INTERNATIONAL MONETARY FUND

Macro-Distributional Implications of VAT Reform Supporting Public Investment in Cabo Verde

Daniel Cunha, Dawit Tessema, and Peter Wankuru

SIP/2026/020

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on January 9, 2026. This paper is also published separately as IMF Country Report No 2026/054.

2026
MAR

SELECTED ISSUES PAPER

© 2026 International Monetary Fund SIP/2026/020

IMF Selected Issues Paper
African Department

Macro-Distributional Implications of VAT Reform Supporting Public Investment in Cabo Verde

Prepared by Daniel Cunha, Dawit Tessema, and Peter Wankuru.

Authorized for distribution by Costas Christou
March 2026

***IMF Selected Issues Papers* are prepared by IMF staff as background documentation for periodic consultations with member countries.** It is based on the information available at the time it was completed on January 9, 2026. This paper is also published separately as IMF Country Report No 2026/054.

ABSTRACT: This paper assesses the macroeconomic and distributional effects of VAT reform to finance public investment in Cabo Verde. The analysis shows that VAT reform can strengthen fiscal space and support growth, but may be regressive without accompanying measures. Targeted transfers can offset distributional impacts, supporting inclusive and sustainable growth.

RECOMMENDED CITATION: Cunha, Daniel, Tessema, Dawit and Wankuru, Peter. International Monetary Fund. African Dept. "Cabo Verde: Selected Issues, *Macro-Distributional Implications of VAT Reform Supporting Public Investment in Cabo Verde*", (2026).

JEL Classification Numbers:	**H21** (Taxation and Subsidies) **H54** (Infrastructure; Public Investment) **O23** (Fiscal Policy; Growth)
Keywords:	Cabo Verde; Central bank policy rate; Econometric models; Interest rate policy; Long term interest rates; Monetary transmission mechanism
Author's E-Mail Address:	dcunha@imf.org, dtessema@imf.org, pwankuru@imf.org

SELECTED ISSUES PAPERS

Macro-Distributional Implications of VAT Reform Supporting Public Investment in Cabo Verde

Cabo Verde

Daniel Cunha, Dawit Tessema, and Peter Wankuru

INTERNATIONAL MONETARY FUND

CABO VERDE

SELECTED ISSUES

January 09, 2026

Approved By
The African Department

Prepared by Daniel Cunha, Dawit Tessema, and Peter Wankuru

CONTENTS

MACRO-DISTRIBUTIONAL IMPLICATIONS OF VAT REFORM SUPPORTING PUBLIC INVESTMENT IN CABO VERDE 2
A. Introduction 2
B. Policy Simulations 6
C. The Baseline Scenario: VAT Base-expansion 6
D. Upside Scenario: Removal of all Indirect Tax Exemptions 7
E. Downside Scenario: Underperformance of VAT Base-expansion 9
F. Scenario Comparisons – Macroeconomic Outcomes 10
G. scenario Comparisons – Poverty & Distributional outcomes 11
H. Conclusion 14
References 16

TABLES
1. Policy Assumptions in the Simulations 3
2. Key Results from the Simulations 5
3. Cash transfers under Baseline Scenario 7
4. Cash transfers under Upside Scenario 8

MACRO-DISTRIBUTIONAL IMPLICATIONS OF VAT REFORM SUPPORTING PUBLIC INVESTMENT IN CABO VERDE

This paper examines the macroeconomic and distributional implications of VAT reform in Cabo Verde, focusing on a realistic baseline scenario in which streamlining VAT exemptions generates fiscal space of about 1.2 percent of GDP while the VAT rate remains unchanged. Using a calibrated structural macroeconomic model with segmented labor markets and endogenous formalization, the analysis shows that this reform is sufficient to finance a sustained scaling up of public investment in infrastructure and education, raise potential output, and support gradual formal sector job creation, despite modest short term consumption adjustment. Over the medium to long run, productivity gains strengthen revenue mobilization and allow targeted cash transfers to be introduced and scaled up to about 1.8 percent of GDP at the steady state. Aggregate consumption converges to a level only one percentage point below the upside reform path, while inequality and poverty decline significantly, with the Gini coefficient falling to 0.378 and the poverty headcount dropping below 2 percent.

A. Introduction

1. Cabo Verde's past rapid economic growth slowed in part due to frequent shocks. Between 1993 and 2007, growth averaged 7.4 percent per year, and real per capita income increased 3-fold (from US$978.8 in 1993 to US$3,005 in 2007). This strong growth was upended by large exogenous shocks, including the Global Financial Crisis, Eurozone sovereign debt crisis, and COVID-19. Growth contracted by 1.2 percent in 2008 and averaged 3.5 percent per year over the period 2009 to 2019 and in 2020, contracted by nearly 15 percent due to the pandemic. These crises led to a large collapse in tourism, affecting private sector investment. In addition, limited absorption capacity and sub-optimal investment choices undermined the efficiency of public investment, lowering the country's growth trajectory (Annex Figure A5).

2. Addressing infrastructure gaps and human capital development is central to Cabo Verde's development agenda. Infrastructure is crucial to increasing the productivity of the private sector and restoring dynamism in the tourism sector. A 5-year Strategic Plan for Sustainable Development-PEDSII (2022-26) seeks to develop internal land, sea, air, and digital connectivity; harness the demographic dividends through social development; establish an effective state; and integrate with the world economy.

3. Investment in human capital, particularly education, has been strong and outcomes are positive. Education spending has averaged around 5.6 percent of GDP, which is higher than the median emerging market economy (with 4 percent of GDP). PEDS II highlights the strength of CPV's education with very positive outcomes in terms of literacy level (90 percent of the population), secondary and tertiary education completion rates. Between 2006 and 2020, secondary school completion rate averaged 75.5 percent per year, compared to 88 percent per year for the median emerging market economy. The remaining gaps include eliminating

inequities in access to education for some groups, reforming the education system to promote greater relevance, quality, and quantity of human resources.

4. Cabo Verde is at a critical juncture on its development trajectory. After a sharp rebound post COVID, growth slowed and stabilized around 4.9 percent, which is below its historical trend. While the debt stock decreased to 110 percent of GDP in 2024 (from 148.5 percent in 2021), debt services absorb a significant share of revenue, and the share of rigid recurrent spending was boosted by COVID-19. Financing needs for critical physical and human capital investments, is estimated at around 1.5 percent of GDP per year. Revenue mobilization is strong but there is room to expand the taxbase further, through reduction of exemptions. The resulting resources could be deployed to boost public investment.

5. This paper employs a structural macroeconomic model to evaluate the macro-distributional trade-offs associated with phasing out VAT exemptions and using the resulting fiscal space to scale up public investment. The model provides insights that can aid policy maker's decisions around creation of fiscal space for needed public investment, and supporting the vulnerable population through mitigating cash transfers, in the short term, and assessing the potential of public investment, over the medium and long-run, in raising potential real GDP growth, creating high quality jobs, and tackling income inequality.

Table 1. Cabo Verde: Policy Assumptions in the Simulations

Item	Upside Scenario	Baseline	Downside Scenario
VAT policy and realized fiscal space	The authorities eliminate all indirect tax exemptions. Realized fiscal space equals 4 percent of 2024 GDP. The VAT rate remains 15 percent.	The authorities streamline exemptions. Realized fiscal space equals 1.2 percent of 2024 GDP. The VAT rate remains 15 percent.	Administrative and political frictions reduce realized fiscal space to 0.6 percent of 2024 GDP. The VAT rate remains 15 percent.
Public investment scale-up	The authorities increase infrastructure investment by 1.5 percentage points of GDP and education investment by 0.5 percentage points of GDP relative to the 2024 baseline.	The authorities maintain the same investment path as in the upside scenario.	The authorities maintain the same investment path despite weaker revenue.
Grants assumption in the medium term	Grant inflows: 1.0 percent of GDP.	Grant inflows: 0.8 percent of GDP.	Grant inflows: 0.8 percent of GDP.

Table 1. Cabo Verde: Policy Assumptions in the Simulations (Concluded)			
Item	**Upside Scenario**	**Baseline**	**Downside Scenario**
Financing mix	The authorities use savings from base broadening and grants and rely on concessional borrowing during the medium term.	The authorities use the same mix of savings and concessional borrowing.	The authorities use the same mix of savings and concessional borrowing under tighter fiscal space.
Compensatory cash transfers: design and pace	The authorities target informal households, which comprise 60 percent of the population. They back-load transfers. Average transfers during years 1 to 5 equal 2.3 percent of GDP. Transfers converge to 4.2 percent of GDP at the steady state, which corresponds to 7 percent of initial per-capita income.	The authorities defer broad transfers until growth dividends materialize. Transfers converge to 1.8 percent of GDP at the steady state, which corresponds to 3 percent of initial per-capita income.	Transfers remain constrained in early years. Targeted transfers peak at 1.6 percent of per-capita income at the steady state.
Other implementation assumptions	The authorities fund operations and maintenance in line with the calibration. They strengthen administration and communications. They keep the VAT rate unchanged.	The authorities follow the same calibration and keep the VAT rate unchanged.	The authorities follow the same calibration. Administrative bottlenecks slow revenue realization.

Notes: The table consolidates VAT policy, investment, grants, financing, and transfer design across scenarios. All figures refer to shares of GDP unless stated otherwise. Upside scenario-removal of all indirect tax exemptions; Baseline- VAT base expansion; while the downside scenario simulates the underperformance of base expansion.
Source: Staff simulations.

Table 2. Cabo Verde. Key Results from the Simulations			
Outcome	**Upside**	**Baseline**	**Downside**
Short-run aggregate consumption (years 1 to 5)	Aggregate consumption increases by 1.1 percent relative to the no-reform path.	Aggregate consumption remains below the Upside path and recovers at a moderate pace.	Aggregate consumption remains subdued for longer under constrained transfers.
Private investment during transition	Private investment declines temporarily and then increases. At the steady state it stands 10.6 percent above the no-reform path.	Private investment follows a similar pattern with a smaller and slower recovery.	Private investment remains weak for a longer period. Crowding-in occurs later.
Long-run aggregate consumption (steady state)	Aggregate consumption stands 12.6 percent above the no-reform path.	Aggregate consumption stands 1 percentage point below the Upside scenario.	Aggregate consumption remains below the Baseline scenario. Convergence proceeds more slowly.
Transfers feasible at the steady state (targeted)	Targeted transfers equal 4.2 percent of GDP, which corresponds to 7 percent of initial per-capita income.	Targeted transfers equal 1.8 percent of GDP, which corresponds to 3 percent of initial per-capita income.	Targeted transfers peak at 1.6 percent of per-capita income.
Labor-market dynamics	Formalization accelerates and wages increase earlier.	Formal hiring proceeds more slowly despite the same public investment path.	Labor reallocation remains sluggish and unemployment improves later.
Fiscal stance and VAT rate	Debt stabilizes while the VAT rate remains at 15 percent. The authorities rely on concessional financing in the medium term.	The investment scale-up remains feasible while the VAT rate remains at 15 percent.	The VAT rate remains at 15 percent. Tighter fiscal space requires sharper prioritization.
Distributional outcomes at the steady state	The Gini coefficient declines to 0.378. The poverty headcount declines to 0.5 percent of the population.	The Gini coefficient declines to 0.378. The poverty headcount declines to 1.9 percent of the population.	The Gini coefficient declines to 0.378. The poverty headcount declines to 2.3 percent of the population.

Notes: Results report changes relative to the no-reform path unless stated. Distributional metrics refer to steady-state outcomes derived from growth-incidence curves.
Source: Staff simulations.

B. Policy Simulations

6. Government revenue in Cabo Verde has expanded to about 20 percent of GDP, positioning it favorably compared to EM peers. Despite this, indirect tax exemptions (including VAT, customs and excise) remain high at 4 percent of GDP and are regressive.[1] Specifically, the top consumption quintile receives CVE 1.55 billion (about 0.8 percent of GDP) in indirect transfers through VAT exemptions, over five times more than the bottom quintile.[2] The disparity is even more evident in health and education, where the top quintile receives 11 times and 7 times more in VAT exemptions, respectively. The Fund is providing technical assistance in support of the authorities' VAT reforms, with a revised VAT law under review. Concurrently, public investment has sharply declined and reversing it should boost growth. Utilizing the Debt Investment and Growth (DIG-Labor) model,[3] calibrated to Cabo Verde's economic context, the analysis explores scenarios where additional revenue from removing VAT exemptions could improve public investment and its macro-distributional effects.

C. The Baseline Scenario: VAT Base-expansion

7. IMF TA and the World Bank's Public Finance Review (PFR) indicate that effectively streamlining VAT exemptions in Cabo Verde results in revenue gains of 1-1.5 percent of GDP. The baseline contrasts these revenue gains with an upside scenario that captures the broader potential of 4 percent GDP fiscal space achievable by eliminating all indirect tax exemptions noting that challenges in tax effort, compliance, and administrative capacity can limit near-term gains. Underperformance in personal income tax (PIT) collections, partly due to tax arbitrage between PIT and corporate income tax (CIT) rates, highlights one such structural barrier to revenue growth. The baseline scenario assesses the implications of achieving a median yield of 1.2 percent of GDP in fiscal space from VAT exemptions along with a modest reduction in grants from about 1 percent to 0.8 percent of GDP, compared to an upside scenario where all indirect tax exemptions are removed.

8. Over the long term, final consumption expands as growth dividends from public investment organically finance cash transfers through increased fiscal revenues. The fiscal space generated from removal of exemptions remains sufficient to finance the scaling up of public investment, even with marginal reduction in grants. However, in the short term, the absence of additional resources to offset the elimination of VAT exemptions reduces final consumption relative to the upside scenario (Figure 1, Figure A2). While consumption growth recovers at a moderate pace in the medium-to-long term, it underperforms the upside scenario. Across steady states,

[1] IMF (2023)

[2] IMF (2023)

[3] Buffie et. al. (2020), see Annex for a description of the model.

cumulative growth in aggregate consumption in the baseline scenario is 1 percentage point lower than the upside scenario.

Table 3. Cabo Verde: Cash Transfers under Baseline Scenario

	Targeted (Informal Sector)		Universal coverage	
Year	Cash Transfers (US$/Month)	Share of initial per-capita income (%)	Cash Transfers (US$/Month)	Share of initial per-capita income (%)
1 - 5	0.77	0.2	0.46	0.1
6 - 10	2.69	0.7	1.61	0.4
11 - 15	4.27	1.2	2.55	0.7
16 - 20	5.91	1.6	3.53	0.9
21 - 25	7.13	1.9	4.26	1.1
Steady state	11.04	3.0	6.60	1.8

Note: Staff computations. Monthly cash transfers to individuals are computed as $(\mathcal{T}_t^y \times y_o)/12 \times (\phi N_o(1+g^n))$. The numerator and denominator represent total cash transfers and the annual number of recipients. Total cash transfers as a share of GDP $(\mathcal{T}_t^y)$ from simulated scenarios are multiplied by initial GDP (y_o). The share of the targeted group is represented by $\phi \in (0,1)$. For informal sector targeting, $\phi = 0.6$ or 60 percent of the population. Universal coverage implies $\phi = 1$. $N_o(1+g^n)$ represents the initial population size N_o and its growth over time g^n, where $g^n = 0.005$.

9. Medium-term compensatory cash transfers are infeasible under this scenario, but sustained public investment will enable their eventual introduction as the economy expands. While the fiscal space generated from removing exemptions finances the planned scaling up of public investment in infrastructure and education, it proves insufficient to fund cash transfers offsetting diminished consumption in the medium term (Table 1). However, productivity gains from this investment will, over the long run, improve revenue mobilization. This creates fiscal space to introduce targeted cash transfers to informal sector participants. Across steady states, these transfers will reach 3 percent of per-capita income (1.8 percent of GDP in aggregate) for low-income groups.

D. Upside Scenario: Removal of all Indirect Tax Exemptions

10. In the upside scenario, projected base expansion immediately and permanently increases the tax base by 4 percent of 2024 GDP. The authorities undertake a modest expansion of public investment in infrastructure and education, with each receiving an additional 1.5 percent and 0.5 percent of 2024 GDP, respectively (Figure A3). In the short to medium term, the authorities leverage savings from removal of regressive indirect tax exemptions to finance this investment scaling up without both immediate fiscal strain and in line with the fiscal adjustment under the Fund-supported program. This strategy balances needed fiscal adjustment to bring down debt vulnerabilities and support consumption and investment in the medium term.

11. Beyond the medium term, the authorities continue to advance the removal of exemptions to maintain investment levels and manage debt dynamics. It is also assumed that annual grants of 1 percent of GDP will continue past the medium term in the upside scenario. The

increase in public investment will continue to be financed by concessional loans during the medium term. This ensures continued focus on public investment without exerting immediate fiscal pressure. The base expansion reduces the need for significant cuts to government transfers and increases in indirect tax rates, thereby softening the impact of fiscal adjustment on aggregate demand.

12. Financing public investment growth through base expansion provides both medium and long-term macroeconomic benefits. Specifically, aggregate consumption is projected to increase by 1.1 percent over the first five years and by 12.6 percent in the long run across steady states (see Figures 1 and A3). Although there is a temporary crowding-out of private investment, it ultimately increases by 10.6 percent in the long run, contributing to gains in aggregate consumption. The temporary dip in private investment stems from immediate economic friction. When exemptions are removed, production costs for affected firms rise, while low-income households face higher prices, squeezing their spending power. This combination of tighter profit margins and weaker consumer demand forces firms to temporarily pause investment plans.

13. The temporary decline in private investment gradually reverses as initial shocks give way to deeper structural benefits. Sustained public investment, funded by the broader tax base, slowly lifts the economy's potential. Upgrades in infrastructure improve operational efficiency for firms, while increased education spending boosts productivity among low-skilled workers and raises returns on private capital. The base expansion itself encourages informal businesses to formalize overtime, shifting workers toward higher-productivity jobs[4] (see panel 6, Figure A3). As wages rise in this expanding formal sector (see panel 5, Figure A2), consumer demand recovers and reinforces business confidence. This dynamic transforms the initial investment slump into a sustained upswing, allowing firms to not only recover but to invest.

Table 4. Cabo Verde: Cash Transfers under Upside Scenario

	Targeted (Informal Sector)		Universal coverage	
Year	Cash Transfers (US$/Month)	Share of initial per-capita income (%)	Cash Transfers (US$/Month)	Share of initial per-capita income (%)
1 - 5	14.39	3.9	8.60	2.3
6 - 10	16.37	4.4	9.78	2.6
11 - 15	18.10	4.9	10.82	2.9
16 - 20	19.93	5.3	11.91	3.2
21 - 25	21.33	5.7	12.75	3.4
Steady state	26.17	7.0	15.64	4.2

Note: Staff computations. Monthly cash transfers to individuals are computed as $(\mathcal{T}_t^y \times y_o)/12 \times (\phi N_o(1+g^n))$. The numerator and denominator represent total cash transfers and the annual number of recipients. Total cash transfers as a share of GDP $(\mathcal{T}_t^y)$ from simulated scenarios are multiplied by initial GDP (y_o). The share of the targeted group is represented by $\phi \in (0,1)$. For informal sector targeting, $\phi = 0.6$ or 60 percent of the population. Universal coverage implies $\phi = 1$. $N_o(1+g^n)$ represents the initial population size N_o and its growth over time g^n, where $g^n = 0.005$.

[4] This also lines up with the authorities' national strategy (2022–2026), which aims to formalize the economy.

14. To mitigate the welfare impact of indirect tax base expansion, cash transfers equivalent to 2.3 percent of GDP are needed in the upside scenario in the short term (1-5 years). Table 2 presents the size of these transfers under different [time horizons], targeting informal sector participants (roughly 60 percent of the population) or providing universal coverage. To manage public debt dynamics and near-term macro-fiscal risks, the rollout of these transfers is paced. Even under conservative assumptions of no absorptive capacity and no public investment inefficiencies, transfers would need to be limited to an average of 2.3 percent of GDP annually over the first five years. This pacing helps prevent early widening of primary deficits when debt service burdens are highest, mitigates real exchange rate appreciation that could undermine tradables competitiveness during investment scaling-up, and accommodates frontloaded infrastructure maintenance costs. Backloading transfers, as shown in Table 2, leverages endogenous fiscal space created through infrastructure-driven tax base expansion that adds to firm output, productivity gains among low-skill labor that raise direct tax receipts, and debt-to-GDP declines from faster nominal growth. At the new steady state, targeted transfers to informal households converge to 4.2 percent of GDP (about 7 percent of per capita income), sustainably financed by higher potential output.

15. While Table 2 illustrates the scale of cash transfers under targeted and universal coverage schemes, it serves purely as an analytical exposition. The ultimate selection of benefit regimes depends on Cabo Verde's unique social compact and fiscal constraints. The Fund's experience in other peer countries reveal contextual trade-offs: universal programs may be consistent with social cohesion goals but risk fiscal sustainability if scaled beyond revenue capacity [5] (IMF, 2017a), while targeted approaches deliver higher poverty reduction per fiscal outlay [6] (IMF, 2017b) but demand robust exclusion mechanisms to minimize leakages. Neither model is inherently superior, and the choice hinges on national priorities, whether maximizing immediate coverage despite fiscal trade-offs or optimizing long-term efficiency through progressively improved targeting.

E. Downside Scenario: Underperformance of VAT Base-expansion

16. Emerging market economies like Cabo Verde encounter difficulties in increasing revenue beyond initial gains.[7] While technical assessments estimated that eliminating all VAT exemptions could potentially expand fiscal space by about 1-1.5 percent of GDP, achieving this potential could be hindered by implementation challenges, including limited administrative capacity

[5] In Iran, better targeting of cash transfers by removing the richest 20 percent of households from the beneficiary list created space to raise the cash transfer to the poorest households by 1 percent of GDP.

[6] In Mongolia, the authorities agreed to target their flagship Child Money Program to the poorest 40% of households instead of giving it to all children. The savings from better targeting this benefit were reallocated to strengthen other support for the most vulnerable.

[7] Klemm and Van Parys (2012); Besley and Persson (2013)

and the complexity of incentive reforms, which may result in tax efforts falling short. The downside scenario assumes that revenue yield from the VAT reform is around 0.6 percent of GDP, due to administrative bottlenecks and political economy frictions.

17. While the limited revenue mobilization does not limit the government's ability to scale up public investment, it reduces its ability to provide compensatory transfers, especially in the early years of reform (see Figure A4). In this downside scenario, the government maintains its commitment to public investment despite underwhelming revenue gains from VAT reform. Unlike the baseline, where both investment and transfers expand in tandem, here the adjustment burden falls on social transfers. This strategic prioritization reflects a policy choice to protect long-term growth drivers, such as infrastructure and education, even at the cost of short-term transfers. Public investment remains on track, supporting modest improvements in productivity and formal sector output over time. However, the limited fiscal space forces a sharp contraction in transfers, especially in the early years. Aggregate consumption and private investment remain subdued as a result.

18. Targeted transfers to informal sector workers are delayed and peak, across steady state at just 1.6 percent of per capita income, about half the baseline level. This retrenchment undermines the redistributive potential of the reform and delays recovery for vulnerable groups. The absence of early transfers also weakens demand-side stimulus, slowing formal sector expansion and labor market absorption. Unemployment and the reallocation of labor from informal to formal sectors remain sluggish without early transfers, as formal firms face weak demand, discouraging hiring and investment.

F. Scenario Comparisons – Macroeconomic Outcomes

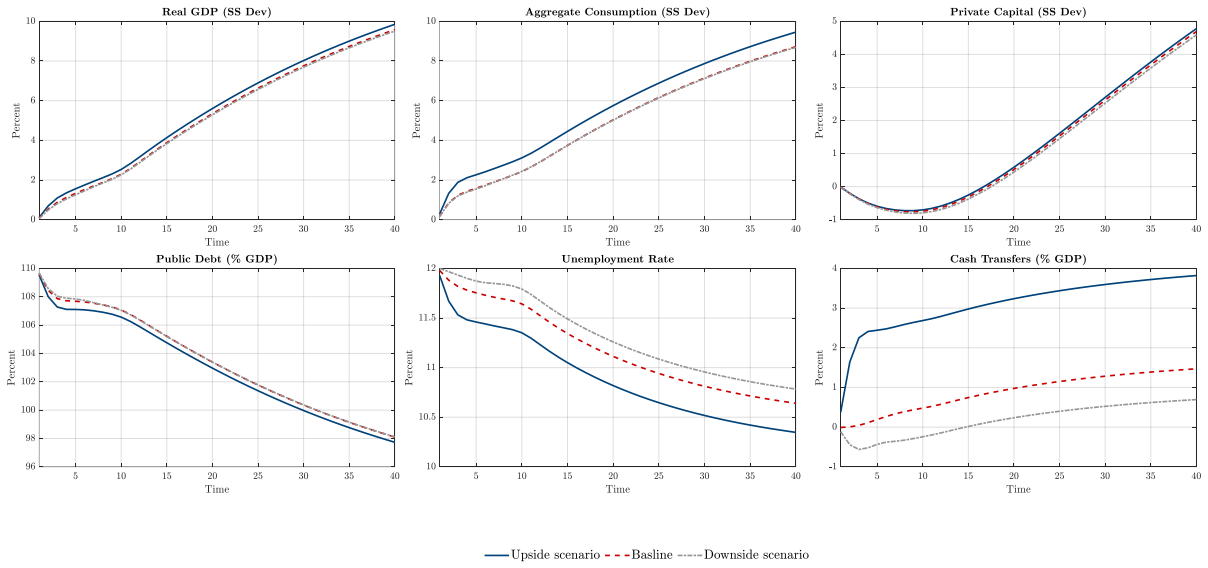
19. Compensatory transfers mitigate public education investment gestation lags and accelerate formal sector labor absorption. The upside scenario's allocation of significant compensatory transfers financed through savings from removal of all indirect tax exemptions boosts household disposable income especially during the early years where there is a gestation lag in productivity returns from education investments. This fiscal support sustains robust demand for formal sector goods, enabling firms to capitalize on efficiency wage mechanisms to expand employment simultaneously with public capital accumulation (see Figures A2 and A3, panels 4 and 6). By contrast, minimal transfers in the baseline and downside scenarios delay demand growth for formal sector goods, lengthening the period before labor markets absorb more productive workers. Notably, identical public infrastructure and education investments yield differing labor market outcomes due to these demand-mediated complementarities. Earlier formal sector hiring growth in the upside scenario amplifies returns to human capital through learning-by doing externalities, absent in the delayed baseline and downside paths.

20. Formal sector demand-side dynamics dictates labor utilization despite similar private investment paths in the two scenarios. While private capital accumulation follows similar paths in both baseline and upside scenarios (see Figure 1), the early demand for formal sector goods in the upside scenario determines faster labor reallocation towards the formal sector. Robust transfers in

the upside support formal sector demand growth and formal output expansion even before education investments deliver productivity improvements of low-skill labor. In the baseline scenario (and even more so in the downside scenario), subdued formal sector demand means, formal firms defer hiring despite rising pool of productive low-skill labor, as slow-demand for formal sector consumption goods suppresses expected returns to labor-augmenting investments. Consequently, identically financed public investments generate weaker formal sector job growth in the alternative scenario due to insufficient demand.

21. Fiscal-growth feedback loops create path-dependent outcomes in the labor market. The upside scenarios head start in formal sector growth and shifts in labor absorption initiates a self-reinforcing fiscal-growth cycle as earlier output expansion boosts tax revenue, funding further transfers that accelerate demand and labor absorption. This virtuous circle sustains higher levels of formal sector employment throughout the transition. In the baseline scenario, sluggish formal sector demand delays revenue mobilization in the medium term, perpetuating low cash transfer allocations and lengthening the phase of suboptimal labor allocation. This path dependence emerges from cumulative gaps in labor reallocation speed, with the upside demand advantage compounding over time due to endogenous fiscal linkages.

Figure 1. Cabo Verde: Scenario Comparison Across Key Variables



Note: Staff computations

G. Scenario Comparisons – Poverty & Distributional outcomes

22. Analysis of the three scenarios reveals that the long-term distributional benefits significantly outweigh short- and medium-term concerns associated with broadening the tax base. Using the 2015 household income and expenditure survey as a benchmark for initial poverty

headcount, Gini coefficient, and consumption share by decile, forward-looking income distributions were backed out by applying simulated GDP and income growth rates of the bottom 60 percent of households through growth-incidence curves (see Annex 1 for methodological note). Across steady states (over the long run), these simulations point to a notable reduction in inequality, with the Gini coefficient declining from 0.423 in 2015 to about 0.378 across all scenarios, and a marked improvement in income levels across the distribution (see Figure 2).

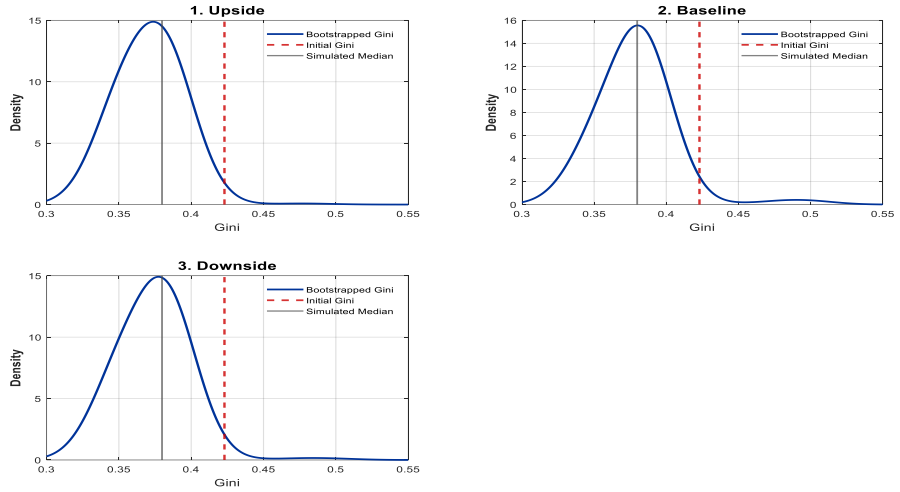
23. In the long run, income gains are widespread. In the baseline scenario, the bottom decile experiences an elevenfold increase in income across steady states, compared to a 3.3-fold rise for the top decile, underscoring that growth is stronger among lower-income groups (see Figure 3). The poverty headcount rate also declines sharply from 14.6 percent in 2015 to 1.9 percent under the baseline scenario, 0.5 percent in the upside scenario, and 2.3 percent in the downside scenario, demonstrating significant poverty reduction regardless of the size of the tax base expansion. Taken together, these results highlight the potential for broad-based and balanced growth, where fiscal reforms and public investment jointly foster efficiency and equity gains over the long run.

24. Medium-term dynamics reveal widening opportunity and moderated inequality. Over the medium term (around ten years), both the upside and baseline scenarios exhibit faster income growth among lower deciles and moderated growth among upper deciles (except the very top). This reflects structural and distributional adjustments as agriculture and informal sector participants are gradually integrated into the tax net, and the proceeds are reinvested in infrastructure and primary education. These measures expand productivity and formal employment opportunities, reducing scarcity rents and wage premiums that were previously concentrated in upper-middle deciles. As skills and opportunities become more widely distributed, income differentials narrow even as overall income levels rise (see Figures A6 and A7).

25. Demand-support measures amplify distributional and macroeconomic resilience. The extension of cash transfers in the medium term to lower-income households, in the upside and less so in the baseline scenarios, sustains domestic demand during the adjustment period, reinforcing consumption linkages through small-scale trade and services, many of which are owned or supplied by higher-income groups. Consequently, inequality declines further, with the Gini coefficient falling from .423 to about .388 in both the upside and baseline scenarios, while the poverty headcount drops to 2.2 percent and 3 percent, respectively. These trends suggest that redistributive fiscal measures and productive spending complement one another in supporting durable growth and social stability.

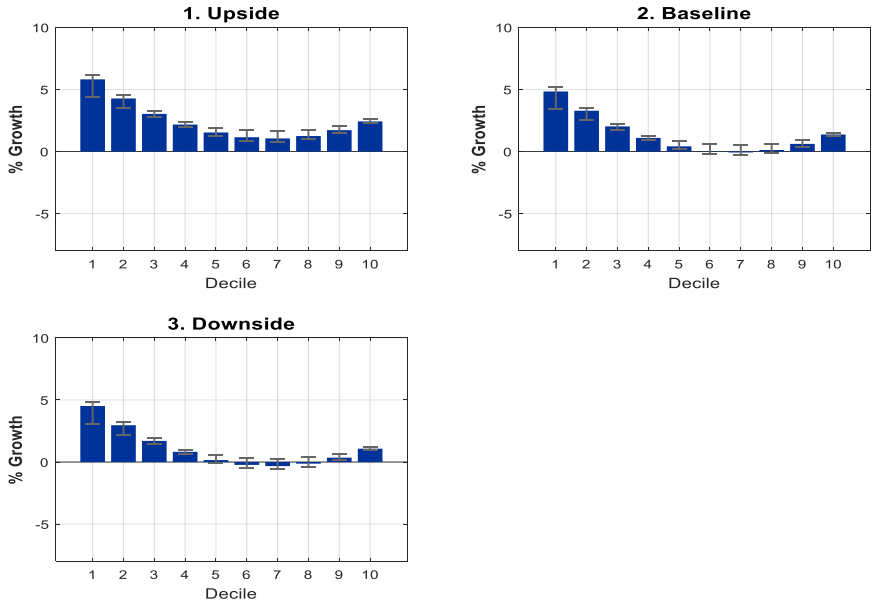
26. Weaker fiscal capacity constrains gains in the downside scenario. Under the downside scenario, limited fiscal space and slower structural transformation hinder the transmission of gains to households. Income growth across deciles is statistically indistinguishable from zero, the Gini coefficient remains around 41, and the poverty headcount stays elevated at roughly 9.9 percent. This outcome means that without sustained revenue mobilization, public investment risks delivering limited benefits, in the medium term, to the poor and weaker long-term convergence in living standards.

Figure 2. Cabo Verde: Change in Gini Across Steady States (Long-run View)



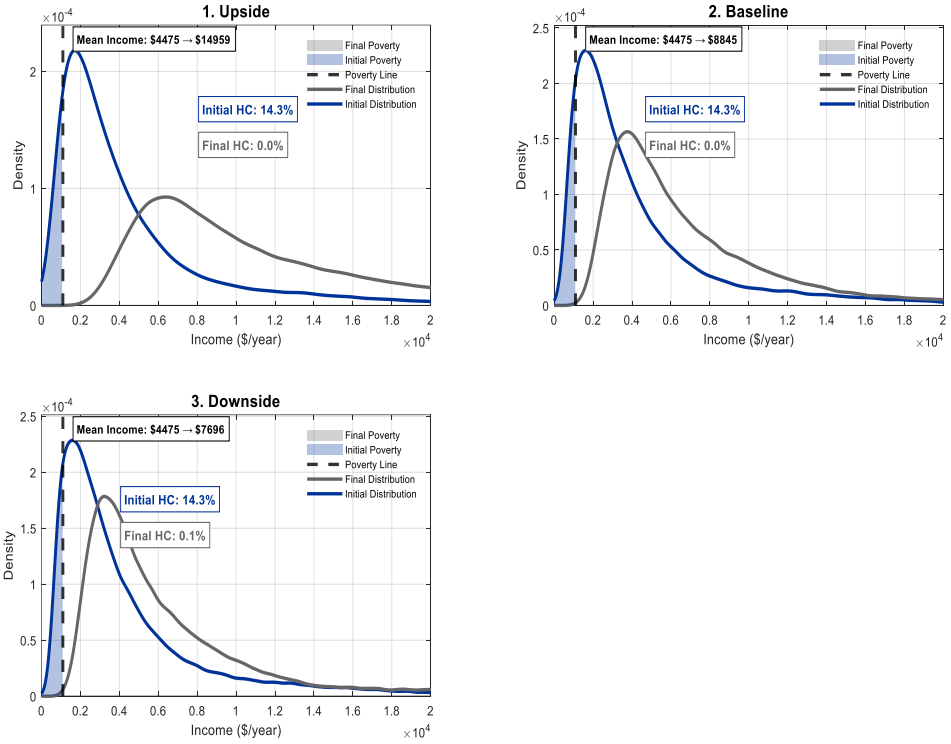
Note: Staff computations

Figure 2. Cabo Verde: Income Growth by Decile Across Steady States



Note: Staff Computations

Figure 3. Cabo Verde: Income Distribution and Poverty Rates Across Steady State



Note: Staff Computations

H. Conclusion

27. This paper uses a structural macroeconomic model to assess the trade-offs involved in phasing out VAT exemptions and reallocating fiscal resources toward public investment. The insights offered by the model can assist Cabo Verde policymaker's decision around creating fiscal space for essential investments, supporting vulnerable populations through targeted cash transfers in the short term, and evaluating how such investment can promote GDP growth, jobs, and reduce income inequality over the medium and long term.

28. Illustrative simulations suggest that broadening the VAT base and increasing investment in high-return infrastructure and education could raise potential output, accelerate formalization, and improve fiscal sustainability. Removing untargeted exemptions will expand the tax base without changing the VAT rate, generating stable revenue to fund these investments. Under the upside scenario, base broadening of 4 percent of 2024 GDP lifts aggregate consumption by 1.1 percent in the first five years and by 12.6 percent in the long run and raises private investment by 10.6 percent at the steady state. Under the baseline scenario, the same investment path yields a weaker near-term demand response and a long-run consumption level that is 1 percentage point below the Upside path. Under the downside scenario, slower revenue gains delay crowding-in and lower macro gains, although the authorities maintain the

investment envelope. Keeping the VAT rate at 15 percent, anchoring grants within the scenario envelope, and relying on concessional financing could help sustain debt stabilization while the growth dividend accrues.

29. Targeted cash transfers are essential to protect real incomes during adjustment periods and to support demand in line with realized fiscal resources. Under the upside scenario, transfers to informal households could be back-loaded and increase gradually, averaging 2.3 percent of GDP in the first 5 years and reaching 4.2 percent of GDP at steady state. The baseline scenario may require delaying broad transfers until revenues improve, ultimately converging to 1.8 percent of GDP at steady state. In the downside scenario, maintaining investment envelope while providing a lean safety net with transfers peaking at 1.6 percent of per-capita income is critical. Strengthening compliance and the social registry will help reduce leakage, promote formalization, and enable scaling-up benefits as revenues increase. All scenarios project long-run distributional gains, with the Gini coefficient declining to 0.378 and poverty head counts falling to 0.5 percent of the population under the upside scenario, 1.9 percent of the under the baseline scenario, and 2.3 percent under the downside scenario.

References

Besley, Timothy J. and Persson, Torsten, 2013. "Taxation and Development," CEPR Discussion Paper No. DP9307.

Buffie, Edward, Luis-Felipe Zanna, Christopher Adam, Lacina Balma, Dawit Tessema, Kangni Kpodar, 2020. "Debt, Investment, and Growth in Developing Countries with Segmented Labor Markets," IMF Working Papers 2020/102, International Monetary Fund.

IMF, 2017a. "Islamic Republic of Iran: Staff Report for the 2016 Article IV Consultation," Country Report No. 2017/062.

IMF, 2017b. "Mongolia: 2017 Article IV Consultation and Request for an Extended Arrangement Under the Extended Fund Facility," Country Report No. 2017/140.

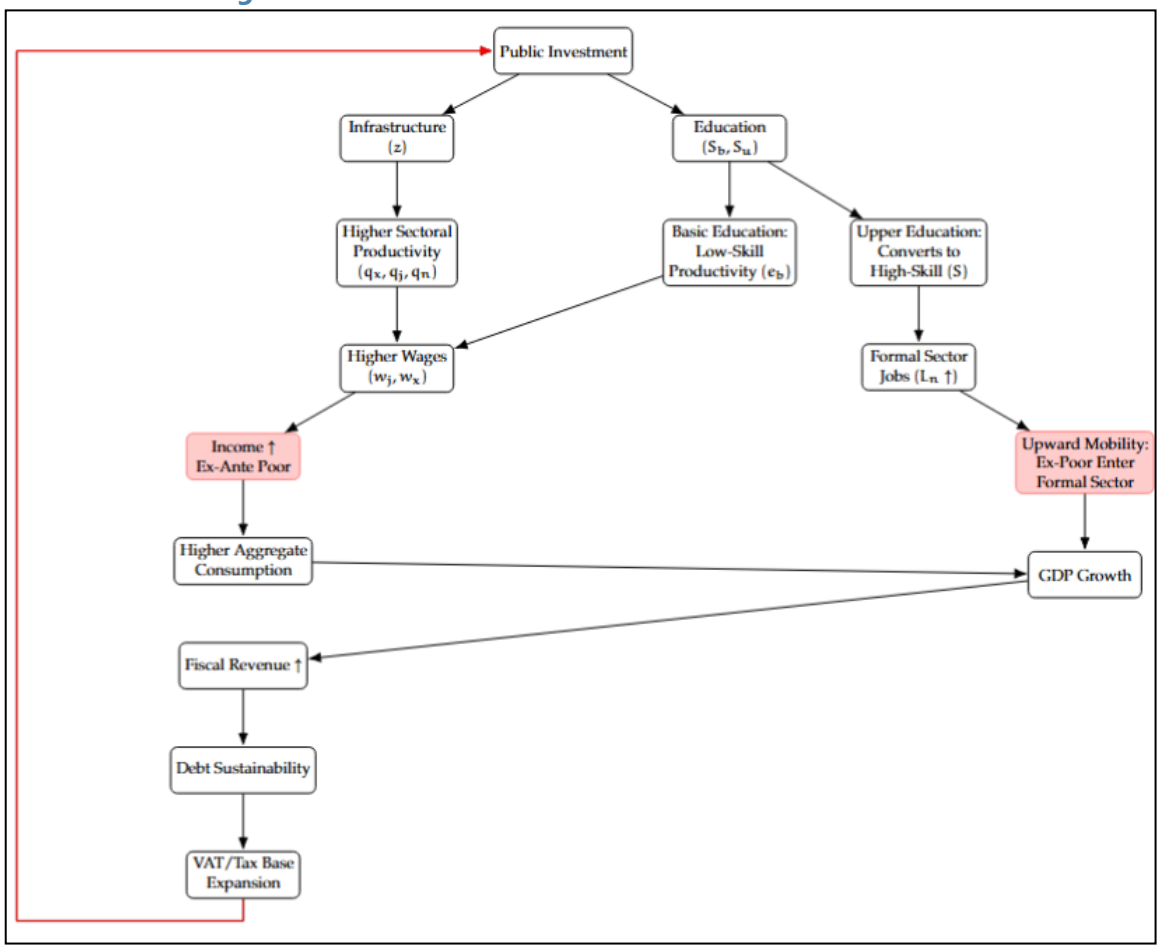
IMF, 2025. "Domestic Revenue Mobilization in WAEMU," WAEMU: Selected Issues, African Department.

Klemm, Alexander and Stefan Parys, 2012. Empirical evidence on the effects of tax incentives," International Tax and Public Finance, vol. 19(3), pages 393-423.

World Bank (2025). "Cabo Verde: Enhancing fiscal sustainability in the face of shocks," World Bank Public Finance Review.

Annex I. Distributional Inference Using Quadratic Growth Incidence Curves

Figure 1. Cabo Verde: Structure of the DIG-Labor Model



Distributional Inference Using Quadratic Growth Incidence Curves

1. In the case of Cabo Verde, detailed current microdata on household incomes and expenditures is unavailable and the most recent National Survey on Household Income and Expenditure (III- IDRF) is from 2015. To make distributional inferences, we use the time series of aggregate growth rates generated from our policy simulations, specifically, (1) the annual growth rate of total income, and (2) the annual growth rate of income of the bottom sixty percent of the population and a single, and (3) a snapshot of the distribution's baseline income shares proxied by consumption shares by decile from the 2015 survey. Our goal is to use these pieces of information to pin down a simple, smooth function $g(p)$ that describes the annual growth rate at each population percentile p. We achieve this by taking a quadratic three-parameter growth-incidence

curve, so that it exactly matches the two average growth rates and a small premium for the very top tail.

$$g(p) = a + bp + cp^2, \qquad p \in [0,1],$$

$g(p)$ represents the implied annual growth rate at each population percentile p. The parameters a, b, and c are determined so that the GIC exactly reproduces two empirically observed averages and a modest top-tail premium:

The quadratic $g(p)$ then must satisfy three conditions:

- **Bottom-x% mean**: Integrating over the poorest x percent, $x \in (0,1)$ must reproduce the annualized income growth rate of the bottom x percent dervied from our simulated series $\{G_t\}_{t=1}^{T}$
$\int g(p)dp = x * [(\prod (1 + G_t)^{\frac{1}{T}} - 1]$
- **Overall growth rate**: Integrating over the entire population must reproduce the economy-wide growth rate derived from the simulated series $\{C_t\}_{t=1}^{T}$
$\int g(p)dp = (\prod (1 + C_t)^{\frac{1}{T}} - 1$
- **Top-tail premium**: We impose a small slope at the x^{th} percentile (consistent with the literature), allowing for a modest deviation (e.g. $\delta = 2\%$) in how much faster or slower incomes grow at the top of the distribution.
$g'(x) = b + 2cx = \delta$

Solving that system yields the unique GIC that is inline with our two aggregate growth rates and the chosen top-tail slope.

$$\int g(p)dp = ax + \frac{1}{2}bx^2 + \frac{1}{3}cx^3$$

With the coefficients in hand, we evaluate $g(p)$ at the ten decile midpoints $p_i = 0.05, 0.15 \ldots, 0.95$, where $g_i = g(p_i)$ which gives us the annual growth rates for each decile. To update the baseline decile shares $s_i^0 = 1$ from IDRF 2015, with $\sum_i s_i^0 = 1$), and recover the full projected distribution after T years, we apply

$$s_i^T \approx s_i^0 (1 + g_i)^T, \qquad \sum s_i^T = 1$$

Finally, to compute the Gini coefficient of these groupped shares, we form the cummulative shares $L_0 = 0, L_i = \sum_{i=1}^{i} s_i^T$ and apply the standard grouped data formulation.

$$G = 1 - \frac{1}{10} \sum (L_{i-1} + L_i)$$

To account for uncertainty in the simulated growth inputs, we embed this entire procedure in a block-bootstrap: we repeatedly resample (with replacement) blocks of the (G_t, C_t) pairs, recompute (a, b, c), decile growth rates, updated shares, and the Gini for each bootstrap replicate, and then report the resulting 5th–95th percentile bands for every decile growth path and for the Gini coefficient.

2. This three-moment approach builds directly on two influential streams of work. Ravallion and Chen (2003) introduced the concept of the Growth Incidence Curves to analyze how growth benefits different percentiles when micro-data panels are missing. Kraay and Van der Weide (2017) demonstrated that fitting a simple parametric Lorenz curve (e.g. log-normal or GB2) to a handful of moments suffices to recover entire distributional dynamics and bounds on mobility. By anchoring on only three aggregate moments plus a baseline survey, our method bridges the gap between the multi-agent macro model and richly detailed distributional forecasts in the context where household survey waves are sparse, or staggered, or non-comparable.

Annex II. Macroeconomic and Distributional Effects of Tax Policy

Figure 1. Cabo Verde: Baseline: Limited Base Expansion (VAT)

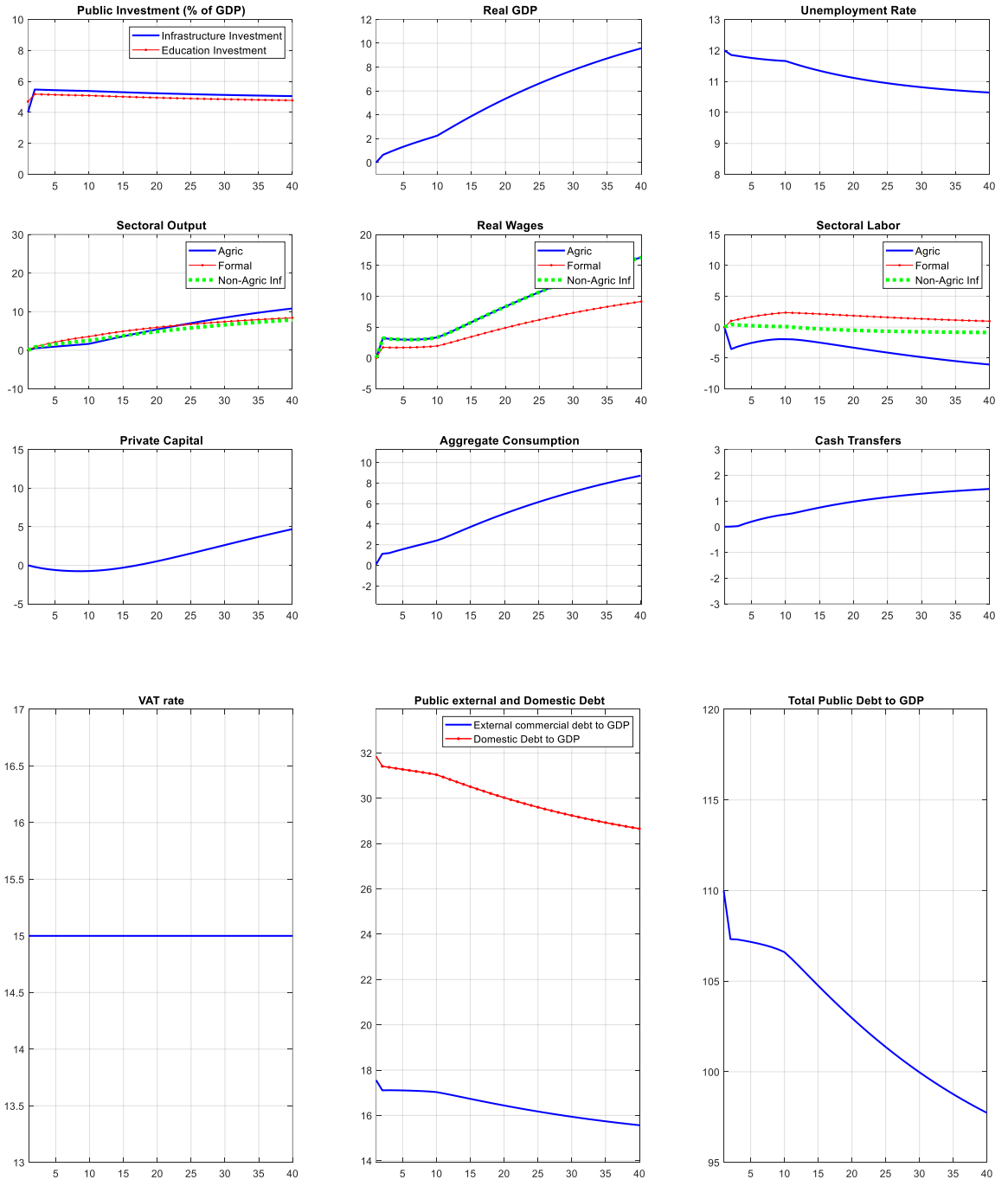
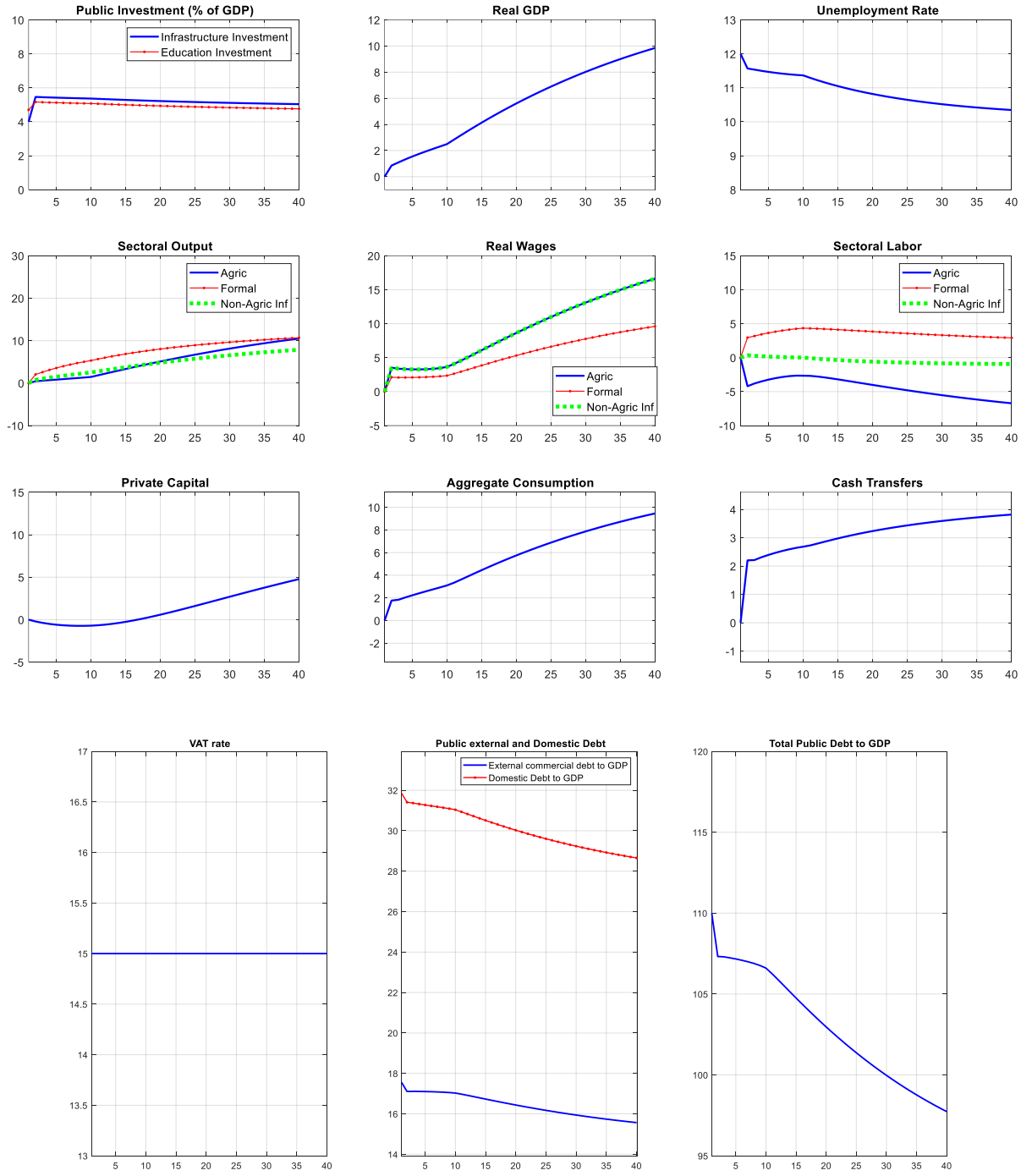
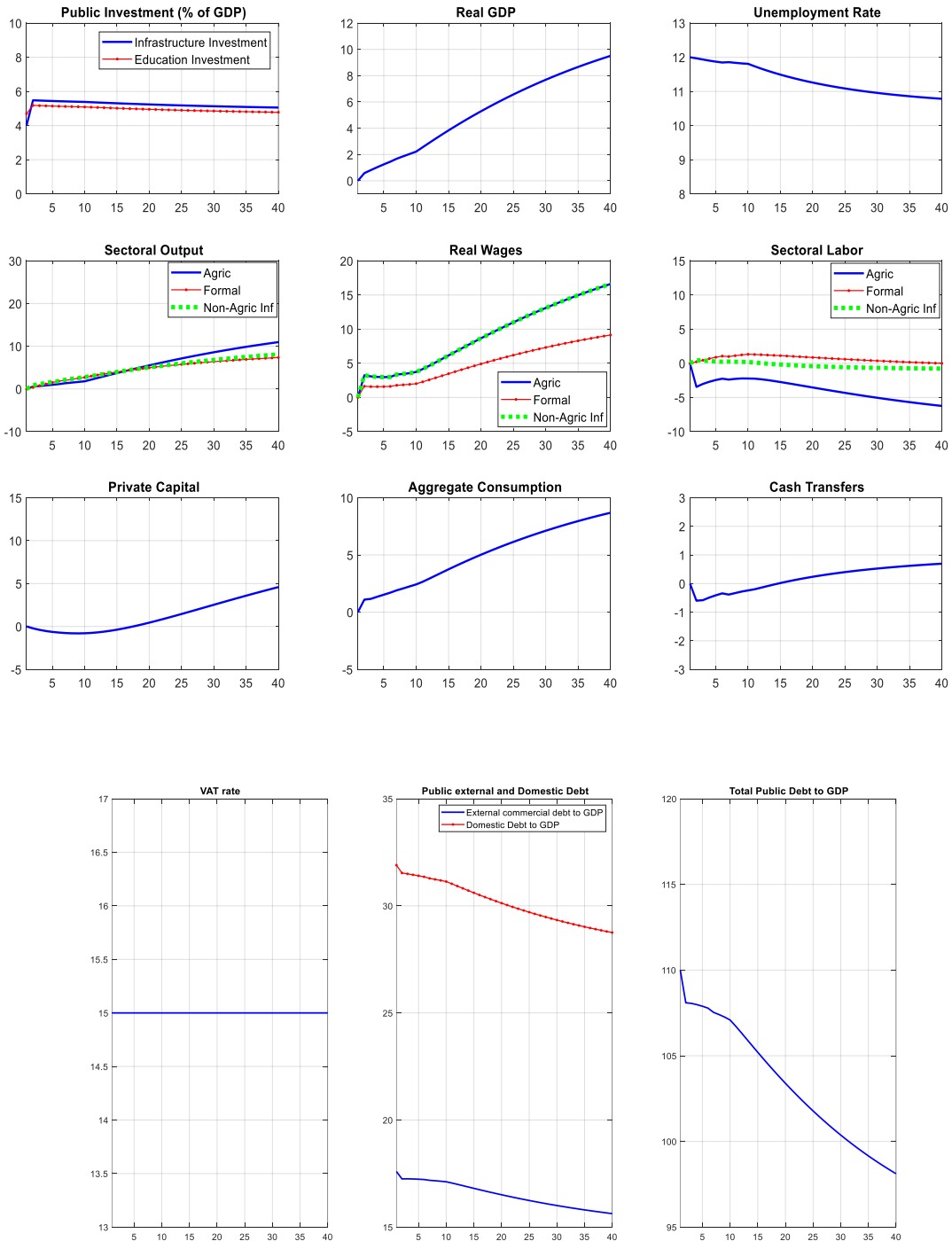


Figure 2. Cabo Verde: Upside Scenario: With Removal of all Indirect Tax Exemptions



Source: Staff computations

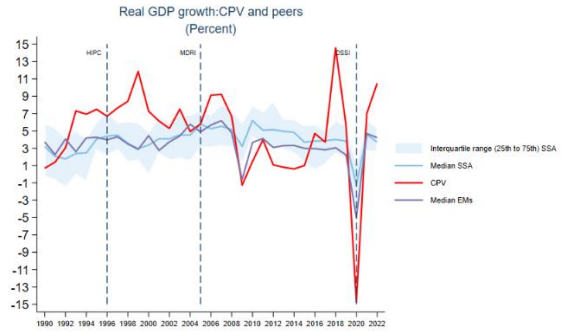
Figure 3. Cabo Verde: Downside Scenario: VAT Base Expansion Underperforms



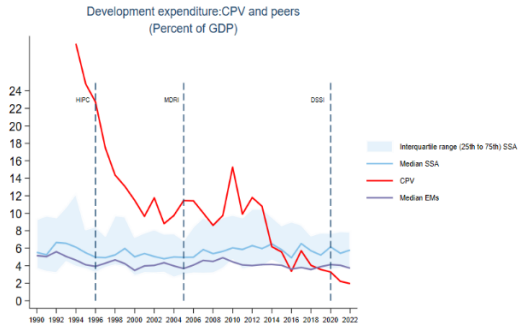
Source: Staff computations

Figure 4. Cabo Verde: Background Charts

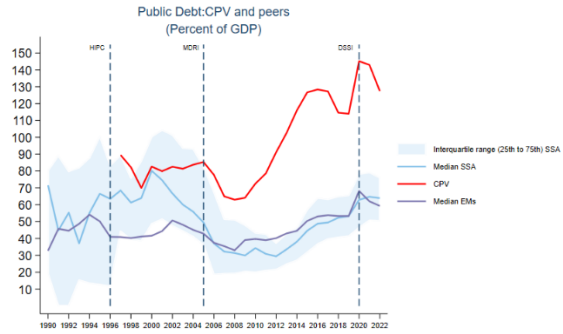
Rapid growth in the past has moderated…



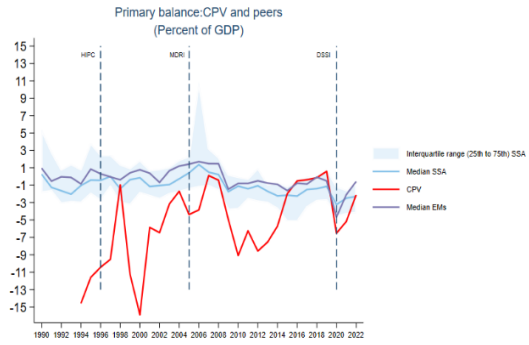
…in line with frequent shocks and slowdown in public investment.



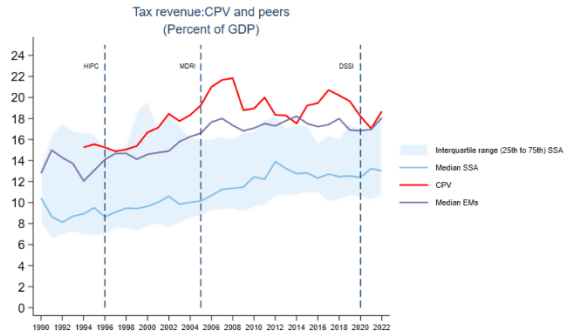
Public debt is decreasing but vulnerabilities remain…



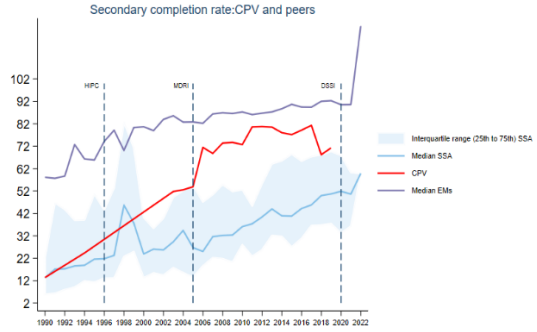
… requiring continued commitment to fiscal adjustment.



Adjustment is supported by strong tax revenue mobilization…

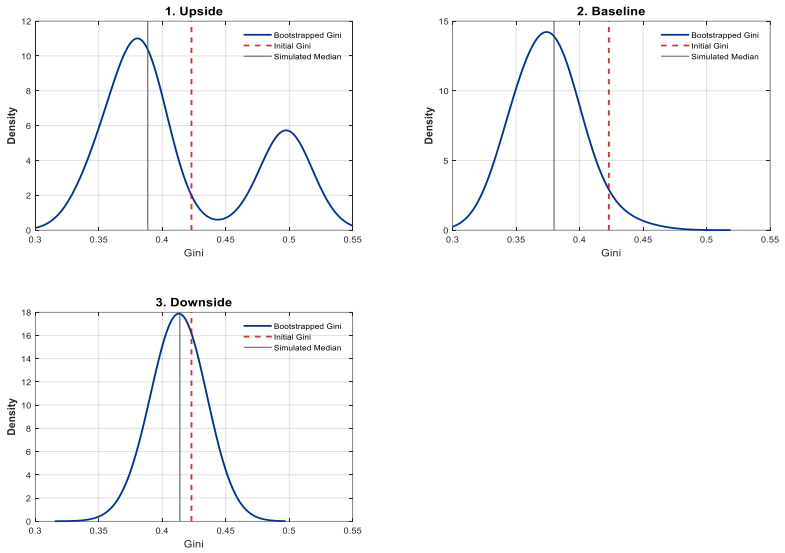


… and can be complemented by efficiency gains.



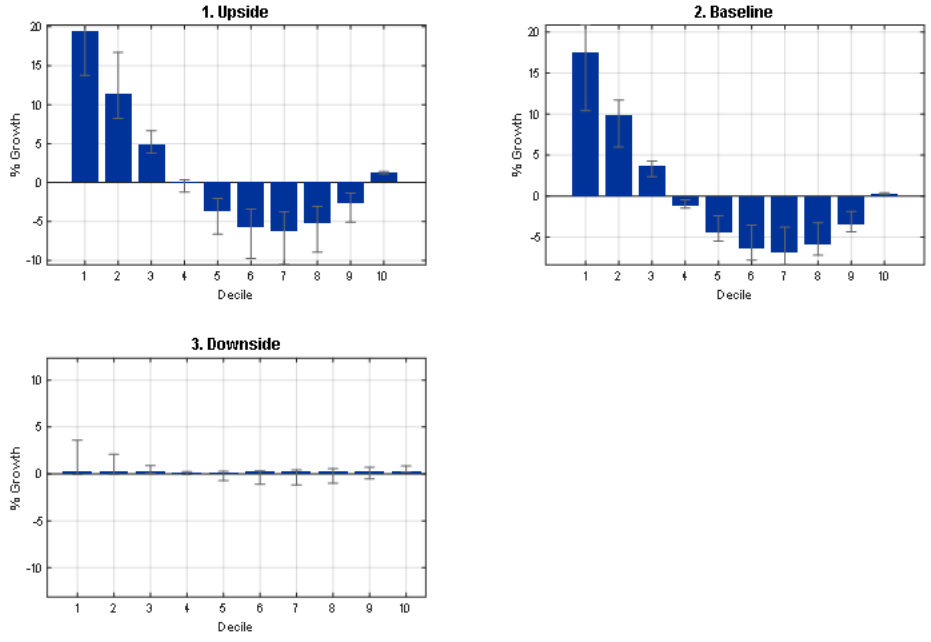
Source: Staff computations

Figure 5. Gini Changes in the Medium-term



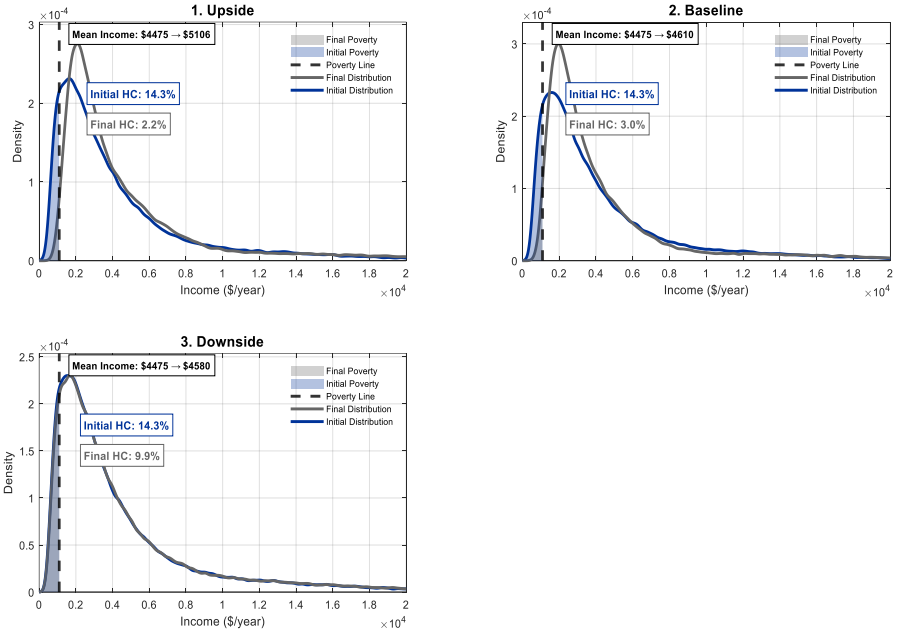
Source: Staff computations

Figure 6. Cabo Verde. Income Growth by Decile in the Medium-term



Source: Staff computations

Figure 7. Cabo Verde. Income Distribution and Poverty Headcount in the Medium-term



Source: Staff computations

Table 1. Cabo Verde. Calibration of Variables/Parameters		
Parameters and Initial Values	**Values**	**Source**
Trend Per capita GDP growth	0.04	Median of the trend component 1981-2024, World Bank
Real interest rate	0.03	Based on T-Bond rates: CVOTELOSI009-OTE3,0625%OT28JUL2031, CVOTELOSH001-OT3%12JUL2029
Real interest rate on external commercial public debt	0.05	Assuming EM Sovereign bond yields are around 8-10% and WEO global inflation 4.2%
Real interest rate on external private debt	0.03	Based on a baseline a blue bond issued in Nov 2023
Cost share of private capital in sector "n=formal sector"	0.15	Estimates based on core parameters
Cost share of private capital in sector "j=informal sector"	0.35	Estimates based on core parameters
Cost share of public capital in sector "n"	0.15	Estimates based on core parameters
Cost share of public capital in sector "j"	0.35	Estimates based on core parameters
Cost share of skilled labor in sector "n"	0.15	Estimates based on core parameters
Cost share of skilled labor in sector "j"	0.35	Estimates based on core parameters
Output elasticity to private capital in sector "x=agriculture sector"	0.60	Estimated using data for CPV from USDA
Output elasticity to private capital in sector "n"	0.40	Estimates based on literature
Output elasticity to private capital in sector "j"	0.20	Estimates based on literature
Output elasticity to skilled labor in sector "x"	0.36	Estimated using data for CPV from USDA
Output elasticity to skilled labor in sector "n"	0.26	Estimates based on literature
Output elasticity to skilled labor in sector "j"	0.20	Estimates based on literature
Output elasticity to land in sector "x"	0.30	Estimated using data for CPV from USDA
Share of consumption "n"	0.20	Estimated from HH survey on consumption expenditure
Share of consumption "x"	0.30	Estimated from HH survey on consumption expenditure
Share of consumption "m"	0.40	Estimated from HH survey on consumption expenditure
Initial unemployment	12	Average 2020-2023, World Bank data
Broadening VAT parameter for good "x"	0.55	Assumed C-Efficiency levels based on WP CPV PFR 2025
Broadening VAT parameter for good "j"	0.55	Assumed C-Efficiency levels based on WP CPV PFR 2025
Broadening VAT parameter for good "m"	1	Assumed C-Efficiency levels reflect import exemptions
Parameter of wage curve	0.1	From literature
Effort elasticity of unemployment	0.5	From literature
Gross (initial) return on public capital	0.27	From literature
Gross (initial) return on secondary education	0.35	From literature
Gross (initial) return on primary education	0.35	From literature
Fraction recovered of recurrent costs	0.50	Assumed levels
Marginal efficiency of public investment	1.0	Assumed levels
Historical efficiency of public investment	1.0	Assumed levels
Degree of absorptive capacity constraints	0.0	Assumed levels
Public investment to GDP ratio	0.04	IMF Capital Stock Dataset
Public investment in primary education/GDP	0.04	World Bank
Public investment in upper-level education/GDP	0.01	Assumed level
Share of external private debt	0.11	CPV 2024 DSA Data
Share of domestic debt	0.32	CPV 2024 DSA Data
Share of concessional debt	0.61	CPV 2024 DSA Data
Share of external commercial public debt	0.18	CPV 2024 DSA Data
Share of remmittances	0.12	
Share of grants (% GDP)	0.01	
Initial VAT rate	0.15	CPV Revenue Administration
Tax rate on labor supplied to sector "n = formal sector"	0.03	Estimated effective tax rate
Labor tax rate on labor supplied to sector "x=agriculture"	0.00	
Labor tax rate on labor supplied to sector "j=informal sector"	0.00	
Capital tax rate in sector "n"	0.21	CPV Revenue Administration
Capital tax rate in sector "x"	0.21	CPV Revenue Administration
Capital tax rate in sector "j"	0.21	CPV Revenue Administration