing, taxes, efficiency, shocks and cash schedules are imposed.	No national multiplier, jobs estimate, probability or optimal spending plan.
Original source binaries	Runtime downloads failed; URLs and transcriptions supplied.	Original source PDF/HTML files are not bundled.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; Luciani & Asamoah (2026) [S03]; IDER calculations [S10].

Note: Source uncertainty is not removed by numerical reproducibility. These limits also apply to quoted charts and the decision brief.

Trace each result to its source values or declared assumptions

All files refer to this spending-composition publication, not the earlier arrears report.

Table 44. Trace each result to its source values or declared assumptions

Layer	Inputs / code	Outputs
Annual composition	annual_fiscal.csv; macro_deflators.csv; analyse.py	Category changes, price sensitivity, classification bridge and source closure.
Half-year execution	h1_execution.csv; h1_grants.csv	Matched programme/outturn comparisons and broad-capital crosswalk.
Published empirical evidence	published_ghana_multipliers.csv; source register	Attributed estimates only; full covariance not reconstructed.
Demand and fiscal basis	assumptions.json; analyse.py	Four channels, 2,916 scenarios, equal-gross and direct-tax-adjusted comparisons.
Business and capital	Declared customer mix, project factors and dated cash assumptions	Enterprise sales, nine cash cases and effective-capital paths.
Validation evidence	inputs/validation; validate_extend.py	Detailed H1 rows, full LEAP methods/inference, source sample checks and net-target robustness.
Publication and checks	models.py; build_report.py; refine_final_design.py; finalise_final.py; verify_final_design.py	Editable diagrams/tables, exact extracts, metadata and source links.

Sources: IDER calculations [S10].

Note: The source data dictionary distinguishes monetary units, subsets and statuses; scenario parameters have their own assumption register.

The interpretation depends on the model’s measurement boundary

E01–E35 include definitions, published-estimate checks and conditional methods; P01–P02 are prospective.

Table 45. The interpretation depends on the model’s measurement boundary

Principle	Maintained condition	Consequence
A1 One measurement basis	Keep recognition, cash payment, period, source vintage and economic classification distinct.	A fiscal total is not automatically a demand shock.
A2 Consolidation	Treat grants and their final uses as linked, overlapping records.	No double counting of transfers and underlying expenditure.
A3 Outcome specificity	Separate consumption, seller receipts, value added, investment and service output.	Do not label all calculated coefficients GDP multipliers.
A4 Explicit counterfactual	Use identified shocks for causal estimates; use scenario labels for imposed inputs.	No original Ghana causal effect is fitted without required data.
A5 Uncertainty discipline	Show source rounding, missing fields and parameter sensitivity separately.	Scenario extrema are not statistical confidence intervals.

Sources: IDER calculations [S10].

Note: Source evidence, published study estimates and conditional outputs have distinct status labels.

Fiscal categories and nominal changes

Variables, assumptions and executable outputs accompany every numerical method.

E01 Primary-spending reconciliation

EXECUTED SOURCE ACCOUNTING

$$G_{\text{primary}} = \sum_j G_j + \rho \tag{E01a}$$

$$\rho = G_{\text{primary}} - \sum_j G_j \tag{E01b}$$

j indexes compensation, goods/services, subsidies/transfers, social benefits, grants, net capital and other/discrepancy. Units: GHS million.

ASSUMPTIONS / INTERPRETATION

Categories are mutually exclusive at the top level. Energy and financing subcategories must not be added again. Source display residuals are retained.

E02 Category changes and fiscal shares

EXECUTED SOURCE DESCRIPTION

$$\Delta G_j = G_{j,1} - G_{j,0} \tag{E02a}$$

$$\text{Share}_{j,t} = 100 \, G_{j,t} / G_{\text{primary},t} \tag{E02b}$$

G is a source expenditure category. Change is nominal money; share is percent of source primary expenditure.

ASSUMPTIONS / INTERPRETATION

Match source year, status and classification. A category contribution is not a causal demand effect or a verified cash disbursement.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Price and population sensitivity

Variables, assumptions and executable outputs accompany every numerical method.

E03 Purchasing-power sensitivity

EXECUTED DEFLATOR COMPARISON

$$g_{\text{real},j} = (G_{j,1}/G_{j,0})/(1 + \pi) - 1 \tag{E03a}$$

$$g_{\text{nom},j} = G_{j,1}/G_{j,0} - 1 \tag{E03b}$$

π is 2025 annual-average CPI growth (14.2%) or the separately shown GDP deflator (14.4%). Multiply rates by 100 for percent.

ASSUMPTIONS / INTERPRETATION

CPI is a household purchasing-power proxy; neither deflator identifies the prices or quantities of a procurement category. No end-year CPI substitution.

E04 Real per-capita sensitivity

EXECUTED POPULATION NORMALISATION

$$g_{\text{real,pc},j} = (G_{j,1}/G_{j,0})/[(1 + \pi)(1 + n)] - 1 \tag{E04a}$$

$$n = 0.018; \pi = 0.142 \tag{E04b}$$

n is source 2025 population growth. The denominator refers to all residents, not public employees, transfer recipients or school enrolment.

ASSUMPTIONS / INTERPRETATION

This normalisation is not a change in individual salaries or benefits. Matched period and positive price/population factors are required.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Recognition and capital financing

Variables, assumptions and executable outputs accompany every numerical method.

E05 Reported and excluded-line sensitivity

EXECUTED CLASSIFICATION DIAGNOSTIC

$$G_{\text{ex.other},t} = G_{\text{primary},t} - \text{Other}_t \tag{E05a}$$

$$\Delta G_{\text{primary}} = \Delta G_{\text{ex.other}} + \Delta \text{Other} \tag{E05b}$$

Other is the source other/discrepancy line. Its 2024–2025 change is kept distinct from the six named operating/capital categories.

ASSUMPTIONS / INTERPRETATION

Exclusion is a sensitivity comparison, not a corrected official balance or proof of the discretionary fiscal stance. Recognition effects remain unresolved.

E06 Capital-financing decomposition

EXECUTED SOURCE ACCOUNTING

$$K_t = K_{\text{domfin},t} + K_{\text{forfin},t} + \rho_t \tag{E06a}$$

$$\Delta K = \Delta K_{\text{domfin}} + \Delta K_{\text{forfin}} + \Delta \rho \tag{E06b}$$

K is net acquisition of nonfinancial assets. Subscripts denote financing source, not supplier nationality or import content.

ASSUMPTIONS / INTERPRETATION

Published components retain rounding. Domestic financing may purchase imports; foreign financing may buy local work. Do not apply sourcing coefficients to labels.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Execution and capital coverage

Variables, assumptions and executable outputs accompany every numerical method.

E07 Half-year execution and variance

EXECUTED MATCHED-PERIOD COMPARISON

$$\text{Execution}_j = 100 \text{ Outturn}_j / \text{Programme}_j \tag{E07a}$$

$$\text{Variance}_j = \text{Outturn}_j - \text{Programme}_j \tag{E07b}$$

Programme and provisional outturn are H1 2025 records in whole GHS.
The annual budget is a different denominator.

ASSUMPTIONS / INTERPRETATION

Execution below 100% is not an identified expenditure cut or lost output.
Seasonality, certification and project timing prohibit automatic doubling.

E08 Broad-capital perimeter bridge

EXECUTED SOURCE RECONCILIATION

$$K_{\text{embedded}} = K_{\text{broad}} - K_{\text{narrow}} \tag{E08a}$$

$$K_{\text{broad}} = K_{\text{narrow}} + K_{\text{embedded}} \tag{E08b}$$

The MoF memorandum capital measure includes capital embedded in grants. The main capital line has narrower economic-classification coverage.

ASSUMPTIONS / INTERPRETATION

The implied embedded amount is not an extra expenditure to add to both capital and intergovernmental grants. Ultimate-use data are needed for consolidation.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Compensation and source revisions

Variables, assumptions and executable outputs accompany every numerical method.

E09 Compensation split

EXECUTED SOURCE ACCOUNTING

$$\text{Compensation} = \text{Wages} + \text{SocialContributions} \tag{E09a}$$

$$\Delta\text{Compensation} = \Delta\text{Wages} + \Delta\text{Contributions} + \rho \tag{E09b}$$

The H1 source distinguishes cash wages/salaries from pensions, gratuities and social-security contributions within compensation.

ASSUMPTIONS / INTERPRETATION

Compensation growth is not take-home pay growth. No headcount, grade, withholding or employee-level incidence is inferred.

E10 Publication-vintage comparison

EXECUTED SOURCE COMPARISON

$$\text{Revision}_{j,y} = G_{\text{current},j,y} - G_{\text{earlier},j,y} \tag{E10a}$$

$$y \in \{2025, 2026\} \tag{E10b}$$

Columns are current July 2026 versus fifth-review projections shown in the same IMF table. Current 2025 is preliminary; 2026 remains projected.

ASSUMPTIONS / INTERPRETATION

Revisions are not independent observations or policy treatment assignments. The H1 MoF classification is not spliced into this annual panel.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Published multipliers and wage demand

Variables, assumptions and executable outputs accompany every numerical method.

E11 Published cumulative multiplier

ATTRIBUTED STUDY ESTIMAND

$$M_h = \Sigma_{t=0}^h \Delta Y_t / \Sigma_{t=0}^h \Delta G_t \tag{E11a}$$

$h = 1$ or 2 years in the reported comparisons (E11b)

Y denotes real output and G the source study spending shock. The four point values are transcribed from Luciani and Asamoah (2026).

ASSUMPTIONS / INTERPRETATION

This expresses a cumulative-multiplier concept, not the unretrieved paper's complete estimation equation. No new coefficient, standard error or wage/transfer split is fitted.

E12 Wage-funded consumption channel

EXECUTED CONDITIONAL RECEIPTS

$$C_w = X_w n_w m_w \tag{E12a}$$

$$D_w = C_w d_w \tag{E12b}$$

X is a gross cash wage reduction; n is net household cash fraction, m marginal consumption propensity, d domestic seller share. Central values: 0.80, 0.65, 0.75.

ASSUMPTIONS / INTERPRETATION

All three parameters are assumed. Public-service production, saving, imported consumption and subsequent feedback are not estimated. This is not total compensation incidence.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Household support and procurement

Variables, assumptions and executable outputs accompany every numerical method.

E13 Household-transfer channel

EXECUTED CONDITIONAL RECEIPTS

$$C_t = X_t m_t \tag{E13a}$$

$$D_t = C_t d_t \tag{E13b}$$

X is cash household support, excluding intergovernmental grants and producer subsidies. Central m=0.90; d=0.85.

ASSUMPTIONS / INTERPRETATION

No claim of a measured Ghana MPC. Eligibility, benefit erosion and indirect insurance channels require programme data; the source social-benefit line is not all transfers.

E14 Domestic procurement channel

EXECUTED CONDITIONAL RECEIPTS

$$D_g = X_g d_g \tag{E14a}$$

$$\text{ImportedPurchase}_g = X_g(1 - d_g) \tag{E14b}$$

X is delivered cash expenditure on goods/services; d=0.65 is the assumed domestic seller share. Units: GHS billion.

ASSUMPTIONS / INTERPRETATION

ImportedPurchase denotes direct non-domestic-seller purchases only; imported inputs resold locally remain inside D. Neither quantity is domestic value added. No supply-chain multiplier is added.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Capital orders and gross-cut composition

Variables, assumptions and executable outputs accompany every numerical method.

E15 Capital-order channel

EXECUTED CONDITIONAL RECEIPTS

$$D_k = X_k d_k \tag{E15a}$$

$$d_k = 0.55 \text{ in the central illustration} \tag{E15b}$$

X is foregone paid capital expenditure; d is an assumed domestic seller share. Project completion and effective capital are modelled separately.

ASSUMPTIONS / INTERPRETATION

A financing-source label does not identify d. Current project orders, measured gross capital formation and future productive services are different outcomes.

E16 Equal-gross-cut composition

EXECUTED SCENARIO ACCOUNTING

$$\sum_j w_j = 1; X_j = w_j X \tag{E16a}$$

$$D = \sum_j X_j k_j \tag{E16b}$$

X=GHS 1 billion gross cash reduction; weights allocate it to four channels. k combines assumed household propensities or domestic procurement shares.

ASSUMPTIONS / INTERPRETATION

Equal expenditure reduction is not equal net fiscal adjustment after tax and macro feedback. D is first-round domestic receipts, not GDP or welfare.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Net adjustment and ranking sensitivity

Variables, assumptions and executable outputs accompany every numerical method.

E17 Direct-tax-adjusted comparison

EXECUTED CONDITIONAL RESCALING

$$X^* = \text{Target} / [1 - \tau_w w_w] \tag{E17a}$$

$$\text{NetSaving} = X^* (1 - \tau_w w_w) \tag{E17b}$$

Target is GHS 1 billion. Assumed wage withholding $\tau=0.20$ matches the illustration's 0.80 net-cash wage fraction.

ASSUMPTIONS / INTERPRETATION

Only this direct tax feedback is included. VAT, profits, economic behaviour and other tax offsets are excluded; it is not a complete net-budget forecast.

E18 Parameter and ranking sensitivity

EXECUTED FINITE SCENARIO RANGE

$$D_{p,L} = \min_{\theta \in \Theta} D_p(\theta); D_{p,U} = \max_{\theta \in \Theta} D_p(\theta) \tag{E18a}$$

$$\Delta D_{p,q}(\theta) = D_p(\theta) - D_q(\theta) \tag{E18b}$$

Θ contains 729 common parameter combinations. Each is applied to four portfolios, producing 2,916 results.

ASSUMPTIONS / INTERPRETATION

Ranges cover imposed combinations, not statistical confidence or probability. Pairwise differences use the same parameters; changing signs defeats a universal ranking.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Timing and effective capital

Variables, assumptions and executable outputs accompany every numerical method.

E19 Implementation and timing

EXECUTED CONDITIONAL QUARTER PATH

$$D_{j,q} = X_j k_j a_{j,q} \tag{E19a}$$

$$\sum_{q=1}^3 a_{j,q} = 1 \tag{E19b}$$

a is the assumed share realised in each of three quarters. Ultimate gross reductions are equal; first-quarter cash savings need not be.

ASSUMPTIONS / INTERPRETATION

Profiles are not estimated impulse responses. A delayed payment and a cancelled order cannot be assigned the same real-output meaning.

E20 Foregone effective capital stock

EXECUTED CONDITIONAL STOCK PATH

$$\text{Loss}K_t = e X_k (1 - \delta)^{t-L}, \text{ for } t \geq L \tag{E20a}$$

$$\text{Loss}K_t = 0, \text{ for } t < L \tag{E20b}$$

e is 0.40, 0.60 or 0.80; $\delta=5\%$; L is a 0-, 1- or 2-year commissioning lag; cancelled project outlay is GHS 1 billion.

ASSUMPTIONS / INTERPRETATION

Effective-stock units are model constructs, not GDP losses, Ghana efficiency estimates or investment returns. No productive elasticity is imposed.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Enterprise sales and dated cash

Variables, assumptions and executable outputs accompany every numerical method.

E21 Enterprise revenue exposure

EXECUTED HYPOTHETICAL SALES TEST

$$\Delta \text{Sales}_i / \text{Sales}_{i,0} = \sum_j s_{ij} z_j \tag{E21a}$$

$$\sum_j s_{ij} \leq 1 \tag{E21b}$$

s is the assumed baseline revenue share exposed to each channel; z is an imposed proportional change in that channel's sales. The remainder is held fixed.

ASSUMPTIONS / INTERPRETATION

No firms are sampled. No substitution, price adjustment or demand elasticity is estimated. Enterprise revenues cannot be summed as a national GDP effect.

E22 Dated enterprise cash

EXECUTED SYNTHETIC LEDGER

$$\text{Cash}_t = \text{Cash}_0 + \sum_{u \leq t} (\text{Receipt}_u - \text{Payment}_u) \tag{E22a}$$

$$\text{GovReceipt}^*_i = \text{GovReceipt}_i (1 - \text{cut}) \tag{E22b}$$

Opening cash=GHS 200 thousand; stated customer receipts and three cost payments form a 90-day cohort. Only government receipts are reduced or delayed.

ASSUMPTIONS / INTERPRETATION

Fixed cost plan, no new borrowing or taxes. Same-day payments precede receipts; delayed receipts remain scheduled after the horizon.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Liquidity and operating complements

Variables, assumptions and executable outputs accompany every numerical method.

E23 Facility need and horizon

EXECUTED CONDITIONAL FUNDING TEST

$Bridge = \max(0, - \min_{t \leq 90} Cash_t)$ (E23a)

$EventualCash = Closing_{90} + NetFlows_{after90}$ (E23b)

Bridge is the largest unmet event-date financing requirement, in GHS thousand. Closing cash and eventual cohort cash are reported separately.

ASSUMPTIONS / INTERPRETATION

Negative model cash is not an observed default. A facility has approval, cost and timing conditions not included here.

E24 Operating-input complementarity

EXECUTED SERVICE-CAPACITY ILLUSTRATION

$Capacity = \min(StaffIndex, MaterialsIndex)$ (E24a)

$MaterialsIndex = 100 - CutPercent$ (E24b)

Staff remains at index 100. Materials are assumed indispensable in fixed proportions; their index falls by 0, 10, 20 or 30.

ASSUMPTIONS / INTERPRETATION

A Leontief-style constraint illustrates nonlinearity. It is not an estimate of Ghana service output, optimal staffing or the effect of every procurement cut.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Source precision and switching thresholds

Variables, assumptions and executable outputs accompany every numerical method.

E25 Display-precision sensitivity

EXECUTED ROUNDING ENDPOINTS

$$g_L = (G_1 - h)/(G_0 + h)/[(1 + \pi + h_\pi)(1 + n + h_n)] - 1 \tag{E25a}$$

$$g_U = (G_1 + h)/(G_0 - h)/[(1 + \pi - h_\pi)(1 + n - h_n)] - 1 \tag{E25b}$$

$h=0.5$ GHS million; $h\pi=hn=0.0005$. Rates are fractions before multiplication by 100.

ASSUMPTIONS / INTERPRETATION

Bounds are conditional on nearest-display rounding. They exclude revisions, category-price differences, scope errors and sampling uncertainty.

E26 First-round switching threshold

EXECUTED CONDITIONAL EQUALITY

$$d_k^* = n_w m_w d_w \tag{E26a}$$

$$m_t^* = n_w m_w d_w/d_t \tag{E26b}$$

Thresholds equate a unit capital or household-transfer reduction to the central wage-funded domestic-receipts effect.

ASSUMPTIONS / INTERPRETATION

Equality concerns first-round receipts only. It cannot rank medium-term capital returns, distribution, essential services or legal obligations.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Private investment and H1 detail

Variables, assumptions and executable outputs accompany every numerical method.

E27 Private investment financing capacity

EXECUTED HYPOTHETICAL CAPITAL TEST

$$\text{Funds}^* = \text{Funds0} - \text{Sales0} \times (-g\text{Sales}) \times \text{Margin} \tag{E27a}$$

$$\text{GapK} = \max(0, \text{K0}(1 + \mu \epsilon) - \text{Funds}^*) \tag{E27b}$$

gSales is fractional sales change. Baseline sales GHS 10 m; cash margin 25%; investment funds GHS 1.1 m; planned capex GHS 1 m; import share 50%; FX is unchanged or +20%.

ASSUMPTIONS / INTERPRETATION

Incremental lost cash contribution reduces the pre-specified available funds. Credit is assumed usable; planned investment is not an observed realised response, and no financing multiplier is estimated.

E28 Detailed H1 reconciliation

EXECUTED SOURCE DISAGGREGATION

$$\text{Variance}_j = \text{Outturn}_j - \text{Programme}_j \tag{E28a}$$

$$\text{Residual}_p = \text{Parent}_p - \sum_{j \in p} \text{Child}_j \tag{E28b}$$

Whole-cedi H1 2025 amounts retain the capital, payroll, grant and other-expenditure hierarchies. Ratios divide by the matching H1 programme.

ASSUMPTIONS / INTERPRETATION

Never add a nested child to its parent. Zero recorded outturn on one line does not establish zero activity or cash paid elsewhere.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Execution offsets and published precision

Variables, assumptions and executable outputs accompany every numerical method.

E29 Weighted execution and gross offsets

EXECUTED SOURCE COMPARISON

$$\text{Exec}_{\text{agg}} = 100 \sum_j O_j / \sum_j P_j \tag{E29a}$$

$$\text{NetVariance} = \sum_{v>0} v + \sum_{v<0} v + \rho \tag{E29b}$$

P is the programme, O the provisional outturn and v=O–P. Grant means exclude the zero-programme GILF row; monetary reconciliation retains it.

ASSUMPTIONS / INTERPRETATION

The arithmetic mean of line percentages is not the aggregate rate. Gross overshoots and undershoots can cancel. Source rounding residuals remain.

E30 Published-effect precision and multiplicity

EXECUTED SOURCE RE-EXPRESSION

$$\text{SE}_{\text{approx}} = |\beta_{\text{printed}} / t_{\text{printed}}| \tag{E30a}$$

$$\text{Interval}_{\text{normal}} = \beta_{\text{printed}} \pm 1.959964 \text{SE}_{\text{approx}} \tag{E30b}$$

LEAP estimates and printed t-statistics give approximate normal-reference intervals. Reported p and FDR-adjusted q values are separately transcribed.

ASSUMPTIONS / INTERPRETATION

Not a new regression or author-reported interval. Clustering is inherited; intervals are unadjusted for multiplicity. Differences across waves use the source joint test.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Retention and regional inference

Variables, assumptions and executable outputs accompany every numerical method.

E31 Eligibility, retention and sample units

EXECUTED SOURCE-COUNT DIAGNOSTIC

$$\text{Retention}_g = 100 \text{ Panel}_g / \text{Baseline}_g \tag{E31a}$$

$$\text{ReceiptGap}_t = \text{Beneficiary}_{T,t} - \text{Beneficiary}_{C,t} \tag{E31b}$$

Baseline households total 2,497; three-wave panel 2,141. Receipt percentages are separate simple-mean survey samples, not the pooled outcome rows.

ASSUMPTIONS / INTERPRETATION

No weighting or treatment-on-treated rescaling is manufactured. Attrition IPW is a source method, not a guarantee that unobserved selection is removed.

E32 Regional coefficient reference precision

EXECUTED PUBLISHED-COEFFICIENT CHECK

$$CI_{\text{normal}} = \beta \pm 1.959964 \text{ SE} \tag{E32a}$$

$$CI_{\text{reference}} = \beta \pm t_{13,0.975} \text{ SE} \tag{E32b}$$

β and country-clustered SE are the published WP 26/12 Table 2 entries. $t_{13}=2.160369$ is a reference sensitivity for 14 country clusters.

ASSUMPTIONS / INTERPRETATION

No independent re-estimation or finite-sample correction is claimed. The trimmed-panel N inconsistency and declining KP diagnostics are retained.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Net-target bounds and enterprise adaptation

Variables, assumptions and executable outputs accompany every numerical method.

E33 Matched net target and exact box bounds

EXECUTED CONDITIONAL ROBUSTNESS

$$D_p^*(\theta) = \sum_j w_{pj} k_j(\theta) / (1 - 0.20 w_{pw}) \tag{E33a}$$

$$\min_{\theta \in \text{Box}} \Delta D_{pq}^* = \min_{\theta \in \text{Corners}} \Delta D_{pq}^* \tag{E33b}$$

Each portfolio achieves one GHS bn direct-wage-tax-adjusted saving. Six parameter intervals use the original bounds; net wage fraction is 0.80.

ASSUMPTIONS / INTERPRETATION

For fixed tax and weights, the contrast is affine in each parameter separately. Both extrema occur among 64 corners. This is not a probabilistic or welfare bound.

E34 Adaptation-aware operating cash

EXECUTED SYNTHETIC DATE TEST

$$\text{Payment}_d^* = 550(1 - 0.60 \text{ cut} \times \text{flexibility}) \tag{E34a}$$

$$\text{Receipt}_{d+\text{delay}}^{\text{gov}} = 0.60 \text{ Receipt}_d(1 - \text{cut}) \tag{E34b}$$

GHS-thousand operating payments occur on days 20, 50, 80. Government shares of receipts on days 30, 60, 90 are cut and delayed; private cash is fixed.

ASSUMPTIONS / INTERPRETATION

Flexibility 0, 0.5, 1 applies to foregone new orders, not old unpaid invoices. No observed cost elasticity, labour response or realised investment is estimated.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Recursive bridge financing

Variables, assumptions and executable outputs accompany every numerical method.

E35 Recursive bridge and cohort closure

EXECUTED SYNTHETIC FINANCING

$$C^+_d = C^-_d - \max(0, -C^-_d) r/365 \tag{E35a}$$

$$C_{\text{final}} = 550 - 1200 \text{ cut} + 990 \text{ cut} \times \text{flexibility} - \text{Interest} \tag{E35b}$$

Interest is charged after dated events before the next day; $r=0$ or 0.24 . The horizon extends to the last cohort receipt and excludes an extra final-day charge.

ASSUMPTIONS / INTERPRETATION

Unlimited hypothetical bridge; no fees or credit approval. Original source and nine-case outputs remain frozen. Model balances do not estimate actual business cash.

A CREDIT LIMIT AND ITS COST ARE DISTINCT

The peak negative balance sets the hypothetical bridge limit. Interest also depends on the duration of borrowing and on whether delayed receipts arrive before or after the reporting horizon. All dated cash and interest entries are kept separate.

The recursion adds each overnight charge once. No loan approval, production response or observed financing cost is inferred from this illustration.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Prospective causal research

Variables, assumptions and executable outputs accompany every numerical method.

P01 Composition-specific local projections

PROSPECTIVE ONLY — NOT ESTIMATED

$$Y_{t+h} - Y_{t-1} = \alpha_h + \sum_j \beta_{j,h} \text{Shock}_{j,t} + \Gamma_h Z_{t-1} + u_{t+h} \tag{P01a}$$

Shock_{j,t} requires independent timing and identification (P01b)

Y should be real consumption, sales, investment or output. Shocks distinguish wage, procurement, household-benefit and capital innovations; anticipation is recorded.

ASSUMPTIONS / INTERPRETATION

No original quarterly shock series is constructed here. Instrument relevance does not prove exclusion; common shocks, price conversion and small-sample inference require testing.

P02 Linked household–enterprise evaluation

PROSPECTIVE ONLY — NOT ESTIMATED

$$Y_{i,t} = \alpha_i + \lambda_t + \beta(\text{Exposure}_{i,0} \times \text{Policy}_t) + u_{i,t} \tag{P02a}$$

Exposure is fixed before the intervention (P02b)

Link payment type and dates with consenting household spending, enterprise receipts and project milestones. Keep unsuccessful suppliers and nonrecipients in scope.

ASSUMPTIONS / INTERPRETATION

Parallel trends or justified assignment, spillovers, selection and attrition need design-specific evidence. Fixed effects alone do not identify causality.

Sources: IDER calculations [S10].

Note: Executed accounting and conditional scenarios are not fitted causal estimates. Source-study values are attributed separately.

Five calculations connect source definitions with decision-relevant amounts

Source records and scenario assumptions remain separately labelled.

Table 46. Five calculations connect source definitions with decision-relevant amounts

Calculation	Substitution / result	Interpretation
Real compensation sensitivity	$(78,970 / 67,189) / 1.142 - 1 = 2.920\%$	Annual CPI-adjusted aggregate; not an individual real wage.
Broad-capital crosswalk	$15.313653 - 7.105106 = 8.208547$ GHS bn	Capital embedded in grants; not an extra amount to count twice.
Wage-funded domestic receipts	$0.80 \times 0.65 \times 0.75 = 0.390$	Assumed first-round coefficient; not a GDP multiplier.
Wage-heavy direct-tax rescaling	$1 / (1 - 0.20 \times 0.70) = 1.162791$	Gross reduction needed for GHS 1 bn direct-tax-adjusted saving.
Delayed enterprise receipts	$\max(0, -[-660]) =$ GHS 660 thousand	Synthetic 30-day-delay bridge, before fees; not bank approval.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; IDER calculations [S10].

Note: Calculations use full input precision before display rounding. Exact identities do not establish causal policy effects.

References and source links — 1 of 4

Titles link to primary sources; dates, perimeters and access limitations remain in the source register.

[S01 IMF; Ghanaian authorities | July 2026](#)

Ghana: 2026 Article IV Consultation and Sixth ECF Review, Country Report 26/212

PDF pp. 51–53, Tables 2 and 3b; narrative PDF p. 18; source-specific current and fifth-review columns

[S02 Ministry of Finance, Ghana | July 2025](#)

2025 Mid-Year Fiscal Policy Review

Appendix 2C, PDF p. 88 / printed p. 85: capital sublines, grants, compensation, other expenditure and memorandum capital.

[S03 Luciani, Francesco Saverio; Gordon Newlove Asamoah | 27 May 2026](#)

Government Spending Multipliers in Ghana: A Local Projections Approach

South African Journal of Economics 94(2), e70026; DOI 10.1111/saje.70026; publisher abstract

References and source links — 2 of 4

Titles link to primary sources; dates, perimeters and access limitations remain in the source register.

S04 Abdel-Latif, Hany; Khalil Bechchani; Antonio David; Thibault Lemaire | January 2026

The Fiscal Multipliers Narrative of Sub-Saharan Africa

PDF p. 25 Tables 2–3; pp. 6–7 identification limits; pp. 28–29 alternative AIPW estimand.

S05 UNICEF Ghana | September 2024

Cash Transfers in Ghana: Evidence Overview of LEAP and LEAP 1000 Impacts, 2010–2022

Table 2 and footnote 6; consumption is per adult equivalent. Full evaluation S11 now provides methods, inference and sampling details.

S06 International Monetary Fund | 2014

Government Finance Statistics Manual 2014

Chapters 3 and 6; recording bases, compensation, goods/services, grants, social benefits and consolidation

References and source links — 3 of 4

Titles link to primary sources; dates, perimeters and access limitations remain in the source register.

S07 Batini, Nicoletta; Luc Eyraud; Lorenzo Forni; Anke Weber | 2014

Fiscal Multipliers: Size, Determinants, and Use in Macroeconomic Projections

Technical Notes and Manuals 2014/004; definitions, persistence and context

S08 International Monetary Fund | 2015

Making Public Investment More Efficient

Policy paper; public investment efficiency and investment-management framework

S09 Barrot, Jean-Noël; Ramana Nanda | 2020

The Employment Effects of Faster Payment: Evidence from the Federal Quickpay Reform

Journal of Finance 75(6): 3139–3173; published abstract and design

References and source links — 4 of 4

Titles link to primary sources; dates, perimeters and access limitations remain in the source register.

S10 Institute of Development and Economic Research | 26 September 2026

Fiscal Adjustment and Domestic Demand: Spending-Composition Measurement and Scenario Protocol

Companion analyse.py, validate_extend.py, validation_content.py, refine_final_design.py, finalise_final.py and verify_final_design.py; frozen inputs, outputs, assumptions, independent checks and final-design records.

S11 Ghana LEAP 1000 Evaluation Team; UNICEF Innocenti and ISSER | July 2024

Ghana LEAP 1000 Programme: Seven-year Evaluation Report: Focus on Child Labour

PDF pp. 17–24: design/attrition; pp. 26, 28: operations; p. 33 Table 8; p. 37 Table 11; p. 95 Table A7.

S12 Andrews, Isaiah; James H. Stock; Liyang Sun | 2019

Weak Instruments in Instrumental Variables Regression: Theory and Practice

Annual Review of Economics 11: 727–753; author-hosted abstract on non-homoskedastic and clustered inference.

A credible adjustment should disclose composition, execution and incidence

The fiscal target is necessary; it does not reveal which households, suppliers or services bear the change.

MEASURE THE COMPOSITION	TRACE THE TRANSMISSION	TEST THE DECISION
Separate wages from contributions, household support from public grants, and narrow capital from investment embedded elsewhere. Preserve source status and payment basis.	Household propensities, supplier origin, implementation timing and project quality determine different channels. Our conditional receipts measure must not be renamed a national multiplier.	Use equal gross and clearly defined net targets, stress parameter uncertainty and verify service complements. Release causal language only when the underlying assignment and outcome data support it.

Sources: IMF CR 26/212 [S01]; MoF Mid-Year 2025 [S02]; Luciani & Asamoah (2026) [S03]; IDER calculations [S10].

Note: Independent IDER publication; no national causal estimate, optimal spending plan, forecast probability or institutional endorsement is claimed.

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