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From Ruin to Resilience? Rwanda's Post-Genocide Resilience to Economic Shrinking: A Social Capability Approach

By

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Abstract

Thirty years on from the genocide which destroyed the country, Rwanda has undergone a transformational reversal centred around 25 years of uninterrupted economic growth from 1996-2020. There are many proposed drivers of Rwanda's growth, but no emphasis on what made them so resilient to economic shrinking – a relatively new research area accounting for the deficiencies of orthodox growth models in explaining heterogeneous development experiences. Utilising the framework of social capability formalised by Abramovitz via a mixed-method approach consisting of structural break analysis and an analytical narrative, this paper seeks to investigate changes in five core elements of Rwandan social capability since 1994 to shed light on how and why Rwanda was able to build resilience to economic shrinking. These elements are *structural transformation*, *inclusion*, *autonomy*, *accountability* and *social stability*. This paper concludes that while significant progress has been made, challenges remain which could hamper Rwanda's current positive trajectory, including lagging structural transformation, a reliance on ODA, a complicated *accountability* nexus where power is centralised around President Kagame, to the detriment of civil liberties and political rights, and non-inclusivity in the reconciliation process.

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Acronyms

ASD	Africa Sector Database
CVL	Crystal Ventures Limited
DPT3	Combined Diphtheria, Tetanus Toxoid and Pertussis Vaccine
DRC	Democratic Republic of the Congo
EAC	East African Community
EASD	Extended Africa Sector Database
EICV	Integrated Household Living Conditions Survey
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNI	Gross National Income
GoR	Government of Rwanda
ICTR	Nations International Criminal Tribunal for Rwanda
IER	Inequality Extraction Ratio
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification of all Economic Activities
MINECOFIN	Ministry of Finance and Economic Planning
NGO	Non-governmental Organisation
NISR	National Institute of Statistics for Rwanda
NST1	National Strategy for Transformation 1
NURC	National Unity & Reconciliation Commission
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
PPP	Purchasing Power Parity
PRSP	Poverty Reduction Strategy Paper
RPF	Rwandan Patriotic Front
RRA	Rwandan Revenue Authority
RWF	Rwandan Franc
SIDA	Swedish International Development Cooperation Agency
SME	Small & Medium-sized Enterprises
SSA	sub-Saharan Africa
SWIID	Standard World Income Inequality Database
UN	United Nations
UNCTAD	UN Trade and Development
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
USD	US Dollars
VUP	Vision 2020 Umurenge Program
WEF	World Economic Forum

1. Introduction

Despite fundamental improvements in global living standards, such as in literacy, infant mortality, life expectancy, and school enrolment (Neumayer, 2003) during the 20th and 21st century, the central feature of modern economic history has been a divergence in global incomes between the richest and poorest, big time (Pritchett, 1997). While global poverty has fallen since 1990, the Covid-19 pandemic reversed this trend, with 8.5% of the world's population now living in extreme poverty – 62% of whom were in sub-Saharan Africa (SSA) in 2022 (Christensen, 2023). The ratio of per capita incomes (current dollars) between the richest and poorest country in Pritchett's sample (USA and Chad) reached 45.2 in 1990. The same ratio (now replacing Burundi for Chad), staggeringly, swelled to 294.7 in 2022 (World Bank, 2024a). Even comparing OECD and SSA countries on aggregate from 1990-2022 – an era encompassing the so-called 'African Growth Miracle' (Rodrik, 2014; Young, 2012) – the income ratio rose from 23.5 to 25.6 in non-PPP terms, and from 9.3 to 12.6 in PPP terms (World Bank, 2024b, 2024c). For all SSA's rapid growth since 1990, it has not managed to halt income divergence on average. Growth for growth's sake should not be the sole and unwavering target of government policy and international development efforts – especially given the worsening climate crisis – as income growth's ability to improve living standards depends on distribution, and the extent to which states mobilise public revenue for social services and public goods (Neumayer, 2003). However, income (or lack thereof) does still matter, both practically by enabling state capacity and investment, as well as due to the conflict, frustration and deprivation it can cause (Neumayer, 2003). Though the divergence's proposed drivers are broad, from the global North's appropriation of resource value via unequal exchange (Hickel et al., 2022), to the inability of developing economies to implement frontier technology (Abramovitz, 1995), poor aggregate performance masks individual successes. Rwanda is one such story.

Thirty years on from the Rwandan genocide, in which global powers failed to prevent the mass-killing of 800,000 Tutsi ethnic minority and moderate Hutu citizens (Verpoorten, 2005), the country is barely recognisable. GDP per capita has steadily increased from \$111.9 in 1994 (during and after the genocide) to \$966 in 2022 (World Bank, 2024d) – a stone's throw from middle income status – while other well-being metrics have improved drastically. Life expectancy at birth jumped from 42 in 1993, to 66 years in 2022, surpassing the SSA average in 2003, with almost half of Rwandans having electricity access, up from only 1% in 1997 (World Bank, 2024e, 2024f). Gender-based indicators have also progressed, with the UNDP's Gender Inequality Index ranking, based on health, empowerment and labour market outcomes, placing Rwanda 3rd in SSA (UNDP, 2024) – behind only Cabo Verde and Mauritius – and performing similarly to Brazil, whose per capita income was 9.2

times greater in 2022 (World Bank, 2024g). Furthermore, poverty (at \$2.15 per day) has reduced from 87.7% in 1991, to 44.6% in 2020 (ReSAKSS, 2024) – a remarkable achievement, given 40% of Rwandans survived on only 123 RWF per day (approximately \$0.31) in 2000 (Nkurunziza et al., 2012)¹. Although, former RPF-leader turned-President, Paul Kagame, and his administration have been criticised for suppressing political dissidents, encouraging weak civil society (ICNL, 2023) and fuelling conflict in the Great Lakes region via alleged support for armed insurgencies in the DRC (Schipani, 2023), his economic record remains strong. Through active development policy, like the ‘Vision 2020 Umurenge Program’ (VUP), market liberalisation reforms, and governance improvements, the country’s agricultural, industrial, and ‘modern’ sectors have been transformed (Takeuchi 2019).

Part of Rwanda’s success is from high sustained growth, averaging 8.8% since 1995 (World Bank, 2024i) – higher than under any previous post-colonial administration – however, an overlooked factor is Rwanda’s minimal shrinking episodes, shrinking only once due to Covid-19. During this period, roughly 82% of SSA countries shrank at least once, with the average number of shrinking years among shrinkers being four (World Bank, 2024j). Thus, Rwanda’s economic progress was not ‘un-done’ along the way. This is not unique to Rwanda, which Broadberry & Wallis (2017) covers extensively, demonstrating that improved long-run economic performance among industrialised economies was a product of reduced frequency and magnitude of shrinking, rather than increased growth rates. Built upon the foundations of earlier work by Ohkawa & Rosovsky (1973), Abramovitz (1986; 1995) and Broadberry & Wallis (2017), new research into economic shrinking resilience is emerging. The social capabilities framework, comprised of *structural transformation*, *inclusion*, *autonomy*, *accountability*, and *social stability* have been proposed as key mechanisms through which economies can build resilience – enabling them to weather shocks, minimise shrinking, and generate sustained progress (Andersson, 2018; Andersson & Palacio, 2017). Existing literature in this new field is sparse, but case-based analytical narratives utilising the framework are appearing. For example, Axelsson & Martins (2023) used the framework to investigate why Indonesia was more resilient to shrinking than Brazil. Rohne Till (2022) tracked elements Ethiopian social capability to assess their catch-up experience since the 1960s, and Andersson & Andersson (2019) compared the similarities and differences between growth phases in Senegal and Cote d’Ivoire from 1930-1980.

¹ Based on author calculation from EICV, historical exchange rate data, and US inflation data (BLS, 2024; NISR, 2015; World Bank, 2024h).

1.1 Research Question

This paper's research question seeks to tackle the lack of emphasis on resilience to economic shrinking in literature surrounding Rwanda's ongoing transformation. While literature on the drivers of Rwanda's growth are diverse, including good governance (Habyarimana & Dushimayezu, 2018), political factors (Takagi et al., 2019), and official development assistance (ODA) (Ayittey, 2017), there has been no research investigating Rwanda's resilience to shrinking from 1995-2020. Therefore, this paper aims to use the social capabilities framework, with a mixed-method approach, to assess Rwanda's progress since 1994 in achieving sustained and inclusive catch-up growth. Given the government of Rwanda's (GoR) current 'Vision 2050' Strategy seeking to attain high income status by 2050, a detailed understanding of the dynamic shifts in Rwandan social capability over time could aid in determining future areas of focus. This will be achieved through an analytical narrative approach, supplemented with structural break analysis, inspired directly by Rohne Till (2022), to highlight when structural breaks occurred in indicators of social capability, and to attribute potential causes to the breaks using thick descriptions, contextual understanding, and policy analysis.

Based on the assumption, demonstrated from prior literature, that economic shrinking resilience is a function of improved social capability, the research question is: *"to what extent have Rwandan social capabilities changed since the genocide, and what were the drivers?"*

The results from the structural break analysis and analytical narrative illustrate significant positive progress, with minimal shrinking driven by strong governmental support for pro-poor interventions, an increasingly capable and dynamic public sector which is 'crowding in' private investment, and a post-conflict reconciliation process which has fostered much needed stability. However, challenges remain. Progress is heavily reliant on donor support funding increasing budget deficits, Kagame's rule suppresses civil liberties and political rights, informal barriers remain for women's inclusion, and structural transformation is still relatively weak.

1.2 Paper Outline

The outline of the paper is as follows. Section 2 will briefly discuss Rwanda's socioeconomic and historical context in relation to social capabilities and shrinking resilience. Section 3 evaluates existing literature related to deficiencies in using neoclassical growth models, social capabilities from Abramovitz to today, and the contemporary understanding of Rwanda's post-genocide economic success. Section 4 contains the analytical framework. Section 5 details the mixed-methods approach and the data used. Section 6 reports structural break results, highlighting where and why structural breaks may have occurred. Section 7 is the analytical narrative, where social capability is evaluated alongside structural break findings. Section 8 presents conclusions.

2. Context

The Republic of Rwanda is largely a rural, agrarian society, with exports mostly comprised of commodities – notably, coffee, tea and minerals – dating back to the colonial era (Gathani & Stoelinga, 2012). Rwanda's geographical endowment of high average elevation (Kironde, 2009), rich volcanic soil, plentiful rainfall and milder temperatures (Fromm, 2015) throughout their 'mille collines' (thousand hills) provide ideal conditions for growing coffee – accounting for 55% of the nation's exports in 1962 after gaining independence from Belgium (Gathani & Stoelinga, 2012). Thus, Rwanda has been heavily dependent on agriculture since, at least, the heavy investments of the Belgians in the 1930s. However, pastoralist agriculture was dominant long before the Berlin Conference initially established German rule, particularly for the Tutsi ethnic minority (Newbury, 1998). Even in 2020, agriculture employed 64% of the workforce – though its share of GDP has gradually decreased in favour of services (World Bank, 2024k).

Rwanda's recent history has been scarred by bloody ethnic conflict between the majority Hutu, and minority Tutsi (and to a lesser extent, the minority Twa), culminating in the 1994 genocide, claiming the lives of 800,000 Tutsi and moderate Hutu citizens in only 100 days (Verpoorten, 2005). Scores have been killed in the ensuing cross-border conflicts (in particular, the First and Second Congo Wars), as the newly implemented RPF government attempted to root out Hutu-genocidaires who fled into neighbouring DRC and Tanzania (Venugopalan, 2016). Approximately 75% of the Tutsi population, as recorded in the 1991 census, were murdered – by the army, Interahamwe militias, friends, neighbours, and even family members (Heldring, 2021). Although Hutu-Tutsi conflict did not begin with Belgian colonisers, as state domination and inequality persisted prior, the Belgian

administration significantly expanded the state's reach, the nature of political competition, and reinforced the powers of, who they believed to be, Ruanda-Urundi's "natural rulers" – the Tutsi (Newbury, 1998). This generated a political culture that was extremely detrimental to the *inclusion*, *autonomy*, and *accountability* aspects of social capability. Tensions often erupted into violence and attempted coups, which further diminished the state's *autonomy* and *accountability*. The authoritarian government of Juvénal Habyarimana (1973-1994) shifted Rwanda into a competitive clientelist regime following an attempted coup in 1980, giving rise to the 'akuzu' group – an informal network dominating important positions within state-owned monopolies, centred around Habyarimana's wife, Agathe (Behuria & Goodfellow, 2018, p.224). Together, they utilised the nation as a private source of wealth, power and prestige (Wallis, 2020). This contributed to a relatively 'closed' and exclusionary economy, whereby the appeasement of vested interests was the primary method of interaction. State enterprises, which should have been meritocratically operated, generating public revenues for use towards public goods and services, were increasingly awarded to those who could "funnel profits, foreign grants and influence back to those who put them in office" (Wallis, 2020). These practices were continuations of the rent-seeking nature of the previous Kayibanda regime (Behuria & Goodfellow, 2018, p.223). The lack of inclusion of ordinary Rwandans in the economic and political system during Habyarimana's rule led to extensive Hutu unrest based on class and regional differences. This continued to drive ethnic tensions, especially in the wake of the RPF commencing the Rwandan Civil War in 1990, as the faltering regime sought to establish Tutsi as scapegoats. Though many Rwandans loathed the Habyarimana regime, they were not eager to embrace the Tutsi-dominated RPF – and thus, ethnic tensions and violence was once again stirred up, through marginalisation of moderates and the implication of entire ethnic groups, as a tool of political survival (Newbury, 1998).

From this background of social exclusion and violence, institutional and political capture by vested interests, and commodity-focused economic organisation centred around rent-generation for the well-connected, Rwanda somehow managed to trend towards convergence through 'miracle' growth, minimised shrinking, and a robust reconciliation process post-genocide. To investigate how this success was possible, one must evaluate existing literature on growth and convergence, the hypothesised role of Abramovitz's social capability for explaining heterogenous growth experiences, and the conventional wisdom explaining Rwanda's success.

3. Previous Research

3.1 Issues with Neoclassical Growth Theory

Neoclassical growth theory, centred around the Solow-Swan model (Solow, 1956), in which long run economic growth is dependent on savings rates, investment, capital and labour ratios, technological productivity, and the substitutability of labour for capital, has seen mixed empirical results since 1956. The model, contrary to later endogenous growth models, implies that the conditional convergence of poor countries to rich countries (at least to a given steady-state) based on: diminishing capital returns, ability to match the savings ratio, rate of capital depreciation, interaction between labour and capital, and the growth rate of effective labour of a given rich country, is not only possible, but actively predicted. Akamatsu's 'flying geese' model (Kojima, 2000) gave this idea backing, arguing that Asian countries could emulate the previous comparative advantages of Japan as they themselves grew, implying a "uniform and deterministic" conception of catch-up growth (Andersson & Palacio, 2017). However, evidence from cross-country growth regressions paints a pessimistic picture of the potential for transformational catch-up growth based on the neoclassical model, with multiple studies failing to identify robust evidence for convergence (Bloom et al., 2002; Nell, 2020; Quah, 1996). Though, some studies indicate that while poor countries are not converging with rich countries on aggregate, they are converging within similar characteristic clusters (or 'clubs'). For example, between African nations, European Union countries prior to 2003, and contiguous US States (Barro & Sala-i-Martin, 1992; Murthy & Ukpolo, 1999; Yin et al., 2003). Many academics have thus concluded the speed and likelihood of convergence is conditional on factors omitted from neoclassical growth models, such as political and economic institutions (Murthy & Ukpolo, 1999), and level of financial development (Aghion et al., 2004). Given the divide between predicted and actual results of income convergence when utilising Solow's model's intuition, it is salient to complement it with a framework for explaining individual (non)convergence experiences which can be deployed across contexts. Since no cross-country regression can adequately explain why exactly the 'Asian Tigers' have succeeded in converging with the world's richest economies, while attempts at modernisation have largely failed in SSA, new and complementary analytical tools are required.

3.2 Background on Social Capability

Standard growth theory assumes away shrinking in the long-run, and so, it cannot be the sole basis of analysis (Broadberry & Wallis, 2017). Coined by Ohkawa & Rosovsky (1973), deepened by Abramovitz, and operationalised in subsequent works by Andersson & Palacio (2017) and Andersson & Andersson (2019), ‘social capabilities’ within catch-up growth dynamics can provide a crucial lens for assessing historical growth paths of economies, and identify why, where, and how, the process of economic development can stall, be accelerated, or reverse. Abramovitz’s research into social capabilities is rooted in the observation that productivity growth rates vary inversely with initial levels of productivity, and as such, the greater the gap between the ‘follower’ and ‘leader’ economy (usually the US as the global technological leader), the stronger the follower’s potential for productivity growth; a potential dependent on social capability (Abramovitz, 1986, 1995). Abramovitz posits that having relatively low capital intensity (and thus high marginal returns to capital), obsolete technologies currently implemented, and a large agricultural sector harbouring redundant labour, all contribute to the potential for faster growth in output and productivity for the follower than the leader. They can make far larger leaps, far faster (Abramovitz, 1995) – exploiting the “advantage of backwardness” (Gerschenkron, 1979). Abramovitz defines social capability as the “tenacious societal characteristics” which can inhibit countries from overcoming the lack of congruency – with congruency referring to the compatibility of frontier technologies with use in developing economies (Abramovitz, 1995). If modern technology adoption potential is limited by market size, institutional factors, social attitudes, incentive structures, or external factors (like trade regimes), then the rate of realisation of growth will be dampened. His ultimate conclusion is that rapid catch-up growth is more likely when an economy is technologically backward, but socially advanced (Abramovitz, 1995).

Since Abramovitz conceded the main barrier to using social capability to analyse economic change was that “no knows what it is or how to measure it” (Abramovitz, 1986), attempts have been made to rectify this, in conception and practice. Utilising Adelman & Morris (1968) dataset of socioeconomic development indexes, which included economic and non-economic factors, Temple & Johnson (1998) demonstrate that, contrary to the incorrect 1960’s predictions of which countries could, and would, catch-up, social development-based predictors had robust and significant predictive power. Though some indexes were acknowledged to be related to growth based on their relation to factor accumulation, their findings were robust to including traditional growth indicators, like human capital, urbanisation, income inequality and political stability. Thus, they agreed with Abramovitz that “fast growth is partly the outcome of favourable social arrangements” (Temple & Johnson, 1998). Andersson & Palacio (2017) expands on this in two key ways. First, they continued bringing economic shrinking resilience to the forefront of development analysis (as neoclassical models

inadequately explain why economies shrink (Andersson, 2018)) – after Broadberry & Wallis (2017) established its historical importance. This may have large ramifications given the majority of poor countries remain so, not because they cannot achieve high growth, but because they cannot sustain growth over time. Secondly, they provide an analytical framework for assessing resilience to shrinking based on social capability, which directly addresses Abramovitz’s concerns: they make social capability more conceptually coherent (what they are), and propose methods of empirically investigating them (how to measure them). Their framework is related to Abramovitz’s two classes of elements of social capability – 1) people’s basic social attitudes and political institutions, and 2) characteristics enabling economies to exploit modern technologies (Abramovitz, 1995). They are: *structural transformation, inclusion, autonomy, accountability* and *social stability*. It is through this lens (detailed in Section 4) that Rwanda’s post-genocide development experience will be assessed.

3.3 Orthodox Drivers of Rwandan Growth

There is wide-ranging literature seeking to explain Rwanda’s development. The most cited drivers are good governance, embracing market reforms, foreign aid, and the significance of party- and military-owned enterprises for Rwanda’s industrial strategy and transformation (Behuria & Goodfellow, 2018). Good governance is widely considered fundamental to successful development, by fostering predictability, transparency, participation and accountability within societies (Mohan, 2023), as well as stimulating the technological change necessary for economic transformation (Rivera-Batiz, 2002). This is particularly important for SSA, which typically experiences the worst average governance and catch-up rates globally, given Fayissa & Nsiah (2013) observed a 10% improvement in their composite governance index being associated with a 6.1% increase in GDP per capita. This relationship has also been observed for Rwanda (Habyarimana & Dushimayezu, 2018), which is unsurprising given Rwanda’s long-time President, Paul Kagame, has an iron-clad commitment to good governance as enshrined in the nation’s ‘Vision 2020’ Strategy (MINECOFIN, 2000). Nonetheless, governance itself does not exist in a vacuum, it is interconnected with a broad nexus of components including economic institutions, distribution of political power, strength of civil society, and cultural norms, and as such, it alone cannot directly explain Rwanda’s post-genocide development.

Despite the strong success of mixed public-private development strategies, in particular, countries such as Taiwan and South Korea, economists and policy-makers often vie for market and trade liberalisation – which has seen some positive empirical results. For example, liberalising trade was found to increase gains from resource allocation, enable access to a greater variety of goods, and

increase knowledge diffusion (Santos-Paulino, 2005). However, it has sparked controversy due to its contested impacts on the world's poorest. In Ghana, Konadu-Agyemang (2000) argued the micro level effects, especially for the rural poor, were negative as many lacked the ability to compete in enlarged markets when liberalisation was undertaken through structural adjustment programs. Moreover, in the realm of financial liberalisation, some evidence suggests it is not a panacea for industrialisation and development due to the inherent volatility of pricing, the market's interaction with currency fluctuations and shocks, and its potential role in undermining infant domestic banking systems (Singh, 1997). Market liberalisation has still been touted as a factor behind Rwanda's success, specifically in the agricultural sector, where tea and coffee historically comprised the majority of the nation's exports (Oro & Arias, 2012), due to the significant income-enhancing opportunities for smallholder coffee production which arose from the decentralisation and de-politicisation of the industry (Boudreaux & Ahluwalia, 2009). Furthermore, increased trade liberalisation as a result of joining the East African Community (EAC) customs union led increased intra-regional trade and wider exports, partly due to better port access in Mombasa and Dar es Salaam (Ggombe & Newfarmer, 2018). However, some have argued that the liberalisation of agriculture, as donors pressure for market-led reforms accelerated, potentially shifted Rwanda towards a more open deal-making environment too prematurely, constraining the GoR's ability to retain sufficient control over sectors to empower national champions (Behuria & Goodfellow, 2018, p.246). However, the GoR's approach to development is not solely reliant on market liberalisation, but also on facilitating national champions via investment holdings groups operated by the state. The Crystal Ventures Ltd investment holdings company (CVL), which is active across industries from agro-processing and infrastructure, to construction and private security (CVL Ltd, 2022), has been described as an entity focused on 'growing the size of the pie' and 'crowding-in' private investment by reducing first-comer risk (Behuria, 2016). John Mirenge, previously a senior figure within the organisation, described them in 2012 as:

“go[ing] into sectors where the private sector will not. Our strategy is to show that such investments can work. Once we break even and begin to turn profits, we then plan to sell these companies...Our intention is not to start monopolies. In fact, in many cases, we start companies simply to break monopolies” (Behuria, 2016).

There are numerous state and military controlled organisations which seek to nurture business growth (increasingly through public-private partnerships) (Ggombe & Newfarmer, 2018). Therefore, while market liberalisation and fostering competition appear to have some explanatory power for Rwanda's post-genocide economic success, the role of competent government in ensuring rents are well-managed, not too centralised, and in encouraging private investment through initial public investments, cannot be understated.

The significant influx of ODA post-genocide is another dominant narrative of Rwanda's success since 1994 (Ayittey, 2017; Chawla, 2023; Curtis, 2017; Grimm, 2013) – with ODA partially driven by guilt from an inability and unwillingness to the genocide (Takeuchi, 2019). ODA as a percentage of GNI, excluding the 1994-96 years where GNI had largely collapsed and short-term emergency ODA (like the World Bank Emergency Recovery Program (Kumar et al., 1996)) was deployed, has averaged 15.1% from 1997-2022, compared with 12.5% from 1983-1993². This is vastly higher than the SSA average (3.4%) (World Bank, 2024m). There is vibrant debate about ODA's overall impact on economic development, which is often contradictory. A 2008 metanalysis of 100 ODA effectiveness studies could not conclude the impact on growth was significantly different from 0 (Doucouliagos & Paldam, 2008). However, obviously ODA can positively impact important areas of human and social development directly, disconnectedly from growth. For example, ODA was observed to be related to increased government healthcare spending (though marginally) (Barkat et al., 2016), improved educational outcomes via enrolment in basic education (Riddell & Niño-Zarazúa, 2016), and reductions in poverty (Alvi & Senbeta, 2012; Mahembe & Odhiambo, 2019). However, ODA's impact is largely non-uniform, with studies noting differing effectiveness dependent on timing (Edwards, 2015), host country aid ownership, and institutional environments (Tang & Bundhoo, 2017). Rwanda has been dubbed a 'donor darling' by multilateral institutions and bilateral donors, receiving far more assistance than neighbouring DRC or Burundi (LSE, 2019) – despite themselves experiencing economic, social and political turmoil resulting directly from the Rwandan genocide's fallout. Part of this positive donor relationship stems from a state ability to productively use funds. An empirical analysis of Rwandan ODA, taxation levels, and allocation of total government revenue to infrastructure development, found that revenue administration reforms and strong political will was able to mitigate negative ODA impacts – which is typically reduced taxation and infrastructure spending, as observed in other contexts (Ezemenari et al., 2008). Therefore, the authors concluded political factors related to effectiveness of ODA deployment were the drivers of post-genocide growth. Moreover, the GoR has exercised strong agency and ownership over the use of ODA – a luxury not afforded to many recipient nations. This created a win-win scenario for donors and the GoR, whereby donors reap reputational gains from association with a positive case, and the GoR can further increase their ownership of ODA. This is clearly demonstrated by the gradual shift in ODA composition from long-term projects, towards more generalised budgetary support (Grimm, 2013).

² From 1983-1993, GNI was significantly lower than 1994 onwards, as such, less ODA (in nominal terms) still represents a share of GNI. From 1983-1993, GNI grew from \$1.48bn to \$1.96bn (with ODA corresponding to 12.5% on average – between \$185m-\$245m per year). However, post-1994 GNI exploded from \$750m to \$13.03bn in 2022. Thus current ODA (15.1%) represents a larger percentage, of a significantly larger pie (World Bank, 2024l).

The ODA literature highlights that it can drastically assist in the development process, subject to factors like institutional environment. Another such qualification may be the level of social capability, with levels of *autonomy*, *accountability* and *social stability*, in particular, likely to play vital roles in ODA effectiveness.

Thus, investigating the development of social capability is useful relative to standard growth models and cross-country regressions as it facilitates a deeper understanding of dynamics and mechanisms behind the development process – in particular, those that compel countries to shrink. For Rwanda, with rich research evaluating individual growth drivers (and not resilience to shrinking), applying the social capability lens could yield complementary explanations by accounting for multiple interconnected factors simultaneously. However, to do so, social capabilities must be measured.

4. Analytical Framework

The pillars of social capability, outlined by Andersson & Palacio (2017), exhibit a dynamic relationship to economic performance and resilience to shrinking. They jointly determine whether an economy is able to: effectively adapt to technological change inclusively, minimise the risks of international economic integration, and ensure sufficient state capacity in a non-predatory way. These forces are broadly interlinked, interacting to create positive and negative spirals. Achieving resilience to shrinking by improving social capabilities, thus, cannot be understood as an exclusively step-wise process (Axelsson & Martins, 2023) – it is a function of mutually reinforcing and coevolving social capabilities. This section details what the pillars are, how previous works have attempted to measure them, and how this paper proposes to measure them. See Appendix A (Table 1) for a summary.

4.1 Structural Transformation

Structural transformation refers to the change in an economy's composition away agriculture (both in terms of share of GDP and labour), towards higher productivity activities, such as industry – and, increasingly in the case of SSA, services. This is a crucial component of Kuznet's 'modern' economic growth (Kuznets, 1973). The typically observed process of *transformation* begins with rising agricultural productivity per worker – driven by public investment, infrastructure, and accumulated worker knowledge – creating surplus which can be utilised (by taxation, factor flows, or direct government intervention) to develop non-agricultural sectors (Timmer, 1988). The addition of this newly generated surplus enables robust linkages with the wider economy including: increased domestic food supply (which reduces prices, *ceteris paribus*), the release of redundant labour, a local market for outputs, and increased supplies of domestic savings and foreign exchange (Johnston & Mellor, 1961). The increased domestic food supply at lower prices facilitates the transfer of redundant rural labour (as productivity increases reduce the marginal product of agricultural labour) towards urban centres which do not rely on subsistence farming. The labour is then deployed in higher value-added activities, like manufacturing. Given the observed pattern that agricultural share of GDP declines as agricultural productivity increases, it is unlikely to generate enough surplus to sustain catch-up growth (Andersson et al., 2021). Akin to the old adage of not putting all of one's eggs in one basket, diversification from agriculture strengthens an economy by increasing resilience to global and localised shocks, enabling the state to maintain revenue (via taxation) to continue (in theory) providing public goods. If natural factors like poor weather, disasters, soil erosion, or climate change weaken harvests in societies disproportionately dependent on agriculture, or the global prices of

agricultural commodities to which an economy has pinned its growth collapses, the consequences can be dire. Thus, a healthy balance of agriculture, industry, and services offsets the risks associated with participating in the global economy – even being related to more autonomous institutions, and investor willingness to invest in superior technology (Andersson et al., 2024). During *transformation*, we would expect subsistence farming to become less important to the overall economy, larger firms beginning to grow, diversified industrial outputs, and a labour-intensive manufacturing sector based in urban centres emerging (Andersson et al., 2021). Previous papers have measured *transformation* using share of agriculture, industry and services in GDP, agricultural share of employment, and the gap share – defined as the difference between agricultural share of GDP and its employment share³ (Andersson et al., 2021, 2024; Axelsson & Martins, 2023; Rohne Till, 2022). This paper will use similar metrics, along with labour productivity as in Rohne Till (2022), and domestic credit to private sector⁴.

4.2 Inclusion

Inclusion is the extent to which there is broad-based participation in, and access to, economic opportunities within society, such as the labour market. This is essential for modern economic growth to be distributed widely enough to broadly increase prosperity across the wealth and income spectrum, rather than only benefiting elites. It builds resilience to shrinking by enabling more citizens to participate in the economy, therefore making better use of productive human resources (Andersson et al., 2024). Given extreme inequality is persistent in many developing economies, improving the pro-poor characteristics of growth episodes is crucial to ensuring poverty reduction (Andersson & Palacio, 2017) – a significant barrier to productive participation in the economy. For example, those in poverty typically lack access to credit, face higher borrowing costs, and lack savings and formal banking. Moreover, they are unable to acquire the specialised skills necessary to increase their earning potential over the medium-run due to the short-run payoff of diversifying (low) income streams to mitigate risk (Banerjee & Duflo, 2007). These factors disproportionately, and often exclusively, affect the poorest members of society, which can stifle economic growth and development by minimising human capital, and shortening growth episodes (Alesina & Rodrik, 1994; Andersson & Andersson, 2019; Stiglitz, 2016). Because the comparative advantage of many developing economies tend to be labour-intensive, ensuring the participation of typically rural, less educated, and abundant labour should

³ Whereby structural transformation prompts this difference to converge to zero (Axelsson & Martins, 2023).

⁴ This is a measure of the development of the financial sector, which is important for effective mobilisation of capital.

contribute to a more inclusive growth process (Andersson et al., 2024). *Inclusion* also relates to markets, in particular, the ability for newcomers to enter and foster a competitive economy (Andersson & Andersson, 2019). To measure *inclusion*, previous works have utilised education access, prevalence of poverty, non-income measures of well-being, Gini coefficients, and the inequality extraction ratio (IER) (Andersson & Andersson, 2019; Axelsson & Martins, 2023; Rohne Till, 2022). This paper will utilise these metrics, alongside gender-focused elements which assess the extent to which shifts in Rwandan *inclusion* have also involved women. This has been largely missing from the existing social capability literature, despite *inclusion* being described as “economic, social, political, cultural, and environmental conditions” people operate in (Andersson & Palacio, 2017), which absolutely encompasses women’s economic and social empowerment. Aside from the obvious moral imperative of empowering women, recent research demonstrates that female empowerment can have robust and positive impacts on wider development, both in micro settings related to children’s education and health, and in more macro contexts related to increased female labour force participation (Ewerling et al., 2020; Revenga & Shetty, 2012). Therefore, factors proxying gender empowerment are used, like adolescent and average fertility rates.

4.3 Autonomy

Autonomy relates to the ability of a state to be operationally free from distortionary vested interests, whilst being “sufficiently aligned” with non-state actors, like entrepreneurs, trade unions and social organisations, to enable commitments towards development goals (Andersson et al., 2024). This is typically demonstrated by the state being capable of imposing progressive taxation, and subsidising goods and services to meaningfully alter the income distribution (Andersson & Palacio, 2017) – thus fostering, in theory, a sound macroeconomic environment by not submitting to populist or elite pressures (Rohne Till, 2022). In doing so, this builds resilience to shrinking by enabling societies to better smooth economic cycles (Andersson et al., 2024). Zimbabwe is a definitive example of the negative spiral possible due to the interaction between entrenched vested interests, poor economic management, and subsequent macroeconomic instability, with the restructuring of administrative machinery to centralise power to the President and close political allies ultimately facilitating disastrous policies like the Fast Track Land Reform Program (Makina, 2010). Ensuring the state functions free from vested interests helps an economy to attain the ‘doorstep’ conditions necessary to shift from a closed- to open-access society, which expands specialisation and exchange, restrains excessive rent-generation, and promotes the economic and political competition so crucial for long-run development (Andersson et al., 2021; North et al., 2013). The conditions for open-access societies are rule of law for elites, political control over violence, and perpetual organisational forms,

and are unattainable unless the state can successfully operate without predatory capture by interest groups. Elements of *autonomy* assessed in previous studies include inflation and the budget deficit (Andersson et al., 2021; Smythe et al., 2024). Though drivers of inflation are multifaceted, one of the components is the central bank's operational autonomy in setting interest rates to hit inflation targets (Axelsson & Martins, 2023) – where countries exhibiting low *autonomy*, due to weak economic and political institutions, likely experience higher inflation from weak monetary credibility. Persistent budget deficits can also signal *autonomy*, as they can be thought of as the economic consequences of the government's inability to increase revenues through progressive taxation, or reduce spending – especially when spending on areas related to vested interest groups, like the military (Axelsson & Martins, 2023). Generally, economies able to control their inflation and budget deficits experience higher growth rates in the long-run, and are able to reduce the prevalence and magnitude of shrinking (Andersson et al., 2024). This paper will utilise these indicators, and tax revenue per capita, as in Rohne Till (2022), because it partially captures how well a state can set and extract taxes.

4.4 Accountability

Accountability denotes a state's institutional quality, and its ability to provide public goods (Besley & Persson, 2013) – given *autonomy* alone is not sufficient to necessarily prevent persistent inequality or arbitrary use of government power (Andersson et al., 2024). Together with *autonomy*, *accountability* indicates the level of institutional development, and the ability of society to function impersonally – which improves how it can adapt to shocks and crises. *Accountability* is thus a collection of policies and principles regarding public resource management which should “increase the productive potential and living standards of a broad cross-section of society” (Andersson et al., 2021). Public goods in this case can refer to the provision of education, healthcare and sanitation, an impartial judiciary, and physical infrastructure – which are often necessary to ensure the other pillars of social capability can function to foster catch-up growth and promote well-being. For example, without broad-based education access, the ability to access the labour market for decent work (especially for women) is diminished. Furthermore, without sufficient basic healthcare provided by the state (such as maternal care or paediatrics), poverty persists, and the chances of children being healthy enough to acquire the necessary education for labour market participation at all is reduced. Countries lacking open discussion about how to allocate spending on health, education and infrastructure likely exhibit low *accountability* (Andersson et al., 2024), with potentially detrimental impacts on development as a result. This paper will utilise similar metrics for *accountability* as existing works, which have focused on civil and political liberties, observed health outcomes, and

allocation of public spending (Andersson et al., 2021; Axelsson & Martins, 2023; Rohne Till, 2022; Smythe et al., 2024).

4.5 Social Stability

The final pillar is *social stability*, which relates to the ability of societies to resolve conflict, and requires proactive provision of legal institutions and effective business environments (Smythe et al., 2024). It has been established in the literature that conflict tends to fall as incomes rise (Ray & Esteban, 2017) – even after accounting for endogeneity concerns (as ongoing conflicts can reduce productive capacity and incomes directly) by using GDP growth *rate* rather than levels (Miguel et al., 2004). Furthermore, social unrest can become an investment deterrent (Jones & Olken, 2008). This is particularly significant for Rwanda considering they experienced one of the deadliest conflicts in African history. Inward foreign direct investment (FDI) collapsed at the onset of the Rwandan Civil War in 1990, from an average of \$16.7m from 1980-1989, to \$5.9m from 1990-1993, and \$3.96m from 1995-2000 (World Bank, 2024n) – driven by the genocide and Rwanda’s consequent engagement in the First and Second Congo Wars (CPA, 2024). In addition, research indicates that regions of Rwanda which experienced higher levels of violence lagged in consumption terms with relatively lower-violence regions, demonstrating conflict can generate long-lasting economic consequences (Serneels & Verpoorten, 2015). Moreover, civil conflict, in particular, seems to contribute to prolonged lags in well-being due to the disproportionate amount of human capital destruction relative to physical capital (Serneels & Verpoorten, 2015). Provided, as Rodrik (1999) argues, that the economic costs of exogenous shocks are larger in societies with deep social cleavages and poor conflict management institutions, due to the ensuing distributional conflicts, it is clear that the returns *to social stability* via effective conflict mitigation institutions and mechanisms is large. The ability to successfully mitigate inter and intra-state conflict is essential to develop domestic productive capacities and participate effectively in the global economy, and a failure to do this can drastically reduce resilience to shrinking (Andersson et al., 2024). This paper will utilise the Polity2 Index score as in Andersson et al. (2024).

5. Methodology

5.1 Mixed-Method Approach

To investigate the extent to which Rwandan social capabilities have shifted since 1994, this paper will deploy a mixed-method approach, with quantitative structural break analysis conducted for certain indicators of social capability to determine how these parameters changed as a result of large events (Ditzen et al., 2021), complemented by a rich analytical narrative which synthesises case-specific information and understanding, within the wider context of social capability, to investigate causal processes and patterns (Rohne Till, 2022). This methodology is directly inspired by Rohne Till's (2022) paper exploring the past and present growth experiences of Ethiopia – which was itself influenced by Andersson & Andersson's (2019) investigation into the social capability development of Cote d'Ivoire and Senegal. Both the quantitative and qualitative approach utilises a new social capability dataset for Rwanda compiled by the author from a variety of sources.

As in Rohne Till (2022), this paper will use the new community contributed STATA package created by Ditzen et al. (2021), named *xtbreak*, for structural breaks which was itself, in part, an implementation of the procedures developed by Bai & Perron (1998). Given the processes involved in economic development are rarely linear, with adverse shocks often creating periods of acceleration, slowdowns or reversals, determining where structural breaks in key development parameters have occurred is important for building better understandings of the mechanisms underlying economic change. For example, if a given event, such as Rwanda's accession to the EAC in 2007 (EAC, 2024), coincided with a positive structural break in a parameter related to trade, we can infer that there is a relationship worth investigating further. The *xtbreak* STATA package enables the detection and dating of an unknown number of breaks, with unknown break dates, by minimising the sum of squared residuals of the data itself, and its growth rates prior to, and after, the trend break (Bai & Perron, 2003; Ditzen et al., 2021; Rohne Till, 2022). The critical values for each identified structural break are generated using Monte Carlo simulations and bootstrapped residuals which account for the sample size and variance of the actual time series data being used (Berg et al., 2012). The benefit of Monte Carlo simulations in structural break analysis, is that they account for the uncertainty in estimating critical values through a repeated process of random sampling. Moreover, bootstrapped residuals enable non-parametric inference in settings where obtaining distributional approximations are difficult (Horowitz, 2019), and does not necessarily assume observations are independent and identically distributed (an unlikely assumption in time series data related to social capabilities), which could lead to biased estimates.

The method begins by testing the null hypothesis of no structural breaks for a given indicator of social capability, against an alternative hypothesis of up to a maximum number of breaks for the study period (1965-2022) – though more investigative focus is placed on breaks post-1994, given the research question relates to this sub-set of Rwanda’s modern history. Using the same formula as Rohne Till (2022), which was guided by Berg et al. (2012), the maximum number of breaks is set at five⁵. If the null is rejected at the 1% level, then: the locations of breaks are estimated, the mean values of the indicator between said breakpoints are calculated (to identify whether the shift was positive or negative), and the results are plotted on graphs displaying the trend and breaks.

This paper will conduct structural break analysis on 9 of the 33 indicators of social capability used throughout the paper based on their relevance and observation completeness. The indicators are: labour productivity, agricultural gap share, domestic credit to private sector, life expectancy, tax revenue per capita, primary school enrolment, budget deficit, government spending on military, under-fives mortality rate (see Section 6 – Table 1)⁶.

The qualitative section uses an analytical narrative approach. Studying the growth and development experiences of economies in this way is important as it is difficult to determine case-specific, nuanced, information by employing purely cross-national growth models. Thus, analytical country narratives can offer tentative answers to context-specific anomalies (Rodrik, 2003, p.3). Analytical narratives, dating at least to Friedman & Schwartz (1963), are in effect case studies, and can be influential within economics by combining qualitative and quantitative analysis to identify new insights often overlooked by quantitative data alone (Skarbek & Skarbek, 2023). They have been extensively applied to a wide range of topics across social sciences, from commons management (Ostrom, 1990), to the Perestroika reform failures (Boettke, 1993). Although such approaches are often criticised on the basis of weak external validity, Bates et al. (1998) has argued that broader inferences are possible given the model used is broadly applicable – which, in the case of the social capability framework, it is, as any country can be studied through this lens (provided data is available). In line with Rodrik’s recommendation, this paper will include a discussion and evaluation of micro and macroeconomic policies and strategies, institutions, and initial conditions from a wide range of sources to investigate Rwanda’s experience since 1994 as it relates to social capabilities and subsequent resilience to shrinking (Rodrik, 2003). The approach uses thick descriptions through the lens of social capability to increase understanding of how and why certain social capabilities have

⁵ Description of why in Appendix B.

⁶ Structural break analysis was not conducted for Polity2 scores (*social stability*) due to insufficient data variation, however, it is still plotted alongside the structural break variables in **Figure 1**.

developed, and ultimately gain deeper insight on Rwanda’s post-1994 trajectory (Rohne Till, 2022). In this sense, this paper aims to pay “close attention to stories, accounts, and context” of Rwanda to “construct logically persuasive and empirically valid account[s] that explain how and why events occurred” (Bates et al., 1998, pp.10–13). This is undertaken in conjunction with the structural break analysis, which acts as a guide for which periods to focus qualitative investigation on.

5.2 Data

The custom dataset contains 33 social capability indicators for Rwanda, and is drawn from a range of primary and secondary data sources, covering roughly 1965-2022 (though not completely balanced). This section highlights the data sources used, and their reliability, representativity, and validity. Appendix A (Table 1) gives detailed sources.

Data collection and retention from official primary channels is incomplete and largely missing in the years before 1994 and the immediate years after, thus, these channels contributed to relatively fewer observations across the dataset. The National Institute for Statistics for Rwanda (NISR), replacing the Direction de la Statistique in 2005, has improved in recent years, ranked 1st in Eastern Africa for coverage and openness (ODIN, 2022), however, they have patchy pre-2000 coverage. Therefore, only the Integrated Household Living Conditions Survey 5 (EICV 5) has been used to collect poverty headcount data at government threshold levels – with individual data points for 2000, 2005, 2010, 2014, and 2016, given the surveys took place in these years (NISR, 2018). However, there has been controversy surrounding the efficacy of state-provided poverty data, given the domestic political ramifications for Kagame if poverty was observed to stop falling, or rise – especially in the lead-up to the 2015 referendum which granted an extension to his rule by up to another two decades (Wilson & Blood, 2019). This has led to academics publishing methodological criticisms of the GoR in the Review of African Political Economy, resting on the accusation that faulty inflation data was utilised to conclude poverty rates fell between 2010-2014 (ROAPE, 2019). An accusation the GoR deny. Therefore, their data has been complemented by data from the Regional Strategic Analysis and Knowledge Support System (ReSAKSS), which compiles data to support evidence and outcome-based planning for policy under the Comprehensive Africa Agriculture Development Programme (CAADP) agenda (ReSAKSS, 2024). Specifically, the poverty headcount ratio at \$2.15 per day (2017 PPP) from 1991-2020.

The other primary data source is the Rwandan Revenue Authority (RRA), that has published tax revenue statistics from 2010 onwards. Total government tax revenue was gathered from their reports. Total tax revenue from another custom-built dataset, the ‘Tax Revenue dataset for Sub-Saharan Africa: 1980-2010’, compiled by Mario Mansour, Senior Economist at the IMF, is used to expand coverage across the time period (Mansour, 2014). His data is drawn from multiple sources, including the IMF Government Finance Statistics (GFS), and IMF Staff Reports and Statistical Appendices – which are themselves consolidated from customs and tax departments, government agencies, and ministries of finance. Although not perfect, given lack of observations for certain types of taxes which should be comprised within the total revenue figure, for example, resource taxes, it is (to this author’s knowledge) the only available detailed dataset which covers most of SSA over a prolonged period (Mansour, 2014).

The largest secondary data source is the World Bank, with their data used for almost every social capability from 1965-2022, including indicators like sectoral composition and educational statistics. The World Bank tends to have complete data available in its Open Data repository, however, in the case of government budget deficit data, digitised historical records were used in conjunction with GDP and historical RWF-USD conversion data to calculate budget deficits as percentage of GDP. The World Bank is highly regarded as a data source, applying standards, methods, definitions and classifications that are internationally accepted (World Bank, 2024o). Furthermore, they have pioneered methodologies and frameworks to improve the dissemination and quality of their data through the General Data Dissemination System (GDDS), and Data Quality Assessment Framework (DQAF). Therefore, this provides strong credibility regarding usage of their data – especially given such a wide range of indicators are used. These safeguards for data quality also extends to the IMF, although only budget deficit data from 1992-2022 has been taken from their repository (IMF, 2024a).

A number of other non-multilateral institution sources have been used to compile Rwanda’s social capability dataset, including the Standard World Income Inequality Database (SWIID), the Extended Africa Sector Database (EASD), Freedom House, and the Center for Systemic Peace’s Polity5 Project. The SWIID is a comprehensive dataset which has incorporated data from the OECD, the World Bank, Eurostat, national statistics offices, and academic studies to maximise coverage of Gini coefficient data from 1960-2022 (Solt, 2020). Data from 1986-2022 is used, given the SWIID lacks Rwandan data prior to 1986. The SWIID is used over similar datasets, not least because of the coverage, but because its record of comparability is better than alternative datasets (Solt, 2020), which ensures conclusions based on their data can be credibly compared across countries. The EASD contains an expanded number of countries and fields compared to its parent set – the Africa Sector Database (ASD) developed by the Groningen Growth and Development Centre (GGDC) – with

Rwandan sectoral information related to sector employment, value added, and composition (Mensah et al., 2023). A benefit of EASD, aside from including Rwanda in the first place, is that labour productivity (gross value added per worker) can be derived, an important aspect of *structural transformation*. Freedom House, widely used by policymakers, academics, and journalists, reports the historical conditions of political rights and civil liberties globally in their annual 'Freedom in the World' survey (Freedom House, 2024). Their data is gathered by a network of field-researchers, consultants, NGOs, and governments to increase validity and reliability, and covers a period from 1973-2023, including for Rwanda. Although their data is not necessarily the most information rich, in the sense that their indexes for political rights and civil liberties are only a 1-7 scale which denote either 'Free', 'Partly Free' and 'Free', the data is still useful by illustrating aggregate changes over time. Given little nuance is involved in directly analysing the index itself, it is complemented by the analytical narrative. Lastly, the Center for Systemic Peace's Polity5 Project is used, as in Andersson et al. (2024), to investigate the level of *social stability* as proxied for by regime change (Polity2 score). This score is the difference between the Democracy (DEMOC) and Autocracy (AUTOC) score for a given country, in a specific year. 'DEMOC' and 'AUTOC' scores refer to the presence of institutions which: enable citizens to exercise political preference, constrains the executive, and guarantees of civil liberties and political participation (Marshall & Gurr, 2020). This index exhibits strong representativeness for *social stability* due to the Polity's conceptual scheme which examines the concomitant qualities of democratic and autocratic authority, rather than assessing mutually exclusive factors, enabling a more realistic spectrum of institutionalised democracies and autocracies (CSP, 2024), though there is overlap with *accountability*.

6. Results

Table 1 displays the abridged results of Ditzen et al's (2021) STATA package for 9 indicators of Rwandan social capability. Estimated structural break years, their 95% confidence intervals (expressed in years), and the indicators' mean value between break points (to assess the direction of the break), are included, as in Rohne Till (2022). **Figure 1** displays the structural breaks graphically, with vertical lines indicating break locations for each indicator.

Table 1 – Structural Break Analysis

Social Capability	Variable	Break Date(s)	Confidence Interval	Mean
Transformation	Labour Productivity (in 2005 RWF)	2002	2001-2003	1970-2002 = 221,164.49
		2009	2008-2010	2002-2009 = 332,155.71
				2009-2015 = 499,874.12
Transformation	Agricultural Gap Share	1976	1975-1977	1970-1976 = -35.95
		2015	2014-2016	1976-2015 = -49.91
				2015-2022 = -30.46
Transformation	Domestic Credit to Private Sector (% GDP)	1976	1974-1976	1965-1976 = 2.61
		2003	2002-2004	1976-2003 = 7.21
		2012	2011-2013	2003-2012 = 11.80
				2012-2020 = 19.95
Inclusion	Life Expectancy (Years)	1991	1990-1992	1965-1991 = 48.14
		1999	1998-2000	1991-1999 = 39.41
		2007	2006-2008	1999-2007 = 52.96
				2007-2021 = 64.32
Inclusion	Primary school enrolment (% gross)	1979	1978-1980	1971-1979 = 57.42
		1999	1998-2000	1979-1999 = 72.91
		2006	2005-2007	1999-2006 = 116.0
		2013	2012-2014	2006-2013 = 144.16
				2013-2022 = 133.21
Autonomy	Tax Revenue per capita (current USD)	2007	2006-2008	1980-2007 = 26.56
		2013	2012-2014	2007-2013 = 77.37

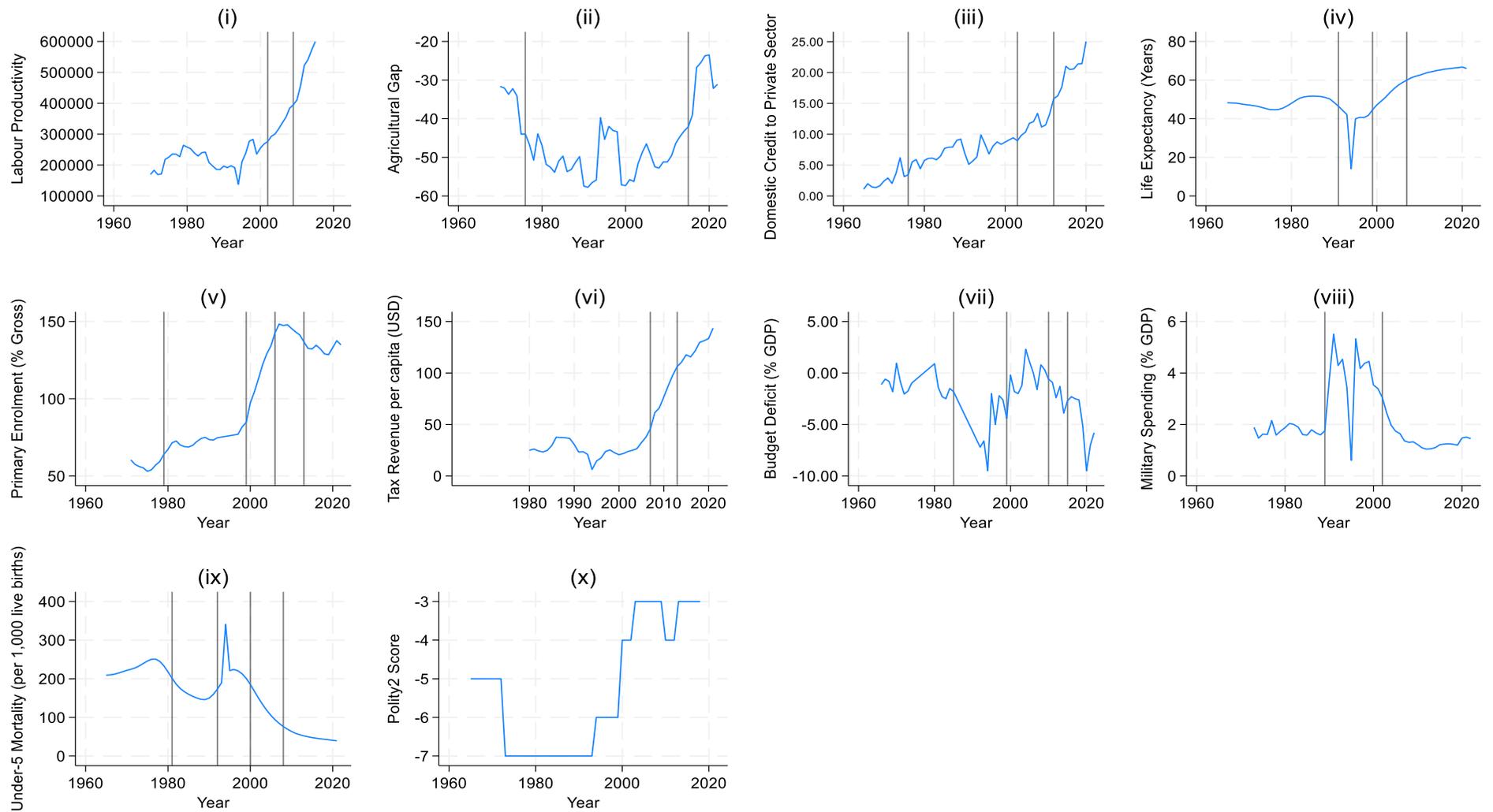
				2013-2021 = 123.30
Autonomy	Budget Deficit (% GDP)	1985	1984-1986	1966-1985 = -1.17
		1999	1998-2000	1985-1999 = -4.59
		2010	2009-2011	1999-2010 = -.61
		2015	2014-2016	2010-2015 = -1.97
				2015-2022 = -4.69
Accountability	Military Spending (% GDP)	1989	1988-1990	1973-1989 = 1.76
		2002	2001-2003	1989-2002 = 3.70
				2002-2022 = 1.47
Accountability	Under-5 Mortality (per 1,000 live births)	1981	1980-1982	1965-1981 = 226.88
		1992	1991-1993	1981-1992 = 164.05
		2000	1999-2001	1992-2000 = 218.73
		2008	2007-2009	2000-2008 = 123.78
				2008-2021 = 52.11

Note: (i) *Labour Productivity* refers to the economy-wide gross value added at constant 2005 prices (RWF). (ii) *Agricultural Gap Share* denotes the difference between agriculture as a share of GDP, and employment in agriculture as a share of GDP. (iii) *Domestic Credit to Private Sector* refers to finances provided to the domestic private sector by financial firms through loans, securities, and sources. (iv) *Life Expectancy* is the average life expectancy at birth in years. (v) *Primary School Enrolment (Gross)* is the ratio of total enrolment, regardless of age, to the population that officially corresponds to the primary education in a given year. (vi) *Tax Revenue per capita (current USD)* refers to the total government revenue from taxation divided by the population for a given year. (vii) *Budget Deficit* is the difference between government expenditure and income (% GDP) (viii) *Military Spending* refers to the total government spending on all military activities as a percentage of GDP. (ix) *Under-5 Mortality* refers to the probability that a newly born child will die before reaching age 5, expressed as a ratio per 1,000 live births.

Of the 9 indicators, 4 demonstrated ‘positive’ breaks across the period (improvements in those aspects of social capability), while 5 exhibited fluctuating (positive and negative) changes. Labour productivity, domestic credit to the private sector, and tax revenue per capita consistently improved, with the increase in mean value between the first break and after the last break ranging from 126% for labour productivity, to 664.4% for domestic credit to private sector. Primary school enrolment’s shifts were not always numerically positive, with the mean decreasing after break 4 (from 144.16 to 133.21), however, this could still be a ‘positive’ development as it may imply a reduction in the backlog of Rwandans older than primary school age, but without primary education (demonstrated by over 100% gross enrolment). Although, cross-examining the primary and secondary enrolment data suggests there was a secondary enrolment reduction too during the same period. This could indicate some economy-wide factor which reduced education access.

Of the 5 social capability indicators which fluctuated between improving and worsening across the period, 4 appear to be directly related to the Rwandan Civil War (1990-1994), Rwandan Genocide (1994), and the challenges of post-war reconstruction. Average life expectancy fell drastically from 48.14 to 39.41 between 1965-1991 and 1991-1999, even falling to 14.1 in 1994. However, it recovered to 52.96 (1999-2007) and 64.32 (2007-2021). Military spending and under-5 mortality also increased during the 1990s, but have since fallen roughly in-line with the SSA average (World Bank, 2024p, 2024q). The budget deficit ballooned massively in the conflict build-up, and decreased after. However, since 2015 the deficit has crept upwards, partly due to ODA-financed government investment programs. Lastly, the agricultural gap share has fluctuated, with a significant increase throughout the 1980s (implying decreasing agricultural productivity) consistent with collapsing global coffee prices (Verwimp, 2003) – though it has trended downwards since the early 2010s; likely a function of the increasing importance of services to GDP.

Figure 1 - Structural Break Time Series Graphs



Note: for detailed information on the variables and sources see Appendix A (Table 1).

7. Findings

7.1 Transformation

Structural transformation, important for building shrinking resilience by prompting economic diversification such that an economy can better deal with shocks, has made progress in Rwanda – though lagging its East African neighbours. A 2006 SIDA paper evaluating Rwanda’s progress on growth and poverty reduction via their first Poverty Reduction Strategy (PRS) concluded structural transformation had “barely begun”, with private sector development characterised as a failure due to its limited extent (Bigsten & Yanagizawa, 2006). In 2006, agricultural GDP share was 30% (down from 75% in 1965), and agricultural share of employment was 79.4%⁷ – implying a significant Lewisian-style shift in redundant labour from agriculture had not occurred (Lewis, 1954). However, there have been improvements since, with the employment share falling to 47.3% in 2019, driven (in part) by strong governmental support for agriculture in almost every national policy paper and strategy. For example, the ambitious ‘Vision 2020’ Strategy highlighted Rwanda’s agriculture dependence (for employment and foreign earnings) as a top priority, with Pillar 5 focused on shifting towards a higher productivity and market-oriented agricultural sector (MINECOFIN, 2000). Moreover, transformation is still targeted, including in the new ‘Vision 2050’ Strategy (specifically, agriculture for wealth creation), and the National Strategy for Transformation 1 (NST1), which seeks to drive structural change through productivity-enhancing interventions related to irrigation, and improved access to finance and inputs (MINECOFIN, 2017, 2020).

Data does demonstrate modest progress, both since SIDA’s 2006 report, and the 1990s.

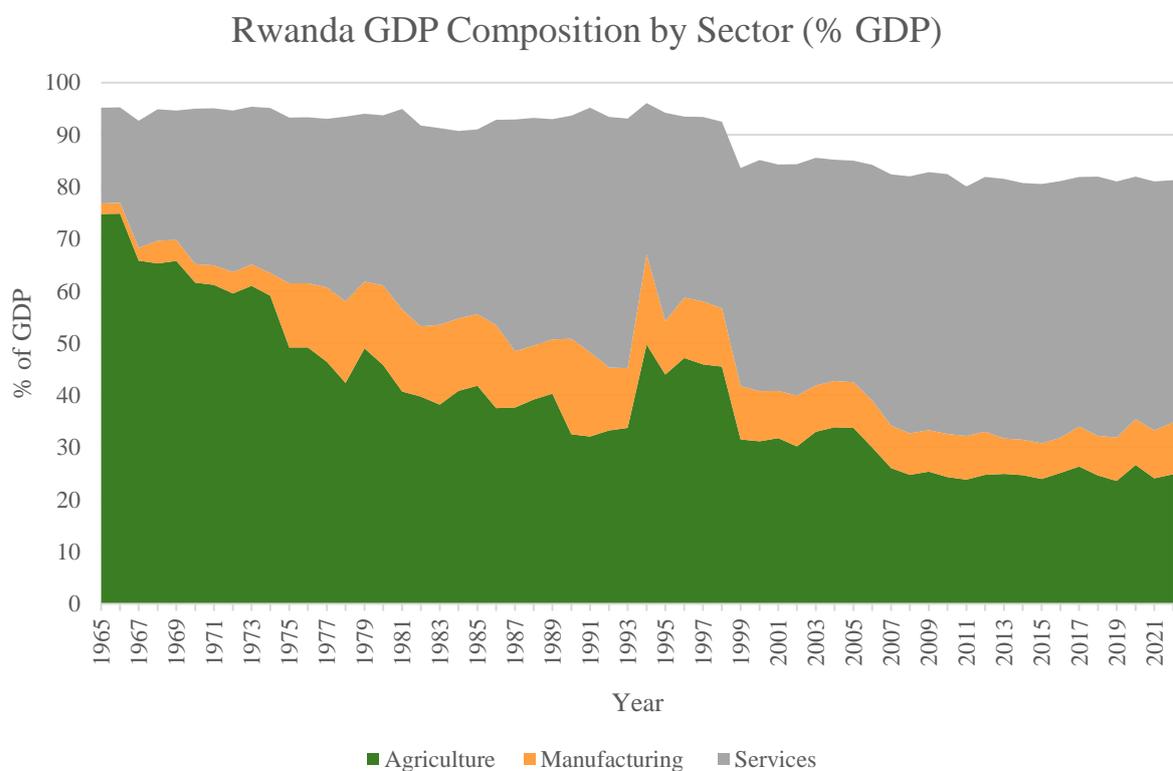
Figure 1 Graph (ii) shows Rwanda’s agricultural gap share has been reducing since 2000, implying rising agricultural productivity⁸. Furthermore, agriculture’s GDP share has fallen since 1965 (except for the 1990s), implying some *structural transformation* (**Figure 2**). This is also visible in changing export compositions since 1995, with agricultural products (particularly tea and coffee) falling from 80% to 15% of total exports in 2020, in favour of mineral products (notably tin and tungsten) and gold – combined accounting for over 50% of total exports (OEC, 2024). The large rise in mineral resources from 1999 to the early 2000’s is partly attributable to pillaging Congolese resources, with those revenues comprising 80% of GoR’s budget in 1999 (Takeuchi, 2019, p.127; UN, 2002).

⁷ Author calculation based on EASD data for number of people employed in agriculture, and number of total employment persons.

⁸ The 1990s spike, however, was not indicative of rising productivity, being driven by the genocide itself, as agriculture’s share of GDP exploded due to the collapse of non-agricultural economic activity and the uptake of subsistence farming.

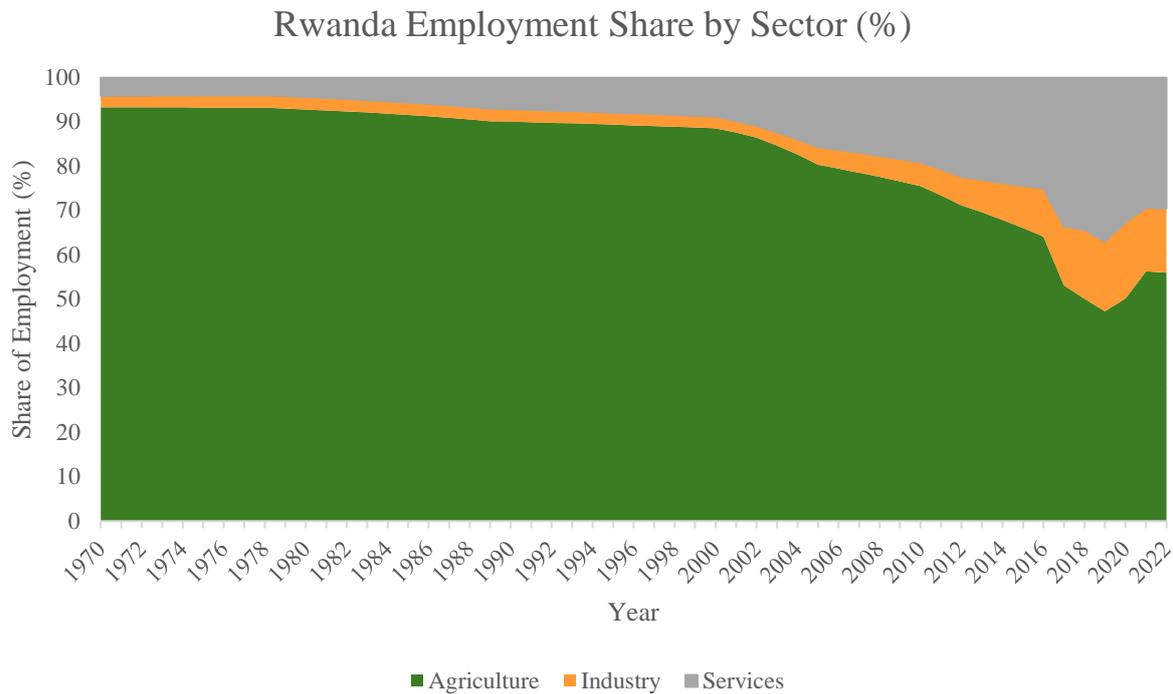
A feature of Rwanda’s *structural transformation* (like many under-industrialised African states), is that it is driven by services, not manufacturing (Ggombe & Newfarmer, 2018) – with this expanding later. Services is also responsible for increasing labour productivity (**Figure 1** Graph (i)), with an estimated 90% of annual labour productivity growth from 1991-2013 generated by services (Balchin et al., 2016). This has kept the Rwandan ‘miracle’ growth afloat, reducing the need to release agricultural labour to drive expansion – demonstrated by **Figure 3**, showing that in 2022 over 50% of the workforce remains agrarian.

Figure 2



Note: does not sum to 100% as ‘Manufacturing’ excludes ISIC codes 10-14 & 40-45 (mining, electricity, gas, water supply, and construction).

Figure 3



Note: ‘Industry’ includes manufacturing and ISIC codes 10-14 & 40-45.

Although productivity growth is primarily driven by non-agricultural sectors, there has been improvements in agricultural yields – a key prerequisite to release agricultural labour – even as agriculture’s GDP and employment share is declining. Data suggests that since the National Agriculture Policy (2004) and Strategic Plan for the Implementation of Agriculture were implemented, staple crop yields significant for food security and poverty reduction have drastically increased – up to 225%, 129% and 90% for maize, wheat and cassava, respectively (Ggombe & Newfarmer, 2018). Other drivers of the increase include marshland development projects, the Organic Land Law 2005 (which consolidate land into larger, more productive, plots), and the Crop Intensification Program from 2007 (Nsabimana et al., 2021; Takeuchi, 2019, p.127). Despite this, *structural transformation* does remain limited – driven by environmental, domestic, and international factors. For example, crop disease, soil erosion, low land consolidation and farmer professionalisation, weak credit access, and global commodity prices (MINECOFIN, 2017).

There is increasing optimism surrounding the mining sector which has not been fully exploited – which could drive enough growth to soak up excess agricultural labour. However, poor infrastructure for landlocked Rwanda remains a barrier (especially road transport) by increasing export and import costs necessary to support the sector (MINECOFIN, 2017). The transport cost to export value ratio is one of the highest in the region at 51% in 2000, relative to only 13% in Kenya (Bigsten & Yanagizawa, 2006). Though Rwanda’s EAC accession (2007) has boosted trade, given

their dependence on Kenya's Mombasa, and Tanzania's Dar Es Salam, ports for global market access (Bigsten & Yanagizawa, 2006).

Financial development is also important for facilitating the efficient reallocation of factor inputs from agriculture as an economy undergoes *structural transformation*. Without a resilient financial sector, the level of domestic savings, and thus capital accumulation, is negatively affected, impeding the viability of new sectors – something consistently demonstrated empirically; see Zhuang et al. (2009) for an overview. Data has tentatively indicated improvements in the Rwandan financial system's ability to support new activities and private sector development. **Figure 1** graph (iii), depicts the domestic credit to private sector as percentage of GDP – showing large increases over time, from 5.8% in 1980, to 25% in 2020 (World Bank, 2024r) ahead of Tanzania, Uganda, and the DRC, and progressing towards the SSA average (37.3%). A large, positive, structural break for this variable was identified in 2003, which aligns with increasing financial sector liberalisation during the early 2000s, culminating in many foreign banks entering Rwanda, like Ecobank and the Kenya Commercial Bank (Behuria & Goodfellow, 2018, p.243). However, the financial sector recovery and liberalisation took time, as the local banking sector was overburdened with non-performing loans after the genocide, which hindered reconstruction efforts in capital-intensive activities necessary for *structural transformation* (Behuria & Goodfellow, 2018). This was exacerbated by weak private sector development in the early 2000s, with many SMEs having to finance their enterprises via personal savings (Bigsten & Yanagizawa, 2006).

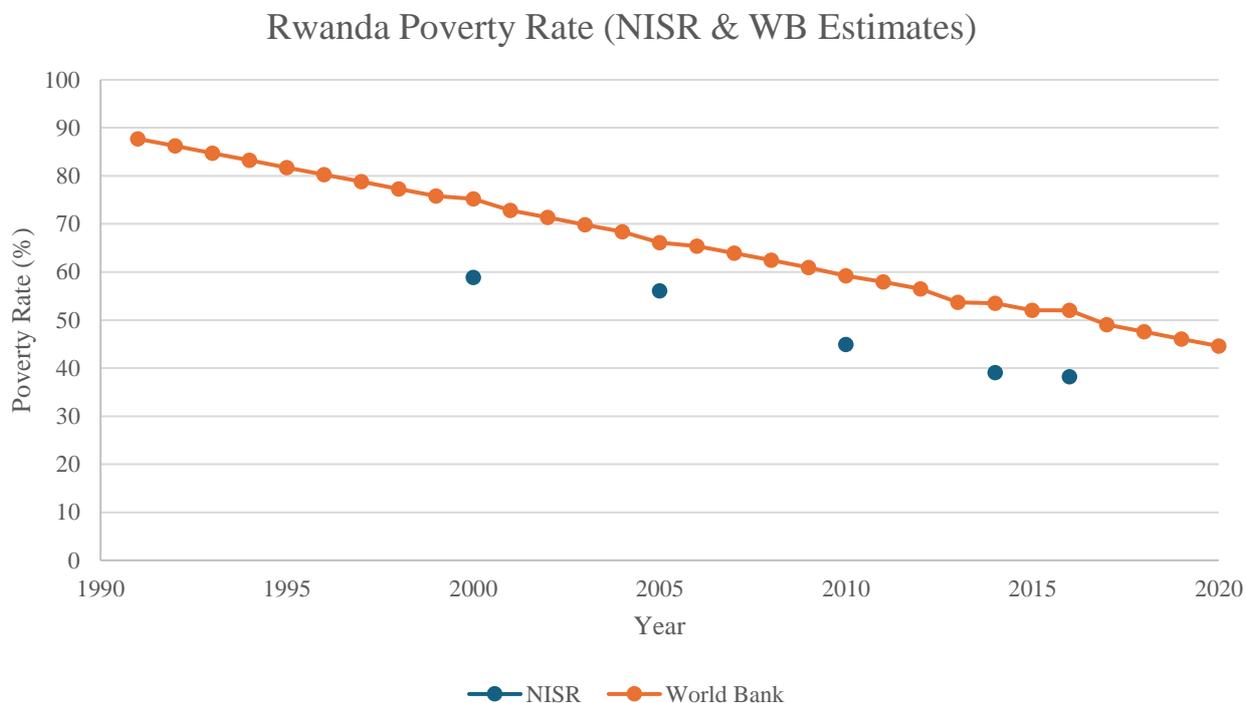
Thus, while *structural transformation* has accelerated since the 2000s, with agriculture only accounting for 24.9% of GDP in 2022, and 56% of employment, driven by targeted agricultural productivity-enhancing, increased trade access, and increasingly complex financialization, there is still progress needed. Since no (non-resource rich) country has significantly increased incomes without industrialisation facilitated by *structural transformation* (Dobermann & Caselli, 2018), Rwanda must further diversify their economy to increase shrinking resilience such that they can better weather shocks. The risk of failing to do so is demonstrated by Rwanda's Covid-19 performance – a 3.4% contraction, relative to positive (but weak) growth amongst their nearest neighbours, caused by a reliance on travel-sensitive services industry (particularly tourism, which constituted 28% of total export value in 2020) (World Bank, 2024s, 2024t).

7.2 Inclusion

Inclusion has made strong progress since 1994, particularly in areas determining productive economic participation, like poverty, inequality and women’s empowerment. This social capability (particularly poverty alleviation aspects) has been a key component of the GoR’s successive development strategies. ‘Vision 2020’ aimed to reduce poverty to 30% by 2020 (from 64% in 2000), and ‘Vision 2050’ aims to eliminate poverty entirely by 2050 (MINECOFIN, 2000, 2020). Poverty is viewed as the primary factor ensuring the Kagame regime’s legitimacy, which has been consistently dogged by criticism related to civil and political liberties (Ggombe & Newfarmer, 2018), which they (and donors) brush off on account of their development successes. While the state-provided figures related to poverty alleviation, as mentioned previously, should be treated with caution on that basis, NISR data from EICV surveys depicts falling poverty – from 58.9% in 2000, to 38.2% in 2016.

Figure 4 complements these figures with \$2.15 per day poverty rates from the World Bank, which corroborates the falling trend⁹.

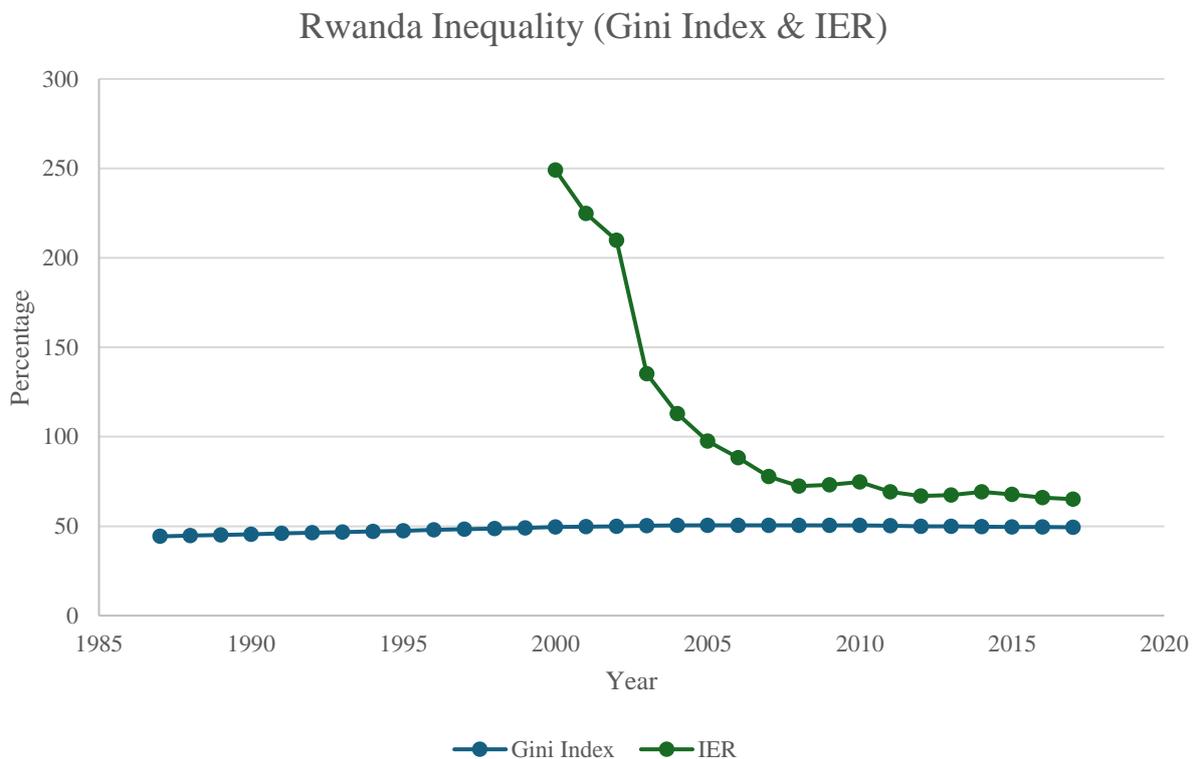
Figure 4



⁹ The World Bank figures are higher as they use \$2.15 per day as the threshold, compared to the Rwandan government which calculate their own (much lower) threshold of poverty (roughly \$0.64 in 2014).

Given poverty reduction is a function of growth, initial income distribution, and distributional changes, one must assess distributional changes alongside growth in Rwanda’s context, as they started their renewed development drive post-genocide from a position of very high inequality (Bigsten & Yanagizawa, 2006). Rwanda’s Gini index has remained stagnant at high inequality levels (**Figure 5**), increasing from 44 in 1986, to 50 by 2002. However, as discussed in Rohne Till (2022), part of this is explainable by resource poverty – meaning there was little excess wealth (above subsistence) for elites to capture. Thus, deploying Milanovic’s ‘Inequality Extraction Ratio’ (IER) may provide a more nuanced insight into Rwanda’s changing income distribution, as it more adequately controls for societal wealth. The IER refers to the ratio of actual inequality (measured by the Gini index), and the maximum Gini that is physically possible, provided: the population survive on the minimum daily calorie intake¹⁰, and the remaining wealth is extracted by an infinitesimally small group of elites (Milanovic, 2009). **Figure 5** displays the Gini index and IER.

Figure 5



¹⁰ 2,500kcal was used for the IER, in-line with the Rwandan government’s estimates (NISR, 2015), which was set at 105,064 RWF per year in 2014 prices. The same figure in 2000 was 45,000 RWF (Bigsten & Yanagizawa, 2006). Data for remaining years (2000-2017) was imputed using Rwandan inflation rates (World Bank, 2024u).

The IER fell sharply from roughly 250% in 2000, towards the low 60% range from 2008. It must be noted that the IER can exceed 100% in the short run, as it indicates large sections of the population are living below the subsistence threshold (Milanovic, 2009; Rohne Till, 2022), which is corroborated by the EICV5 data, recording 40% of the population living below the extreme poverty (2,500kcal) threshold of 123 RWF in 2000 (NISR, 2018). The rapid fall implies that ‘elites’ extracted less remaining surplus above subsistence levels over time. Combined with data highlighting a fall in poverty, this appears to indicate strengthening *inclusion*, with the pro-poor growth policies of the GoR managing to increase incomes at the bottom end of the income distribution. However, the fact that the IER has stagnated above the Gini index suggests inequality remains a larger concern than is indicated by the Gini alone (Rohne Till, 2022).

Alongside minor redistributive achievements in the data, there has been a general pro-poor attitude throughout government strategies, particularly in agricultural and rural priorities – which is important given the limited *structural transformation*, and majority agrarian workforce. After the genocide, to encourage the exiled Tutsi diaspora from the 1959 Hutu Revolution to return, the GoR implemented a redistributive land-sharing policy, whereby Hutu residents in Eastern Rwanda were compelled to “give...half of their properties” to returnees (Takeuchi, 2019, p.126). Furthermore, the GoR intervened more in rural and agricultural affairs relative to the more *laissez-faire* approach used elsewhere, to ensure growth and reconstruction was pro-poor. The VUP, for example, was implemented as an integrated local development program directly aimed at promoting rural growth, expanding social protections, and accelerating poverty reduction, under the targets set by the NST1 & ‘Vision 2050’. Policies like unconditional cash transfers, temporary employment on community infrastructure projects, and asset transfers (like livestock) were used (LODA, 2024). Many interventions are also home-grown solutions, with Kagame a strong proponent of local ownership of development solutions, rather than the simple of importation Global North solutions (Mwai, 2018). ‘Ubudehe’ and ‘Girinka’ are strong examples, where the former aims to empower communities to assess their own communal development priorities and establish funding plans, while the latter provides cows to poor families to combat childhood malnutrition (Rwandapedia, 2024a, 2024b).

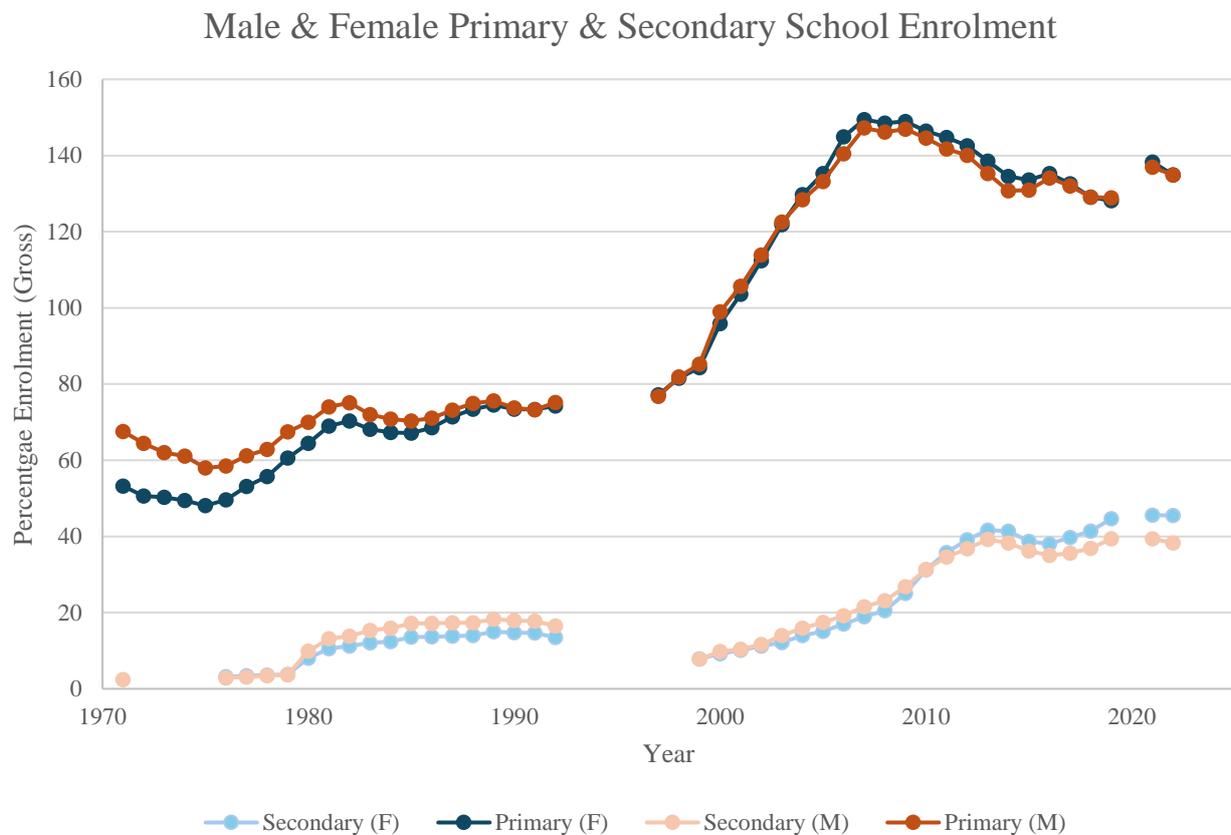
Non-monetary measures of *inclusion* have also improved since 1994, like education and health, which have been key GoR strategy pillars (MINECOFIN, 2000, 2017, 2020). For example, both primary and secondary school enrolment has increased, with a sharp uptake in primary enrolment from 2000 (**Table 1** graph (v)). The large, positive, structural break identified in 1999 is likely related to the ‘Plan of Action for Education in Rwanda’ implemented from 1998-2000, with the aid of UNESCO and the UNDP, which included compulsory primary education by 2005 (MoE Rwanda,

1998). The GoR's commitment to expanding education is apparent throughout their policy and strategy briefs, with the first PRSP establishing fee-free primary education from 2003, while expanding access to, and the quality of, secondary education – emphasising girls (Bigsten & Yanagizawa, 2006). Moreover, life expectancy has sharply improved (**Table 1** Graph (iv)), reaching 66 years in 2022 – the highest amongst Rwanda's neighbours, and 6 years higher than the SSA average (World Bank, 2024e). This is a testament to the continued support given to healthcare, with the first PRSP recognising health as a consequence and cause of poverty, and enacting policies related to insecticide treated net (ITN) distribution, expanding DPT3 vaccination coverage, and information campaigns around HIV/AIDS prevention (Bigsten & Yanagizawa, 2006).

An element of *inclusion* absent from social capability research is women's development priorities – which, given it is described as “the economic, social, political, cultural and environmental conditions... crucial for individual access to productive resources” (Andersson & Palacio, 2017), is essential for fully understanding Rwandan *inclusion* over time. Government policy has maintained a strong emphasis on women's development as a ‘cross-cutting’ issue in many strategies, including the NST1, ‘Vision 2020’, and ‘Vision 2050’. Given women conduct the majority of subsistence agriculture, and perform vital functions related to children's education and well-being, the GoR has started practicing positive discrimination, and have implemented targeted interventions to improve their lives (MINECOFIN, 2000, 2017). Expanding *inclusion* for women in the economy and society was particularly important for Rwanda, due to the disproportionate number of female-headed households in the aftermath of the genocide – with estimates ranging from 34% to 70% – as many women became sole bread-winners (UNCTAD, 2014). For example, the GoR enacted numerous laws and regulations upholding equal pay for equal work, as well as laws punishing harassment and discrimination (UN Women, n.d.). The groundbreaking 1999 ‘Law on Matrimonial Regimes, Donations, Successions & Liberalities’ is one of the most consequential, by enforcing de jure equality between men and women in relation to property and inheritance rights (UNCTAD, 2014).

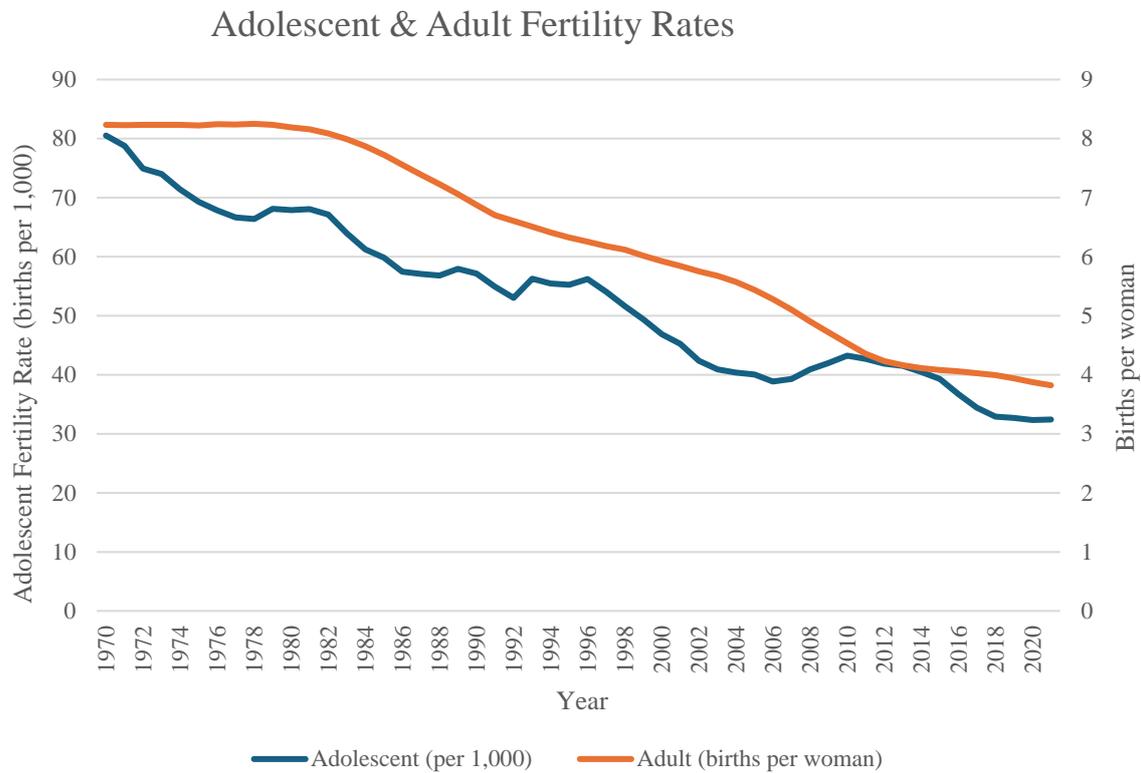
Evidence of these policies' impact is seen in girls' school enrolment data, and falling fertility rates – as girls and women are empowered to more freely control their lives. **Figure 6** depicts male and female school enrolment rates, demonstrating male enrolment outpacing female enrolment until the early 1990s in primary education, and late 1990s in secondary education. Since the reconstruction period, male and female enrolment has been largely equal, though girls' secondary enrolment has been higher in recent years.

Figure 6



A combination of increased girls education and the GoR’s focus on family planning has led to sustained decreases in fertility – a trait consistently related to improved empowerment. When women have access to improved education, skills, social decision-making power, and household resource allocation control, they typically desire fewer children (Atake & Gnakou Ali, 2019). **Figure 7** demonstrates the adolescent fertility rate per 1,000 adolescents (aged 15-19) on the left, and total estimated births per woman on the right. Since 1995, the adolescent fertility rate has fallen from 55.2 to 32.4 in 2021, and births per woman from 6.3 to 3.8 – significantly below the SSA average in both metrics, reflecting increased women’s empowerment and inclusion within society.

Figure 7



Despite these improvements, which contributed to 64% of Rwanda’s parliament being women, as well as a third of Cabinet Ministers (UN Women, 2018), informal barriers still prevent women from active societal participation. These structures create a divide between de facto gender attitudes and the de jure (progressive) ones (UNCTAD, 2014). For example, male control over land, despite the 1999 inheritance law, is deeply entrenched in areas such as cash crops, where women remain employed informally as unpaid family members or casual labourers (UNCTAD, 2014). Furthermore, women still lag in access to formal financial services (including microfinance, mobile money, and savings), though the gap has reduced from 2016-2020 (AFI, 2023). As such, gender-based *inclusion* in Rwanda is more nuanced than suggested by formal metrics – it is important to assess the de facto realities of women’s *inclusion* in the economic and political system when evaluating how inclusive Rwanda’s miracle growth has been.

Therefore, while *inclusion* has made significant strides since 1994, with poverty rates and the IER falling alongside increased education provision (especially for girls) due to pro-poor interventions, barriers preventing Rwandans from effectively participating in the economy, and benefiting from growth, remain. Inequality and poverty are still among the highest in the world, implying the gains of recent progress have been largely captured by the richest - which can inhibit

growth via social conflict and shortened growth spells (Alesina & Rodrik, 1994). Moreover, women still face informal barriers to empowerment despite de jure progress. Given the evidence that poverty reduction is a potent building block of resilience to shrinking (Andersson et al, 2024), continuing poverty eradication via inclusive means will be essential for future progress.

7.3 Autonomy

The social capability *autonomy* has largely improved, indicating the state has been better able to keep vested interests at bay, enabling them to focus on mutual commitments with non-state actors to implement development policies and goals (Andersson et al., 2021). As discussed previously, Rwandan *autonomy* had been weak since independence. The Kayibanda regime (1962-1973) was rent-seeking, with Kayibanda controlling the coffee marketing board, utilising it as the economic arm of the regime (Verwimp, 2003) to expand southern elites' control (Behuria & Goodfellow, 2018, p.224). These practices continued under Habyarimana, which transformed Rwanda into a competitive clientelist regime where the 'akuzu' group – centred around his wife – dominated state-run monopolies (Behuria & Goodfellow, 2018, p.224). Corruption and state capture (pre-genocide) contributed to a closed-order economy, lacking truly competitive markets, with a government unfocused on development priorities.

Metrics related to *autonomy* show improvements – specifically tax revenue per capita and inflation – but some require closer analysis (budget deficit). **Figure 1** graph (vi) (shown below) demonstrates strong growth in the GoR's ability to impose progressive, but relatively low, taxes and effectively collect them. The positive break observed in 2007 is likely related to multiple RRA-driven reforms to modernise the taxation system. For example, in 2005, simplified personal income tax rates were introduced, with electronic filing and tax administrations coming into effect in 2010 and 2016 respectively (IMF, 2023), facilitating a more efficient utilisation of the expanding tax base. This is further corroborated by government revenue to GDP data, demonstrating the GoR was able to keep tax collection increases up with rapid GDP growth (**Figure 8**).

Figure 1 graph (vi) - Tax Revenue per capita (USD)

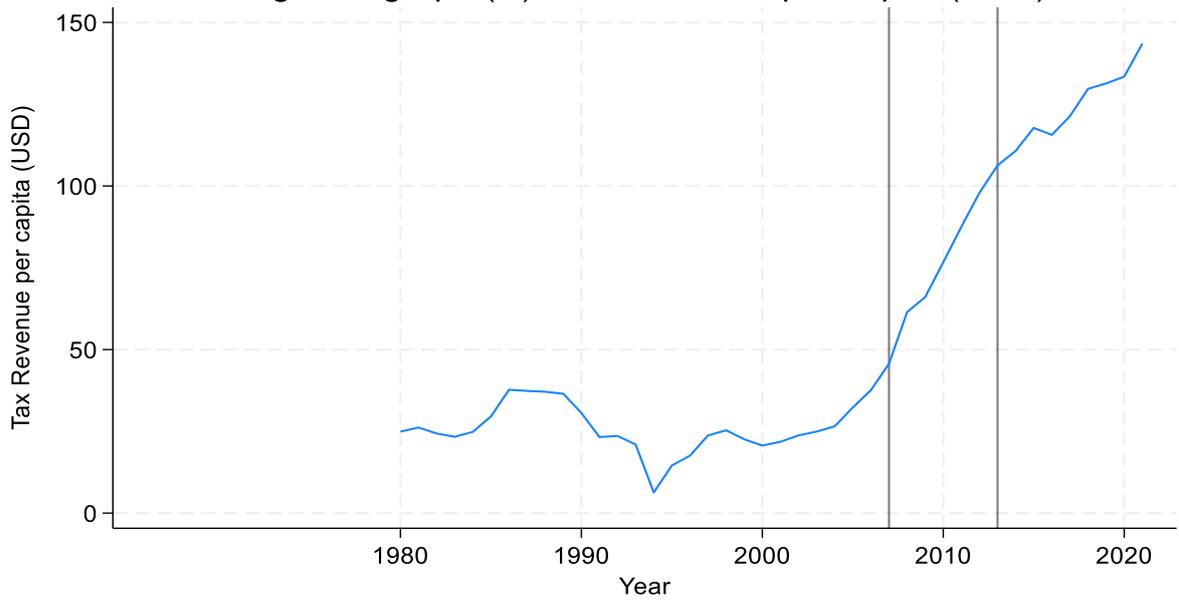
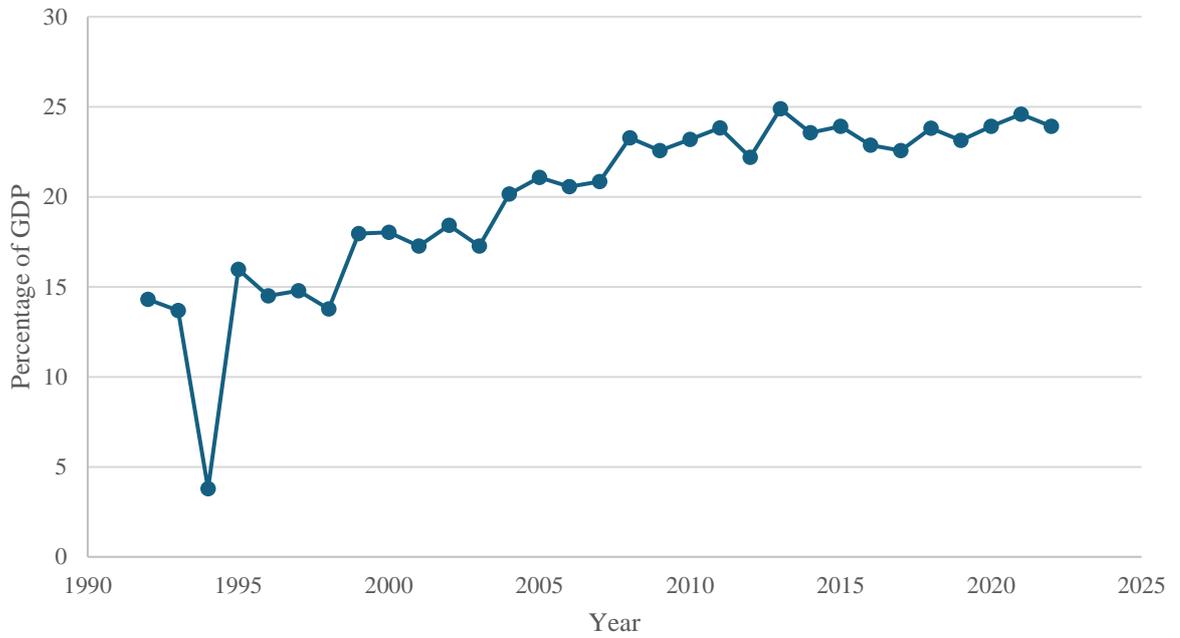


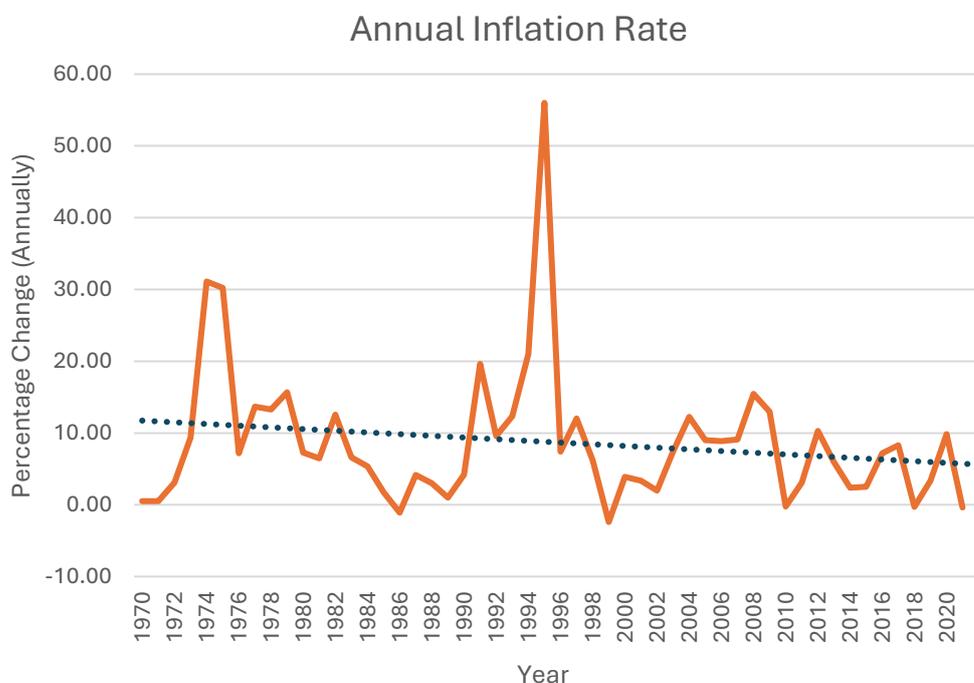
Figure 8

Government Revenue (% GDP)

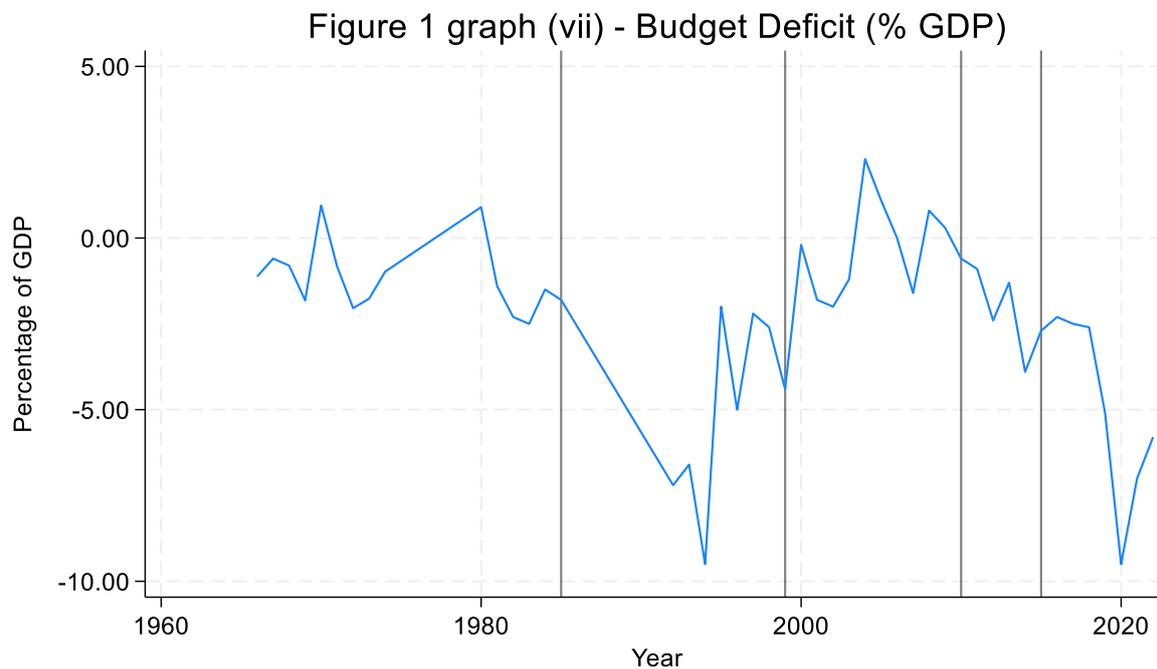


Inflation volatility has improved, which can indicate better macroeconomic management and fiscal prudence (Axelsson & Martins, 2023). **Figure 9** plots inflation from 1970-2020, with the negative trendline implying average inflation fell over time. Moreover, average annual inflation was roughly 9% from 1970-1993 (prior to the genocide, but during the Rwandan Civil War), and 6% from 1996-2021. The largest single-year spike in the first period was related to Habyarimana’s coup, whereas, the largest spike in the second period was related to the (external) Global Financial Crisis, showing improvement in Rwandan political stability and the ability for the GoR to manage volatility.

Figure 9



A visual inspection of the budget deficit over time inspires pessimism (**Figure 1** graph (vii), shown below). After a steeply increasing fiscal deficit from the 1980s, it appeared the deficit was under greater control, until two negative structural breaks in 2010 and 2015 saw the deficit soar, peaking at 9.5% of GDP during Covid-19 in 2020.

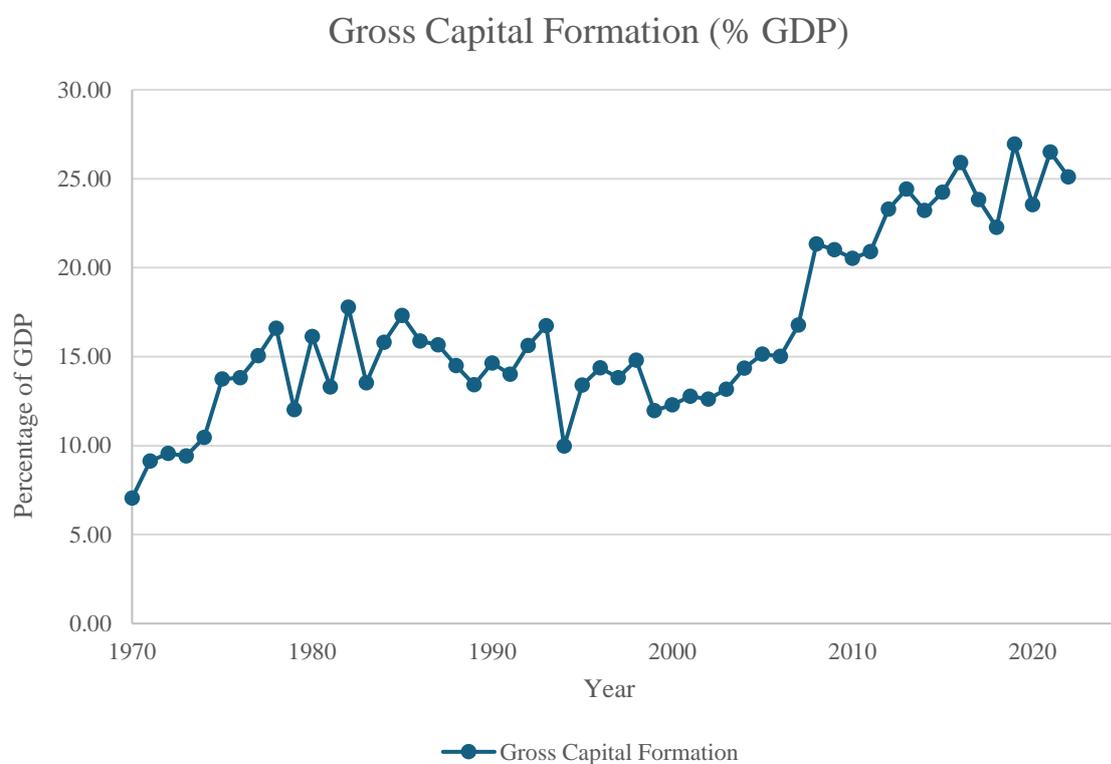


However, the extent to which this indicates *autonomy* is worsening (and whether this is negative for the economy generally), is dependent on the openness of the deals environment – given much of the deficit is driven by strong public investment – where a closed environment refers to an economy based on clientelism, patrimonialism and personal connection. In 2019, 13% of GDP was driven by public investments, which has been financed through external borrowing (including ODA) culminating in substantial deficits (World Bank, 2024v). However, given the widespread clampdown on corruption, and a shift towards a more ordered deals environment with competitive tendering processes, the distribution of funds for projects is more wide than under previous regimes (Behuria & Goodfellow, 2018, p.239). This implies public investment driven budget deficits is not necessarily indicative of a slide towards capture by vested interests.

The RPF and national army have played a pivotal role in kick-starting development through their industrial policy and public investments – with the RPF owning the entire equity in CVL Ltd, which itself owns firms across industries from coffee marketing to food-processing as 100% subsidiaries (Takeuchi, 2019, p.128). The military-funded ‘Military Micro Finance Cooperative Society’ even provided the start-up capital for Horizon Group, which is engaged in business activities from construction to pyrethrum processing (Gökgür, 2012). However, despite the close relationship between government and enterprise, the GoR is committed to not providing services and products that could be more effectively deployed by the private sector, seeking to act as a catalyst for private investment, not as a substitute (MINECOFIN, 2000). Rwanda’s large-scale privatisation campaign

from 1998-2000 demonstrates this, with public utilities and coffee houses shifting to private ownership, though the party and army retained control of strategically important sectors related to post-genocide reconstruction (Ggombe & Newfarmer, 2018). The justification of retaining control of certain firms was that the GoR should play a key role early, and ‘leave’ the activity to the private sector as soon as possible – likened to ‘crowding-in’ private investment (Behuria & Goodfellow, 2018, p.227). This is clearly corroborated by massive increases in gross capital formation as a percentage of GDP, demonstrating that commercial GoR activities have not appeared to crowd-out private investment to any significant extent (**Figure 10**)

Figure 10



The ability for the GoR to credibly function this way – especially given much of the government budget is financed by donor assistance (with ODA accounting for 12.1% of GNI in 2021 (Bertelsmann Stiftung, 2024)) – rested on building a corruption-free environment conducive to enterprise. The NST1 implemented stronger protections for corruption whistleblowers, along with incentive schemes for coming forward from the outset (MINECOFIN, 2017). Moreover, the GoR undertook personnel cuts in the civil service, with accompanying salary increases, in 2006 to reduce corruption incentives. Recruitment for government positions has also been digitised and anonymised (Pellegatta, 2018).

The post-1994 government has had a strong reputation of effectively deploying ODA, to humanitarian activities initially, towards generalised budgetary support used for health, education and sanitation (Pellegatta, 2018). However, a key challenge to *autonomy* remains their strong reliance on ODA to bankroll reforms necessary to accelerate private sector development and growth. For example, in 2012-2013, when ODA was slashed in response to Rwanda's alleged involvement in armed insurgencies in the DRC, Rwanda's GDP growth rate fell by 50% (Pellegatta, 2018). If Rwanda cannot build domestic capacity for production, rebalance the economy, and achieve more budget-raising independence, they risk sliding towards weaker *autonomy* if the GoR machinery ensuring an autonomous environment cannot be adequately maintained.

Thus, Rwandan *autonomy* has been particularly strong since 1994, with a largely meritocratic, low corruption, bureaucracy which has become increasingly capable of planning and executing large scale infrastructure and development projects and encouraging private investment – as demonstrated, in part, by strong tax collection, inflation management, and gross capital formation. This has likely improved Rwanda's shrinking resilience by smoothing the impacts of economic cycles (Andersson et al 2024). However, given much Rwandan investment remains public-led, and donor-financed, with subsequent rising budget deficits (even if they are not inherently negative), *autonomy* remains vulnerable to shocks. Improving domestic capacity to finance these activities could further build resilience to shrinking by reducing reliance on external actors.

7.4 Accountability

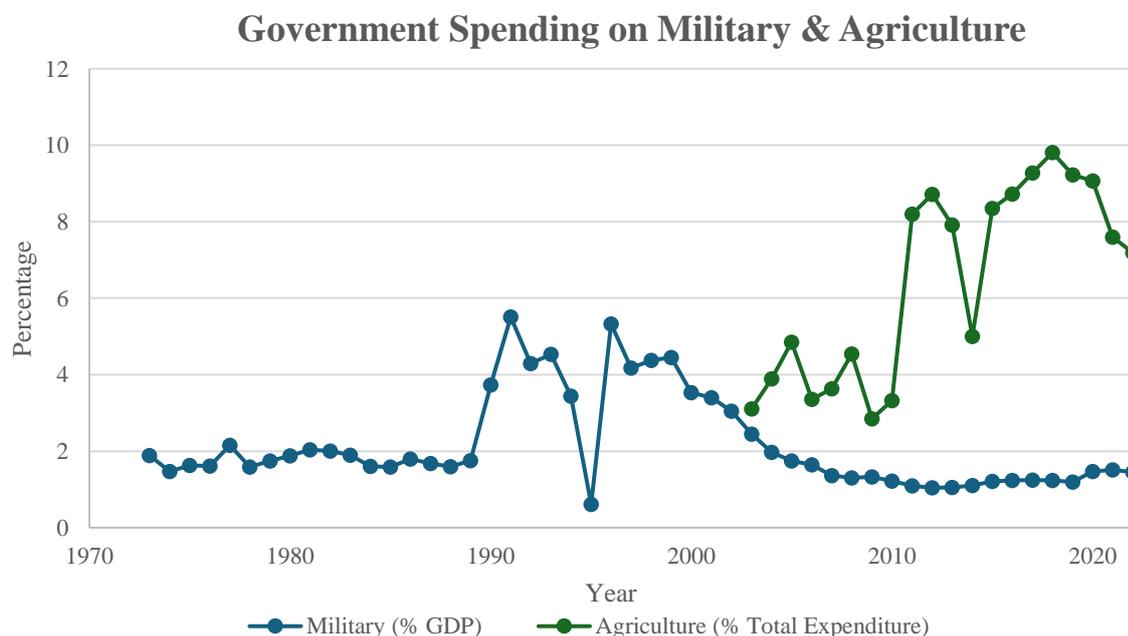
Post-1994 *accountability* has been mixed, with the qualification that, despite Kagame's authoritarianism, the GoR has been staunchly pro-poor and developmental – with elites seeking to enhance incomes in the long-run, rather than short-run maximising (Booth & Golooba-Mutebi, 2012) – thus able to provide the quality governance and public goods typically indicative of accountable states (Andersson & Palacio, 2017).

The RPF did not want to succumb to the governance issues plaguing previous regimes, which they characterised as too reliant on foreign technical assistance, rather than prioritising domestic needs and working to develop local capacity and skills (MINECOFIN, 2000). Thus, the GoR aimed to foster a small, effective, and flexible public sector that could complement the private sector and deploy scarce resources accountably, transparently, and efficiently (MINECOFIN, 2000). This approach appears to be successful, with Rwanda being ranked 7th in a list of most efficient global government's in the WEF Global Competitiveness Report 2014 (Muggeridge, 2015) – as measured by wastefulness

of spending, burden of regulation, and policymaking transparency. Furthermore, reforms like establishing the RRA massively increased the GoR’s tax raising capacity for use in services provision (Bigsten & Yanagizawa, 2006).

Evaluating proxies for public goods provision corroborates the improved post-genocide *accountability*. **Figure 11** shows public spending allocation on military and agriculture for available years, as in Rohne Till (2022). The GoR’s commitment to agriculture is indicative of prioritising broad-based development, given food security is a crucial aspect of inclusive growth (Andersson et al., 2021; Rohne Till, 2022). Moreover, excessive spending on military can signal weaker *accountability* and poorer provision of public goods due to the inherent opportunity cost of public spending, where military spending has little pro-poor, or broad-based, linkages to wider economic development (Grobar & Porter, 1989). Military spending spiked massively at the onset of the Rwandan Civil War, reaching highs of 5.5% in 1991, before falling in the early 2000s after the First and Second Congo Wars ended (CPA, 2024). **Figure 1** graph (viii) presents structural breaks in 1989 and 2002, just prior to the Rwandan Civil War, and during the peace agreement of the Second Congo War (UN, 2003). Agricultural spending rose alongside falling military spending, reaching highs of 9.8% of government expenditure in 2018, which, when viewed alongside the GoR’s numerous agricultural and rural development policies, demonstrate their drive to foster broad-based development (MINECOFIN, 2000, 2017, 2020). Furthermore, under-5 mortality, an indicator of success related to government commitment to providing vital health services, has drastically reduced (**Figure 1** graph (ix)).

Figure 11



However, it has taken time for the GoR to develop their ability to manage and complete increasingly complex projects. In 2004, the World Bank concluded that many aid-financed projects were too ambitious and complex, resulting in cancellations and delays (World Bank, 2004). This demonstrates the scale of improved *accountability*, given later conclusions by scholars arguing the driving force of recent economic growth has been *successful* government investment in projects from roads to electrical grids (Ggombe & Newfarmer, 2018)

Civil liberties and political rights have seen more nuanced change. They are important for enhancing resilience to economic shrinking because they facilitate open discussion, criticism and input on public policy, thus ensuring dynamism in the provision of public goods, institutional reform and resource management (Andersson et al., 2021). However, these aspects of *accountability* have been weak since independence, with Rwanda's Freedom House scores for civil liberties and political rights averaging 5.78 and 6.26 in the post-genocide period (1996-2022), and 5.77 and 6.32 in the pre-genocide period (1972-1993), respectively (Freedom House, 2024) – showing minimal change between the Habyarimana and RPF regimes. Moreover, Rwanda's 'Voice & Accountability' score has been consistently poor, though improved marginally from -1.6 in 1996, to -0.9 in 2022 (still below average) (WB, 2024). They have also made few political concessions to the international community in relation to alleged human rights violations, for example, their extra-judicial killings of political opposition in Rwanda and abroad (Marks & Munshi, 2024), demonstrating the GoR is largely unwilling to increase *accountability* in areas which could contest their "internal political dominance" (Takeuchi, 2019, p.130). As a consequence of the RPF's grip on power, Rwandan civil society is exceedingly weak, with the GoR not acknowledging civil society organisations as full political actors, rather only as service providers, which reduces their ability to question public policy (Pellegatta, 2018). Nevertheless, there have been some attempts to increase broad-based participation in the design, implementation and monitoring of development projects, for example the Community Development Fund from 2000 onwards (Bigsten & Yanagizawa, 2006). Though, this was imposed from the top-down, rather than culminating from grass-roots activism.

It seems Rwanda has managed to build resilience to shrinking despite their mixed record on *accountability*, rather than because of it. Although public goods provision and institutional reform have been largely successful, the GoR maintains tight control over civil and political life, with ultimate power centralised around Kagame. If Rwanda aims to maintain their 'miracle' growth path and continue building resilience to shrinking, they will likely need to invest in truly inclusive institutions (including those in the civil and political spheres) which can outlast Kagame's premiership, and prevent the nation from spiralling back into economic infighting and physical conflicts (Ayittey, 2017). In doing so, they can improve *accountability* such that more impersonal and

perpetual forms of institutions are established to transition Rwanda to a more open-access society (North et al., 2006).

7.5 Social Stability

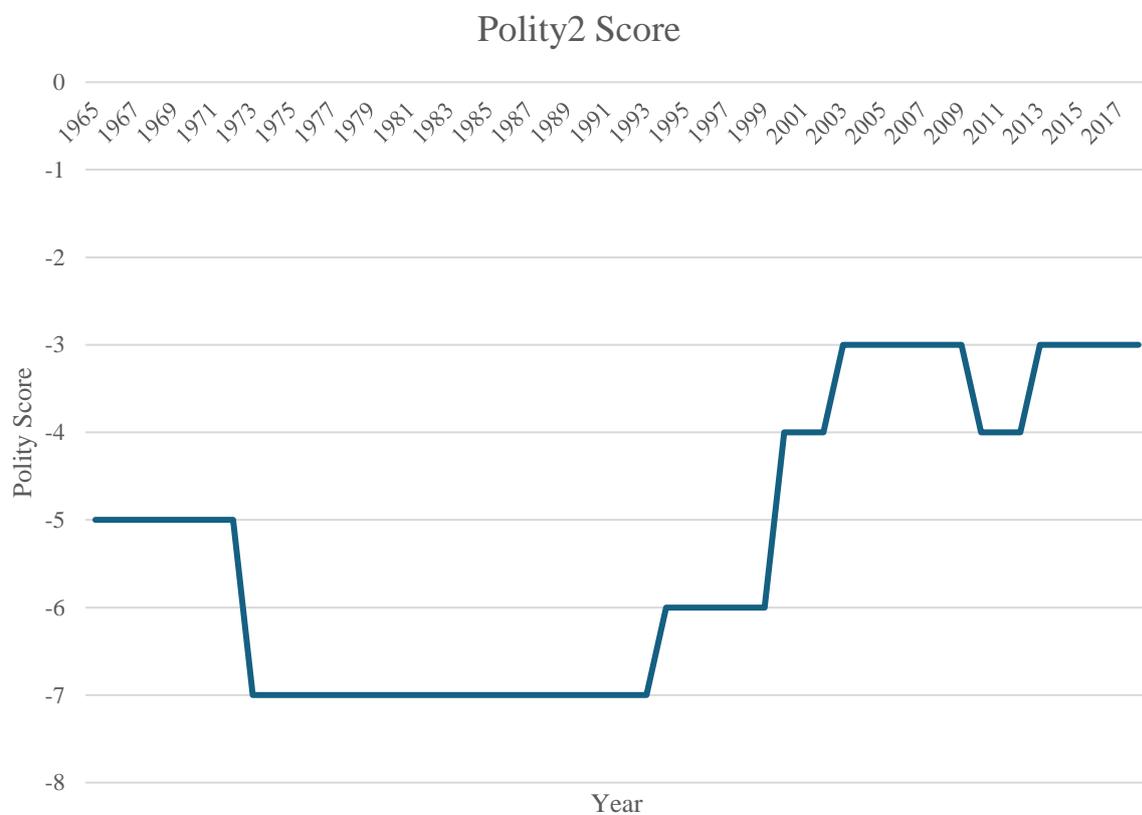
Rwanda's *social stability* has exhibited a dramatic reversal, from the depths of ethnic hatred culminating in genocide in 1994, towards peace. The government made a “triple choice” in the aftermath of the genocide, including staying together, being accountable, and thinking big, with reconciliation remaining a core government value (MINECOFIN, 2020). The level of reconciliation, a key requisite for achieving enduring peace in post-conflict settings, as measured by Rwanda's National Unity & Reconciliation Commission (NURC), has reached 94.7% in 2020, up from 82.3% in 2010 (Sentama, 2022), based on six pillars of reconciliation, including understanding the past, politics, governance, justice and the extent of social cohesion (NURC, 2020).

The reconciliation process, which contributed to improved *social stability*, began with reconstructing legal capacity domestically to try cases involving genocidaires via the Gacaca system, and to try high level genocide instigators through the United Nations International Criminal Tribunal for Rwanda (ICTR). The GoR aimed to help Rwandan society come to terms with the tragedy, and prevent further mass violence (Zorbas, 2004). Of the 800 people employed by the magistrates tribunal before April 1994, only 40 survived, illustrating the magnitude of the task facing Rwanda's tattered justice system (Kumar et al., 1996). The Gacaca system has come to typify Rwanda's legal response to the genocide. It was a community-driven program of local judges presiding over cases of suspects accused of non-organisational crimes (UN, 2012), to promote healing and reconciliation by providing platforms for victims to express themselves, and for perpetrators to confess and show remorse (Zorbas, 2004) – inspired by Rwanda's pre-colonial cultural heritage. Entire communities would gather (this was mandatory, and fines were imposed for non-participation), to hear trials, punish genocidaires, release innocent prisoners, and provide a rhetorical dialogue space (Sentama, 2022). The proceedings were presided over by ‘Inyangamugayo’ within the community – Kinyarwanda for ‘people with integrity’. From 2002-2012, 10,000 courts heard almost two million cases involving one million people (Sentama, 2022), massively expediting the justice process. Without this system, it was estimated to take over a century to clear Rwanda's legal backlog (Zorbas, 2004). This was complemented by the ICTR based in Arusha, Tanzania, which took on high-profile genocidaires, even convicting journalists of inciting ethnic violence – the first since the Nuremburg Trials (UN, 2012). Together, these processes created a high demand on policy-makers to pursue redistributive agendas,

given the previous polarisation in Rwanda which contributed to the genocide. Shared prosperity began to ensure domestic peace (Bigsten & Yanagizawa, 2006).

Assessing Rwanda’s Polity2 score, as in Andersson et al. (2024), which captures the extent of democratic and authoritarian traits¹¹ (and thus how well Rwanda can deal sufficiently with social conflict and ensure sound institutions), shows tentative positive progress (**Figure 12**).

Figure 12



¹¹ See Appendix A **Table 1** for a more detailed variable description.

Habyarimana's regime (1973-1994) was staunchly autocratic (between -10 & -6), with a significant movement towards democracy throughout the RPF-regime – increasing from -7 in 1993, to -3 by 2018, such that they are now classified as an 'anocracy' (CSP, 2024).

Some qualitative assessment demonstrates greater *social stability* strengthening than would necessarily be expected by analysing their Polity score alone. Promotion of stability and reconciliation has been a rallying cry for the GoR since the 1990s, with fostering a shared Rwandan identity clear from Vision 2050 and the NST1 (MINECOFIN, 2017, 2020). For example, principles and programs such as 'Ndi Umunyarwanda' and 'Abarinzi b'Igihango' have been institutionalised and scaled up (MINECOFIN, 2017). Alongside greater citizen-centred feedback and accountability mechanisms enabling people to (at least nominally) participate in policy discussion within their communities (Ggombe & Newfarmer, 2018), this demonstrates a more unified social foundation emerging.

There have, however, been criticisms of Rwanda's approach to reconciliation and *social stability* building – specifically related to the Gacaca system, and the apparent rewriting of history which has introduced potentially problematic elements capable of sparking future division. The Gacaca system was rife with controversy related to human rights concerns and corruption. Over 10,000 Rwandans fled in anticipation of the courts, fearing "false accusations and unfair trials", with violence reported against witnesses and court officials throughout the process (Le Mon, 2008). Also, anecdotal evidence garnered from fieldwork during the trials themselves has suggested that many survivors attempted to undermine the Rwandan authorities by laughing during perpetrator confessions, or glaring at officials, demonstrating that for some, the obligation to forgive was resented (Blackie et al., 2018). Though, the NURC data on reconciliation rates, to the extent that they can be trusted, seem to show these perspectives have changed positively over time. Moreover, there were systematic failures to investigate potential RPF war crimes during 1994, and subsequently in Eastern DRC, which has cast doubt on the GoR's dedication to true reconciliation, as opposed to punishing Hutus, and has enabled genocide-apologists to undermine the reconciliation process by arguing parity between the genocide itself, and the RPF's alleged crimes (Zorbas, 2004). This is exacerbated by the ongoing politicisation of Rwanda's history, which has paved the way for laws regarding inciting 'divisionism' – which are vague and curtail freedom of expression (Zorbas, 2004) – meaning the use of speech or likely to "spark conflict" (Buckley-Zistel, 2009). Due to the top-down nature of history discourse (such as through "ingandos" – 'civic education camps') and censorship, the wounds of ethnic conflict likely remain – especially given family and community members often informally relay interpretations of the nation's past to their children (Buckley-Zistel, 2009).

Therefore, while the GoR has clearly made progress towards *social stability* and reconciliation, as shown by increased reconciliation and Polity2 scores in the NURC and CSP data, through the Gacaca system and ICTR, evidence suggests fractures remain. Interviews demonstrate that Rwandans understand their current power paradigm in which returnee Tutsi exiles constitute the majority of the RPF elite, generating resentment (Buckley-Zistel, 2009). Control over Rwanda's historical narrative has become part of the RPF's internal political dominance, linking with *autonomy*. Success in the other pillars of social capability may be offsetting the remaining scars of conflict, given conflict tends to decrease with income (Ray & Esteban, 2017). To ensure Rwanda maintains their trajectory, *social stability* must be strengthened more inclusively, lest economic shocks, like food price inflation (Andersson et al., 2024), reinvigorate past conflict.

8. Conclusion

Since the Rwandan genocide, one of the fastest mass-killings in human history, the country's already weak productive infrastructure was destroyed, with the nation robbed of "a generation of trained teachers, doctors, public servants and private entrepreneurs" (MINECOFIN, 2000). It threw the economy and society into disarray, with Rwandan social capabilities often deteriorating to their weakest state's since gaining independence. The minor *structural transformation* which had taken place exhibited a reversal, with agricultural share of GDP spiking alongside the same share of employment, indicating a collapse in the modern services and industrial sectors (**Figure 2**). Rwanda became much less inclusive – both in terms of monetary and non-monetary measures – with life expectancy falling, the provision of education weakening, and the Gini coefficient rising. The state's ability to exert *autonomy* dissipated, enabling entrenched extremist Hutu groups operating within state owned companies, to import machetes and other weapons required to carry out the genocide (Verwimp, 2006). Furthermore, it caused widespread macroeconomic chaos, with an almost total collapse in tax collection, and spiralling inflation and budget deficits. *Accountability* worsened as quality of governance and provision of public goods fell, driven by the Habyarimana regime's need to fight the Rwandan Civil War. What little political and civil rights that existed were weakened, and military spending ballooned. Finally, *social stability*, already tumultuous due to the simmering conflicts between Tutsi and Hutu prior to 1994, driven in part by the institutionalisation of ethnic discrimination under Belgian colonial occupation, imploded entirely. Friends, neighbours, and even family members, turned on each other, leading to 100 days of state-sanctioned slaughter. How then did Rwanda achieve such remarkable economic growth, build resilience to economic shrinking, increase living standards, and foster social reconciliation, at such a blistering pace, from a position of such weak social capability? Abramovitz emphasised that, if a nation is technologically backward, it was necessary to be "socially advanced" to enable Kuznets-style 'modern' economic growth (Abramovitz, 1995). However, given Rwanda was heavily constrained by institutional factors, market size, and social attitudes in the aftermath of 1994, such that social capabilities were exceedingly weak, how was their dramatic turnaround engineered?

By employing a mixed-methods investigation into Rwandan social capability over time, this paper has sought to shed light on how and why Rwanda was able to build resilience to economic shrinking. Assessing each aspect of Rwandan social capability in detail, utilising the framework operationalised in Andersson & Palaccio (2017), has provided a nuanced angle, and centralisation of ideas on Rwanda's post-1994 transformation, with previous literature typically opting for in-depth investigations of certain drivers (like ODA).

The results demonstrated, answering the research question, that improved governance, driven by an aspirational, yet competent, vision of developmentalism and pro-poor inclusive growth, was one of the primary factors behind Rwanda's appreciating social capability. *Structural transformation* has been a key focus, with large-scale programs functionally implemented to increase productivity and release agrarian labour to more 'modern' sectors – although the workforce still remains largely agrarian. A strong emphasis on poverty reduction and increasing living standards has facilitated improved *inclusion*, with 'Vision 2020', '2050', and the NST1 placing health, education and employment as core pillars, despite the recent slowdown in poverty reduction and stagnant high inequality. Women's *inclusion* also greatly benefited from government support and positive discrimination, although informal barriers still remain. *Autonomy* benefited from crackdowns on corruption, and the formalisation and digitisation of government services, like tax collection, which has streamlined government operations, while minimising the influence of vested interests in decision-making – as can be partly inferred from better-managed inflation. Building *accountability* has taken time, but a focus on improving domestic productive capacity, rather than relying on foreign technical assistance, has enhanced the ability of the GoR to deliver public goods and strengthen governance. Civil liberties and political rights, however, have remained largely unchanged since independence, although some marginal policies related to enabling communities to participate in their own development process has provided some forums for holding the government accountable. The level of *social stability* in Rwanda today would have been unthinkable in 1994. Government policies centred on abolishing the ethnic categorisation of Rwandans ('Ndi Umunyarwanda', Kinyarwanda for 'I am Rwanda' (MINECOFIN, 2000)) and fostering reconciliation by trying the participants of the genocide, both in formal ICTR and informal Gacaca courts, has facilitated improved *social stability*. However, despite surveys suggesting reconciliation levels are high, field research casts doubt on to what extent – demonstrating deep social cleavages remain, though, non-violent conflict reduction mechanisms have become more effective.

Regardless of the remaining challenges, a strong state was central to these positive developments, with a competent, technocratic, and pro-poor developmental machinery focusing on rural interventions, human capital, and ensuring social stability. Notwithstanding improvements in the GoR's ability to raise taxes to fund their investment-oriented budgets, achieving this Vision for Rwanda has been dependent on international donor support – which, although the donor community has previously demonstrated a high tolerance for Kagame's autocratic rule, is not completely unwavering; as shown by the fall in ODA during Rwanda's alleged involvement in DRC insurgencies. For Rwanda to maintain the positive social capability trajectory experienced since 1994, continue building resilience to economic shrinking, and place themselves on a convergence path for their 2050 high-income status aspirations, they must ensure inclusivity in the reconciliation process to ensure weakening *social stability* does not derail progress in the other pillars of social stability. Furthermore,

accelerating structural transformation to generate non-agricultural employment, developing the productive capacity to wean off their reliance on international support, creating institutional arrangements capable of outlasting Kagame, and further reducing poverty and inequality to include all Rwandans in their on-going economic success is paramount – from women subsistence farmers in Nyamasheke, to construction workers in Kigali, who are, together, shaping Rwanda’s hopeful future.

References

- Abramovitz, M. (1986). Catching Up, Forging Ahead, and Falling Behind, *The Journal of Economic History*, vol. 46, no. 2, pp.385–406
- Abramovitz, M. (1995). The Elements of Social Capability, in B. H. Koo & D. H. Perkins (eds), *Social Capability and Long-Term Economic Growth*, [e-book] London: Palgrave Macmillan UK, pp.19–47, Available Online: http://link.springer.com/10.1007/978-1-349-13512-7_3 [Accessed 9 April 2024]
- Adelman, I. & Morris, C. T. (1968). Performance Criteria For Evaluating Economic Development Potential: An Operational Approach, *The Quarterly Journal of Economics*, vol. 82, no. 2, pp.260–280
- AFI. (2023). INCREASING WOMEN’S FINANCIAL INCLUSION AND CLOSING THE WOMEN’S SME CREDIT GAP IN RWANDA THROUGH ENABLING FINANCIAL POLICY AND REGULATION, Kuala Lumpur, Malaysia: Alliance for Financial Inclusion (AFI), Available Online: <https://www.afi-global.org/wp-content/uploads/2023/03/Increasing-Womens-Financial-Inclusion-and-Closing-the-Womens-SME-Credit-Gap-In-Rwanda-Through-Enabling-Financial-Policy-Regulation.pdf>
- Aghion, P., Howitt, P. & Mayer-Foulkes, D. (2004). The Effect of Financial Development on Convergence: Theory and Evidence, Working Paper, 10358, Available Online: <https://www.nber.org/papers/w10358> [Accessed 22 April 2024]
- Alesina, A. & Rodrik, D. (1994). Distributive Politics and Economic Growth*, *The Quarterly Journal of Economics*, vol. 109, no. 2, pp.465–490
- Alvi, E. & Senbeta, A. (2012). Does Foreign Aid Reduce Poverty?, *Journal of International Development*, vol. 24, no. 8, pp.955–976
- Andersson, J. & Andersson, M. (2019). Beyond Miracle and Malaise. Social Capability in Côte d’Ivoire and Senegal during the Development Era 1930–1980, *Studies in Comparative International Development*, vol. 54, no. 2, pp.210–232
- Andersson, M. (2018). Resilience to Economic Shrinking: A Social Capability Approach to Processes of Catching up in the Developing World 1951-2016, *Resilience to Economic Shrinking*
- Andersson, M., Axelsson, T. & Palacio, A. (2021). Resilience to Economic Shrinking in an Emerging Economy: The Role of Social Capabilities in Indonesia, 1950–2015, *Journal of Institutional Economics*, vol. 17, no. 3, pp.509–526
- Andersson, M., Juliá, J. P. & Palacio Chaverra, A. F. (2024). Resilience to Economic Shrinking: Reinterpreting the Asian Economic Miracle in a Comparative Perspective, 1964–2018, *Development Studies Research*, vol. 11, no. 1, p.2309207
- Andersson, M. & Palacio, A. (2017). Catch up Growth and Social Capability in Developing Countries: A Conceptual and Measurement Proposal, *OASIS*, no. 26, pp.7–23
- Atake, E.-H. & Gnakou Ali, P. (2019). Women’s Empowerment and Fertility Preferences in High Fertility Countries in Sub-Saharan Africa, *BMC Women’s Health*, vol. 19, no. 1, p.54

- Axelsson, T. & Martins, I. (2023). Resilience to Shrinking as a Catch-Up Strategy: A Comparison of Brazil and Indonesia, 1964–2019, *Studies in Comparative International Development*, [e-journal], Available Online: <https://link.springer.com/10.1007/s12116-023-09392-1> [Accessed 2 May 2024]
- Ayittey, G. B. N. (2017). The Non-Sustainability of Rwanda’s Economic Miracle, *Journal of Management and Sustainability*, vol. 7, no. 2, p.88
- Bai, J. & Perron, P. (1998). Estimating and Testing Linear Models with Multiple Structural Changes, *Econometrica*, vol. 66, no. 1, pp.47–78
- Bai, J. & Perron, P. (2003). Critical Values for Multiple Structural Change Tests, *The Econometrics Journal*, vol. 6, no. 1, pp.72–78
- Balchin, N., Hoekman, B. M., Martin, H., Mendez-Parra, M., Papadavid, P. & Te Velde, D. W. (2016). Trade in Services and Economic Transformation, [e-journal], Available Online: <https://cadmus.eui.eu/handle/1814/44716> [Accessed 14 May 2024]
- Banerjee, A. V. & Duflo, E. (2007). The Economic Lives of the Poor, *Journal of Economic Perspectives*, vol. 21, no. 1, pp.141–168
- Barkat, K., Mrabet, Z. & Alsamara, M. (2016). Does Official Development Assistance for Health from Developed Countries Displace Government Health Expenditure in Sub-Saharan Countries?, [e-journal], Available Online: <http://qspace.qu.edu.qa/handle/10576/20740> [Accessed 26 April 2024]
- Barro, R. J. & Sala-i-Martin, X. (1992). Convergence, *Journal of Political Economy*, vol. 100, no. 2, pp.223–251
- Bates, Greif, Levi, Rosenthal & Weingast. (1998a). Analytical Narratives, [e-book] Princeton: Princeton University Press, Available Online: <https://press.princeton.edu/books/paperback/9780691001296/analytic-narratives>
- Bates, R. H., Grief, A., Levi, Rosenthal & Weingast, B. R. (1998b). Analytic Narratives, [e-book] Princeton, N.J: Princeton University Press, Available Online: <https://press.princeton.edu/books/paperback/9780691001296/analytic-narratives>
- Behuria, P. (2016). Centralising Rents and Dispersing Power While Pursuing Development? Exploring the Strategic Uses of Military Firms in Rwanda, *Review of African Political Economy*, vol. 43, p.630
- Behuria, P. & Goodfellow. (2018). The Disorder of ‘Miracle Growth’ in Rwanda: Understanding the Limitations of Transitions to Open Ordered Development, in L. Pritchett, K. Sen, & E. Werker (eds), *Deals and Development: The Political Dynamics of Growth Episodes*, First edition., [e-book] Oxford, United Kingdom: Oxford University Press, Available Online: <https://academic.oup.com/book/6796/chapter/150948559>
- Berg, A., Ostry, J. D. & Zettelmeyer, J. (2012). What Makes Growth Sustained?, *Journal of Development Economics*, vol. 98, no. 2, pp.149–166
- Bertelsmann Stiftung. (2024). Rwanda Country Report 2024, Country Report, BTI, Available Online: https://bti-project.org/fileadmin/api/content/en/downloads/reports/country_report_2024_RWA.pdf

- Besley & Persson. (2013). Taxation and Development, in *Handbook of Public Economics*, Vol. 5, [e-book] Amsterdam: Elsevier, Available Online: <https://www.lse.ac.uk/economics/Assets/Documents/personal-pages/tim-besley/working-papers/taxation-and-development.pdf>
- Bigsten, A. & Yanagizawa. (2006). Growth and Poverty Reduction: Evaluating Rwanda's First PRS, Stockholm: Sida, Available Online: <https://www.sida.se/publikationer/growth-and-poverty-reduction-evaluating-rwandas-first-prs>
- Blackie, L., University of Nottingham, Hitchcott, N., & University of St Andrews. (2018). 'I Am Rwandan': Unity and Reconciliation in Post-Genocide Rwanda, *Genocide Studies and Prevention*, vol. 12, no. 1, pp.24–37
- Bloom, D. E., Canning, D. & Sevilla, J. (2002). Technological Diffusion, Conditional Convergence, and Economic Growth, Working Paper, 8713, Available Online: <https://www.nber.org/papers/w8713> [Accessed 22 April 2024]
- BLS. (2024). CPI Inflation Calculator, Available Online: <https://data.bls.gov/cgi-bin/cpicalc.pl>
- Boettke, P. J. (1993). Why Perestroika Failed, London: Routledge
- Booth, D. & Golooba-Mutebi, F. (2012). Developmental Patrimonialism? The Case of Rwanda, *African Affairs*, vol. 111, no. 444, pp.379–403
- Boudreaux, K. & Ahluwalia, P. (2009). Cautiously Optimistic: Economic Liberalization and Reconciliation in Rwanda's Coffee Sector, *Denver Journal of International Law & Policy*, [e-journal] vol. 37, no. 2, Available Online: <https://digitalcommons.du.edu/djilp/vol37/iss2/2>
- Broadberry, S. & Wallis, J. J. (2017). Growing, Shrinking, and Long Run Economic Performance: Historical Perspectives on Economic Development, Working Paper, 23343, Available Online: <https://www.nber.org/papers/w23343> [Accessed 21 May 2024]
- Buckley-Zistel, S. (2009). Nation, Narration, Unification? The Politics of History Teaching after the Rwandan Genocide, *Journal of Genocide Research*, vol. 11, no. 1, pp.31–53
- Chawla. (2023). Rwanda's Dependency on Foreign Aid and How It Affects the GDP: A Critical Analysis of Rwanda's Future Economy, *SSRG International Journal of Economics and Management Studies*, vol. 10, no. 6, pp.1–6
- Christensen, Z. (2023). Economic Poverty Trends: Global, Regional and National - Factsheet, Factsheet, Development Initiatives (DI), Available Online: https://devinit-prod-static.ams3.cdn.digitaloceanspaces.com/media/documents/Economic_poverty_factsheet_June_2023.pdf
- CPA. (2024). Conflict in the Democratic Republic of Congo, *Center for Preventative Action (CPA) - Global Conflict Tracker*, Available Online: <https://www.cfr.org/global-conflict-tracker/conflict/violence-democratic-republic-congo>
- CSP. (2024). About Polity Project, Available Online: <https://www.systemicpeace.org/polityproject.html>
- Curtis. (2017). Development Assistance and the Lasting Legacies of Rebellion in Burundi and Rwanda, in *Fragility, Aid, and State-Building - Understanding Diverse Trajectories*, UK: Routledge

- CVL Ltd. (2022). Crystal Ventures Ltd - About Us, *Crystal Ventures Ltd*, Available Online: <https://cvl.co.rw/#about>
- Ditzen, J., Karavias, Y. & Westerlund, J. (2021). Testing and Estimating Structural Breaks in Time Series and Panel Data in Stata, arXiv:2110.14550, Available Online: <http://arxiv.org/abs/2110.14550> [Accessed 5 May 2024]
- Dobermann & Caselli. (2018). Rethinking Traditional Structural Transformation, *The International Growth Centre (IGC)*, Available Online: <https://www.theigc.org/blogs/rethinking-traditional-structural-transformation>
- Doucouliagos, H. & Paldam, M. (2008). Aid Effectiveness on Growth: A Meta Study, *European Journal of Political Economy*, vol. 24, no. 1, pp.1–24
- EAC. (2024). Partner States - Republic of Rwanda, *East African Community (EAC)*, Available Online: <https://www.eac.int/eac-partner-states/rwanda>
- Edwards, S. (2015). Economic Development and the Effectiveness of Foreign Aid: A Historical Perspective, *Kyklos*, vol. 68, no. 3, pp.277–316
- Ewerling, F., Lynch, J. W., Mittinty, M., Raj, A., Victora, C. G., Coll, C. V. & Barros, A. J. (2020). The Impact of Women’s Empowerment on Their Children’s Early Development in 26 African Countries, *Journal of Global Health*, vol. 10, no. 2, p.020406
- Ezemenari, Kebede & Lahiri. (2008). The Fiscal Impact of Foreign Aid in Rwanda: A Theoretical and Empirical Analysis, Available Online: <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=cc28c99934035a4d00c31d4500d39769a99867f4>
- Fayissa, B. & Nsiah, C. (2013). The Impact of Governance on Economic Growth in Africa, *The Journal of Developing Areas*, vol. 47, no. 1, pp.91–108
- Freedom House. (2024). Freedom in the World 2024, Washington DC: Freedom House, Available Online: https://freedomhouse.org/sites/default/files/2024-02/FIW_2024_DigitalBooklet.pdf
- Friedman, M. & Schwartz, A. J. (1963). A Monetary History of the United States, 1867-1960, [e-book] Princeton University Press, Available Online: <https://www.jstor.org/stable/j.ctt7s1vp> [Accessed 21 May 2024]
- Fromm, I. (2015). Coffee Farming in Rwanda: Savoring Success, *Newsletter of SDC Agriculture & Food Security Network*, [e-journal], Available Online: https://www.shareweb.ch/site/Agriculture-and-Food-Security/news/Documents/2015_02_coffee_rwanda_fromm.pdf
- Gathani, S. & Stoelinga, D. (2012). Understanding Rwanda’s Export Sector, International Growth Centre (IGC), Available Online: https://www.laterite.com/wp-content/uploads/2020/07/Understanding-Rwandas-Export-Sector_final.pdf
- Gerschenkron, A. (1979). Economic Backwardness in Historical Perspective: A Book of Essays, Cambridge, Mass.: Belknap Pr
- Ggombe, K. M. & Newfarmer, R. S. (2018). Rwanda: From Devastation to Services-First Transformation, in R. Newfarmer, J. Page, & F. Tarp (eds), *Industries without Smokestacks: Industrialization in Africa Reconsidered*, [e-book] Oxford University Press, p.0, Available Online: <https://doi.org/10.1093/oso/9780198821885.003.0016> [Accessed 26 April 2024]

- Gökgür, N. (2012). Rwanda's Ruling Party-Owned Enterprises: Do They Enhance or Impede Development?, 2012.03, *IOB Discussion Papers*, [e-journal], Available Online: <https://ideas.repec.org/p/iob/dpaper/2012003.html> [Accessed 17 May 2024]
- Grimm, S. (2013). Aid Dependency as a Limitation to National Development Policy?, in *African Agency in International Politics*, 1st Edition., [e-book] Routledge, Available Online: <https://www.taylorfrancis.com/books/edit/10.4324/9780203526071/african-agency-international-politics-william-brown-sophie-harman?refId=e9885d7b-5060-478e-b3d6-023ab972a778&context=ubx>
- Grobar, L. M. & Porter, R. C. (1989). Benoit Revisited:: Defense Spending and Economic Growth in LDCs, *Journal of Conflict Resolution*, vol. 33, no. 2, pp.318–345
- Habyarimana & Dushimayezu. (2018). Good Governance, Economic Growth and Development: Insights from a 22-Year Econometric Analysis in Rwanda, in *Rwanda Handbook of Economic and Social Policy*, Vol. 1, [e-book] Jönköping International Business School and University of Rwanda, Available Online: <https://dr.ur.ac.rw/bitstream/handle/123456789/821/Rwanda%20Handbook%20Manuscript%20Open%20Access.pdf?sequence=1#page=166>
- Heldring, L. (2021). The Origins of Violence in Rwanda, *The Review of Economic Studies*, vol. 88, no. 2, pp.730–763
- Hickel, J., Dorninger, C., Wieland, H. & Suwandi, I. (2022). Imperialist Appropriation in the World Economy: Drain from the Global South through Unequal Exchange, 1990–2015, *Global Environmental Change*, vol. 73, p.102467
- Horowitz, J. L. (2019). Bootstrap Methods in Econometrics, *Annual Review of Economics*, vol. 11, no. Volume 11, 2019, pp.193–224
- ICNL. (2023). Civic Freedom Monitor - Rwanda, *International Center for Not-For-Profit Law (ICNL)*, Available Online: <https://www.icnl.org/resources/civic-freedom-monitor/rwanda>
- IMF. (2023). Rwanda: Selected Issues, *IMF Staff Country Reports*, [e-journal] vol. 2023, no. 423, Available Online: <https://www.elibrary.imf.org/view/journals/002/2023/423/article-A001-en.xml> [Accessed 16 May 2024]
- IMF. (2024a). General Government Net Lending/Borrowing, Available Online: https://www.imf.org/external/datamapper/GGXCNL_NGDP@WEO/RWA?zoom=RWA&highlight=RWA
- IMF. (2024b). Government Revenue, Percent of GDP, Available Online: <https://www.imf.org/external/datamapper/rev@FPP/USA/FRA/JPN/GBR/SWE/ESP/ITA/ZA/IND>
- IMF. (2024c). Inflation Rate, Average Consumer Prices, Available Online: <https://www.imf.org/external/datamapper/PCPIPCH@WEO/RWA?zoom=RWA&highlight=RWA>
- Johnston, B. F. & Mellor, J. W. (1961). The Role of Agriculture in Economic Development, *The American Economic Review*, vol. 51, no. 4, pp.566–593
- Jones, B. F. & Olken, B. A. (2008). The Anatomy of Start-Stop Growth, *The Review of Economics and Statistics*, vol. 90, no. 3, pp.582–587

- Kironde, E. (2009). Rwanda State of Environment and Outlook Report 2009, *Rwanda Environment Management Authority (REMA)*, Available Online: <https://www.rema.gov.rw/soe/background.php> [Accessed 24 April 2024]
- Kojima, K. (2000). The “Flying Geese” Model of Asian Economic Development: Origin, Theoretical Extensions, and Regional Policy Implications, *Journal of Asian Economics*, vol. 11, no. 4, pp.375–401
- Konadu-Agyemang, K. (2000). The Best of Times and the Worst of Times: Structural Adjustment Programs and Uneven Development in Africa: The Case Of Ghana, *The Professional Geographer*, vol. 52, no. 3, pp.469–483
- Kumar, K., Knapp, C., Maynard, K., Manikas, P. & Sheckler, A. (1996). Rebuilding Postwar Rwanda: The Role of the International Community, 76, Center for Development & Evaluation, Available Online: <https://www.oecd.org/derec/unitedstates/50189461.pdf>
- Kuznets, S. (1973). Modern Economic Growth: Findings and Reflections, *The American Economic Review*, vol. 63, no. 3, pp.247–258
- Le Mon, C. (2008). Rwanda’s Troubled Gacaca Courts, SSRN Scholarly Paper, 1080662, Available Online: <https://papers.ssrn.com/abstract=1080662> [Accessed 21 May 2024]
- Lewis, W. A. (1954). Economic Development with Unlimited Supplies of Labour, *The Manchester School*, vol. 22, no. 2, pp.139–191
- LODA. (2024). Vision Umurenge Program (VUP), *Local Administrative Entities Development Association (LODA)*, Available Online: <https://www.loda.gov.rw/vup>
- LSE. (2019). Fragility and Uneven Aid in the African Great Lakes, *LSE Blogs*, Available Online: <https://blogs.lse.ac.uk/africaatlse/2019/03/19/fragility-and-uneven-aid-in-the-african-great-lakes/>
- Mahembe, E. & Odhiambo, N. M. (2019). Foreign Aid and Poverty Reduction: A Review of International Literature, *Cogent Social Sciences*, vol. 5, no. 1, p.1625741
- Makina, D. (2010). Historical Perspective on Zimbabwe’s Economic Performance: A Tale of Five Lost Decades, *Journal of Developing Societies*, vol. 26, no. 1, pp.99–123
- Mansour, M. (2014). Tax Revenue Dataset for Sub-Saharan Africa: 1980-2010, *FERDI - Fondation Pour Les Etudes et Recherches Sur Le Developpement International*, Available Online: <https://ferdi.fr/en/indicators/tax-revenue-dataset-for-sub-saharan-africa-1980-2010> [Accessed 6 May 2024]
- Marks, S. & Munshi, N. (2024). How the West’s Favorite Autocrat Engineered Africa’s Most Dramatic Turnaround, *Bloomberg*, Available Online: <https://www.bloomberg.com/news/features/2024-01-25/rwanda-s-paul-kagame-is-the-west-s-favorite-autocrat>
- Marshall & Gurr. (2020). Political Regime Characteristics and Transitions, 1800-2018 - Dataset Users’ Manual, User Manual, Center for Systemic Peace, Available Online: <https://www.systemicpeace.org/inscr/p5manualv2018.pdf>
- Mensah, E., Owusu, S., Foster-McGregor, N. & Szirmai, A. (2023). Structural Change, Productivity Growth and Labour Market Turbulence in Sub-Saharan Africa, *Journal of African Economies*, vol. 32, no. 3, pp.175–208

- Miguel, E., Satyanath, S. & Sergenti, E. (2004). Economic Shocks and Civil Conflict: An Instrumental Variables Approach, *Journal of Political Economy*, vol. 112, no. 4, pp.725–753
- Milanovic, B. (2009). Global Inequality And The Global Inequality Extraction Ratio: The Story Of The Past Two Centuries, [e-book] The World Bank, Available Online: <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-5044> [Accessed 15 May 2024]
- MINECOFIN. (2000). Vision 2020, Policy Paper, Kigali, Rwanda: Ministry of Finance & Economic Planning, Available Online: [https://www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/RWANDA\)%20Rwanda%20Vision%202020.pdf](https://www.greenpolicyplatform.org/sites/default/files/downloads/policy-database/RWANDA)%20Rwanda%20Vision%202020.pdf)
- MINECOFIN. (2017). 7 Years Government Programme: National Strategy for Transformation (NST1), Policy Paper, Kigali, Rwanda: Ministry of Finance & Economic Planning, Available Online: <https://faolex.fao.org/docs/pdf/rwa206814.pdf>
- MINECOFIN. (2020). Vision 2050, Policy Paper, Kigali, Rwanda: Ministry of Finance & Economic Planning, Available Online: https://www.minecofin.gov.rw/fileadmin/user_upload/Minecofin/Publications/REPORTS/National_Development_Planning_and_Research/Vision_2050/English-Vision_2050_Abridged_version_WEB_Final.pdf
- MoE Rwanda. (1998). Plan of Action for Education in Rwanda, 1998-2000: Recovery and Development, Programme & Meeting Document, ED.98/WS/20, Kigali, Rwanda: Ministère de l'éducation Rwanda (MoE) & UNDP, Available Online: <https://unesdoc.unesco.org/ark:/48223/pf0000112093> [Accessed 16 May 2024]
- Mohan, R. (2023). Good Governance Is Good Development, in R. M. Nag & H. S. Kohli (eds), *From Here to Denmark: The Importance of Institutions for Good Governance*, [e-book] Oxford University Press, p.0, Available Online: <https://doi.org/10.1093/oso/9780198893103.003.0003> [Accessed 22 April 2024]
- Muggeridge, P. (2015). Which Countries Have the Most – and Least – Efficient Governments?, *World Economic Forum (WEF) - Geo-Economics & Politics*, Available Online: <https://www.weforum.org/agenda/2015/07/efficient-government/>
- Murthy, N. R. V. & Ukpolo, V. (1999). A Test of the Conditional Convergence Hypothesis: Econometric Evidence from African Countries, *Economics Letters*, vol. 65, no. 2, pp.249–253
- Mwai, C. (2018). Solution to Africa's Problems Cannot Be Imported – Kagame, *The New Times*, Available Online: <https://www.newtimes.co.rw/article/148230/News/solution-to-africaas-problems-cannot-be-imported-a-kagame>
- Nell, K. S. (2020). Evaluating the Conditional Convergence Hypothesis in the Post-1989 Globalization Period, *Applied Economics*, vol. 52, no. 30, pp.3308–3326
- Neumayer, E. (2003). Beyond Income: Convergence in Living Standards, Big Time, *Structural Change and Economic Dynamics*, vol. 14, no. 3, pp.275–296
- Newbury, C. (1998). Ethnicity and the Politics of History in Rwanda, *Africa Today*, vol. 45, no. 1, pp.7–24
- NISR. (2015). Integrated Household Living Conditions Survey (EICV4), Rwanda Poverty Profile Report, Kigali, Rwanda: National Institute of Statistics of Rwanda, Available Online:

<https://www.statistics.gov.rw/datasource/integrated-household-living-conditions-survey-4-eicv-4>

- NISR. (2018). Integrated Household Living Conditions Survey (EICV5), Rwanda Poverty Panel Report, Kigali, Rwanda: National Institute of Statistics of Rwanda, Available Online: <https://www.statistics.gov.rw/publication/eicv5poverty-panel-report>
- Nkurunziza, J., Broekhuis, A. & Hooimeijer, P. (2012). Free Education in Rwanda: Just One Step towards Reducing Gender and Sibling Inequalities, *Education Research International*, vol. 2012, p.e396019
- North, D. C., Wallis, J. J. & Weingast, B. R. (2013). Violence and Social Orders a Conceptual Framework for Interpreting Recorded Human History, New edition., Cambridge: Cambridge University Press
- North, D., Wallis, J. J. & Weingast, B. (2006). A Conceptual Framework for Interpreting Recorded Human History, w12795, Cambridge, MA: National Bureau of Economic Research, p.w12795, Available Online: <http://www.nber.org/papers/w12795.pdf> [Accessed 23 February 2024]
- Nsabimana, A., Niyitanga, F., Weatherspoon, D. D. & Naseem, A. (2021). Land Policy and Food Prices: Evidence from a Land Consolidation Program in Rwanda, *Journal of Agricultural & Food Industrial Organization*, vol. 19, no. 1, pp.63–73
- NURC. (2020). Rwanda Reconciliation Barometer 2020, Kigali, Rwanda: National Unity and Reconciliation Commission, Available Online: <https://www.rwandainun.gov.rw/actualites/info-details/rwanda-reconciliation-barometer-2020-published> [Accessed 17 May 2024]
- ODIN. (2022). Country Profile - Rwanda, Available Online: <https://odin.akroninc.net/Report/countryProfileUpdated/RWA?year=2022>
- OECD. (2024). What Does Rwanda Export? (1995-2022), Available Online: <https://oec.world/en/visualize/stacked/hs92/export/rwa/all/show/1995.2022>
- Ohkawa, K. & Rosovsky, H. (1973). Japanese Economic Growth: Trend Acceleration in the Twentieth Century, in *Japanese Economic Growth*, [e-book] Stanford University Press, Available Online: <https://www.degruyter.com/document/doi/10.1515/9781503622746/html> [Accessed 22 April 2024]
- Oro & Arias. (2012). Rwanda's Economic Success: How Free Markets Are Good for Poor Africans, *Foundation for Economic Education*, Available Online: <https://fee.org/articles/rwandas-economic-success-how-free-markets-are-good-for-poor-africans/> [Accessed 22 April 2024]
- Ostrom, E. (1990). Governing the Commons: The Evolution of Institutions for Collective Action, [e-book] Cambridge: Cambridge University Press, Available Online: <https://www.cambridge.org/core/books/governing-the-commons/7AB7AE11BADA84409C34815CC288CD79> [Accessed 21 May 2024]
- Pellegatta, M. (2018). Case of Rwanda: A Transition towards Good Governance, Available Online: <https://www.againstcorruption.eu/wp-content/uploads/2021/02/ERCAS-Working-Paper-n.-64-Rwanda-Michela-Pellegatta.pdf>
- Pritchett, L. (1997). Divergence, Big Time, *Journal of Economic Perspectives*, vol. 11, no. 3, pp.3–17

- Quah, D. T. (1996). Empirics for Economic Growth and Convergence, *European Economic Review*, vol. 40, no. 6, pp.1353–1375
- Ray, D. & Esteban, J. (2017). Conflict and Development, *Annual Review of Economics*, vol. 9, no. Volume 9, 2017, pp.263–293
- ReSAKSS. (2024). Regional Strategic Analysis and Knowledge Support System (ReSAKSS), Available Online: <https://www.resakss.org/>
- Revenga & Shetty. (2012). Empowering Women Is Smart Economics, *Finance & Development (IMF)*, vol. 49, no. 1, Available Online: <https://www.imf.org/external/pubs/ft/fandd/2012/03/revenga.htm>
- Riddell, A. & Niño-Zarazúa, M. (2016). The Effectiveness of Foreign Aid to Education: What Can Be Learned?, *International Journal of Educational Development*, vol. 48, pp.23–36
- Rivera-Batiz, F. L. (2002). Democracy, Governance, and Economic Growth: Theory and Evidence, *Review of Development Economics*, vol. 6, no. 2, pp.225–247
- ROAPE. (2019). A Straightforward Case of Fake Statistics, *Review of African Political Economy (ROAPE)*, Available Online: <https://roape.net/2019/04/18/a-straightforward-case-of-fake-statistics/>
- Rodrik, D. (1999). Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses, *Journal of Economic Growth*, vol. 4, no. 4, pp.385–412
- Rodrik, D. (ed.). (2003). In Search of Prosperity: Analytic Narratives on Economic Growth, Princeton: Princeton University Press
- Rodrik, D. (2014). An African Growth Miracle?, Working Paper, 20188, Available Online: <https://www.nber.org/papers/w20188> [Accessed 23 April 2024]
- Rohne Till, E. (2022). Is This Time Different? Social Capability and Catch-up Growth in Ethiopia, 1950–2020, *Journal of International Development*, vol. 34, no. 7, pp.1259–1281
- RRA. (2024b). Tax Statistics in Rwanda Fiscal Year 2015/16, Available Online: https://www.rra.gov.rw/fileadmin/user_upload/tax_statistic_in_rwanda__fy_2015-2016.pdf
- RRA. (2024a). Tax Statistics in Rwanda - Fiscal Year 2021/2022 - 5th Edition, Available Online: https://www.rra.gov.rw/fileadmin/user_upload/RRA_Tax_Statistics_2021-2022.pdf
- Rwandapedia. (2024a). How Does Ubudehe Work?, *Rwandapedia - Homegrown Solutions*, Available Online: <https://rwandapedia.rw/hgs/ubudehe/how-it-works>
- Rwandapedia. (2024b). How Girinka Works, *Rwandapedia - Homegrown Solutions*, Available Online: <https://rwandapedia.rw/hgs/girinka/how-it-works>
- Santos-Paulino, A. U. (2005). Trade Liberalisation and Economic Performance: Theory and Evidence for Developing Countries, *The World Economy*, vol. 28, no. 6, pp.783–821
- Schipani, A. (2023). Rwanda Criticised for Backing Rebels in DRC Accused of Atrocities, *The Financial Times*, Available Online: <https://www.ft.com/content/a383687e-7c79-4312-8018-415e44749fe9?accessToken=zwAGGPY3AFzAkdOjg2h-fHIDEtOAGFeRHSf6Q.MEUCIQDqFKicx-auuoSoufi->

NtnSPz6KxAGdk_ezj65M6dk0BgIgBGs2SEjY_xQ6smv8fmlAln5gxo1_ojJ7THzOD42nC4o
&sharetype=gift&token=fb4915e1-b1ec-4f72-b52f-b3a532c850f6

- Sentama, E. (2022). National Reconciliation in Rwanda: Experiences and Lessons Learnt, Italy: European University Institute (EUI), Available Online: <https://cadmus.eui.eu/bitstream/handle/1814/74338/QM-09-22-105-EN-N%5B54%5D.pdf?sequence=1&isAllowed=y>
- Serneels, P. & Verpoorten, M. (2015). The Impact of Armed Conflict on Economic Performance: Evidence from Rwanda, *Journal of Conflict Resolution*, vol. 59, no. 4, pp.555–592
- Singh, A. (1997). Financial Liberalisation, Stockmarkets and Economic Development, *The Economic Journal*, vol. 107, no. 442, pp.771–782
- Skarbek, D. & Skarbek, E. (2023). Analytic Narratives in Political Economy, *History of Political Economy*, vol. 55, no. 4, pp.609–638
- Smythe, A., Martins, I. & Andersson, M. (2024). Inequality, Poverty, and Resilience to Economic Shrinking, *International Journal of Development Issues*, vol. 23, no. 1, pp.40–81
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth, *The Quarterly Journal of Economics*, vol. 70, no. 1, pp.65–94
- Solt, F. (2020). Measuring Income Inequality Across Countries and Over Time: The Standardized World Income Inequality Database, *Social Science Quarterly*, vol. 101, no. 3, pp.1183–1199
- Stiglitz, J. E. (2016). Inequality and Economic Growth, [e-journal], Available Online: <https://academiccommons.columbia.edu/doi/10.7916/d8-gjpw-1v31> [Accessed 9 January 2024]
- Takagi, Y., Kanchoochat, V. & Sonobe, T. (eds). (2019). Developmental State Building: The Politics of Emerging Economy, Singapore: Springer
- Takeuchi, S. (2019). Development and Developmentalism in Post-Genocide Rwanda, in Y. Takagi, V. Kanchoochat, & T. Sonobe (eds), *Developmental State Building*, [e-book] Singapore: Springer Nature Singapore, pp.121–134, Available Online: https://link.springer.com/10.1007/978-981-13-2904-3_6 [Accessed 2 January 2024]
- Tang, K.-B. & Bundhoo, D. (2017). Foreign Aid and Economic Growth in Developing Countries: Evidence from Sub-Saharan Africa, *Theoretical Economics Letters*, vol. 07, no. 05, pp.1473–1491
- Temple, J. & Johnson, P. A. (1998). Social Capability and Economic Growth, *The Quarterly Journal of Economics*, vol. 113, no. 3, pp.965–990
- Timmer, C. (1988). Chapter 8 The Agricultural Transformation, in *Handbook of Development Economics*, Vol. 1, [e-book] Elsevier, pp.275–331, Available Online: <https://www.sciencedirect.com/science/article/pii/S1573447188010113> [Accessed 2 May 2024]
- UN. (2002). Final Report of the Panel of Experts on the Illegal Exploitation of Natural Resources and Other Forms of Wealth of the Democratic Republic of the Congo, UN Security Council, Available Online: <https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/DRC%20S%202002%201146.pdf>

- UN. (2003). INTER-CONGOLESE POLITICAL NEGOTIATION - THE FINAL ACT, Available Online: https://peacemaker.un.org/sites/peacemaker.un.org/files/CD_030402_SunCityAgreement.pdf
- UN. (2012). The Justice and Reconciliation Process in Rwanda, Available Online: <https://www.un.org/en/preventgenocide/rwanda/pdf/bgjustice.pdf>
- UN Women. (2018). Revisiting Rwanda Five Years after Record-Breaking Parliamentary Elections, *UN Women - News Stories*, Available Online: <https://www.unwomen.org/en/news/stories/2018/8/feature-rwanda-women-in-parliament>
- UN Women. (n.d.). Succinct Information on the Implementation of the Agreed Conclusions on ‘Women’s Economic Empowerment in the Changing World of Work’ (CSW), UN Women, Available Online: <https://www.unwomen.org/sites/default/files/2022-06/Rwanda%20%28EN%29.pdf>
- UNCTAD. (2014). Who Is Benefiting from Trade Liberalisation in Rwanda? A Gender Perspective, Geneva: United Nations Conference on Trade & Development (UNCTAD), Available Online: https://unctad.org/system/files/official-document/ditc2014d2_en.pdf
- UNDP. (2024). GENDER INEQUALITY INDEX (GII), Available Online: <https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII>
- Venugopalan, H. (2016). Understanding the Conflict in Congo, *ORF Issue Brief*, [e-journal] no. 139, Available Online: https://www.orfonline.org/wp-content/uploads/2016/05/ORF_IssueBrief_139_Venugopalan_Final.pdf
- Verpoorten, M. (2005). The Death Toll of the Rwandan Genocide: A Detailed Analysis for Gikongoro Province, *Population*, vol. 60, no. 4, pp.331–367
- Verwimp, P. (2003). The Political Economy of Coffee, Dictatorship, and Genocide, *European Journal of Political Economy*, vol. 19, no. 2, pp.161–181
- Verwimp, P. (2006). Machetes and Firearms: The Organization of Massacres in Rwanda, *Journal of Peace Research*, vol. 43, no. 1, pp.5–22
- Wallis, A. (2020). Rwanda’s Forgotten Years: Reconsidering the Role and Crimes of Akazu 1973–1993, *Journal of International Peacekeeping*, vol. 22, no. 1–4, pp.40–59
- WB. (2024). World Bank Worldwide Governance Indicators - Voice & Accountability, Available Online: <https://databank.worldbank.org/Institutional-Quality/id/98e680fc>
- Wilson & Blood. (2019). Rwanda: Where Even Poverty Data Must Toe Kagame’s Line, *The Financial Times*, Available Online: <https://www.ft.com/content/683047ac-b857-11e9-96bd-8e884d3ea203>
- World Bank. (1974). Recent Economic Development and Prospects of Rwanda, Volume 1: The Main Report, Report No. 422a-RW, The World Bank, Available Online: <https://documents1.worldbank.org/curated/en/274621468145750775/pdf/multi0page.pdf>
- World Bank. (1976). Memorandum on the Economy of Rwanda, Report No. 1108-RW, The World Bank, Available Online: <https://documents1.worldbank.org/curated/en/925841468106445900/pdf/multi0page.pdf>

- World Bank. (1986). Recent Economic Developments and Current Policy Issue, Report No. 6191-RW, The World Bank, Available Online:
<https://documents1.worldbank.org/curated/en/378391468106486286/pdf/multi0page.pdf>
- World Bank. (2004). Rwanda - Country Assistance Evaluation, IEG Evaluation, 27568-RW, Washington DC: The World Bank, Available Online:
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/239451468759916593/Rwanda-Country-assistance-evaluation> [Accessed 17 May 2024]
- World Bank. (2023a). Population, Total - Rwanda, Available Online:
<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=RW>
- World Bank. (2023b). GDP (Current US\$) - Rwanda, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=RW>
- World Bank. (2024a). GDP per Capita (Current US\$) - United States, Burundi, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2022&locations=US-BI&start=1990>
- World Bank. (2024b). GDP per Capita (Current US\$) - OECD Members, Sub-Saharan Africa, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2022&locations=OE-ZG&start=1990>
- World Bank. (2024c). GDP per Capita, PPP (Current International \$) - Sub-Saharan Africa, OECD Members, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?locations=ZG-OE>
- World Bank. (2024d). GDP per Capita (Current US\$) - Rwanda, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=RW>
- World Bank. (2024e). Life Expectancy at Birth, Total (Years) - Sub-Saharan Africa, Rwanda, Available Online: <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=ZG-RW>
- World Bank. (2024f). Access to Electricity (% of Population) - Rwanda, Sub-Saharan Africa, Available Online: <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=RW-ZG>
- World Bank. (2024g). GDP per Capita (Current US\$) - Brazil, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=BR>
- World Bank. (2024h). Official Exchange Rate (LCU per US\$, Period Average) - Rwanda, Available Online: <https://data.worldbank.org/indicator/PA.NUS.FCRF?locations=RW>
- World Bank. (2024i). GDP Growth (Annual %) - Rwanda, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=RW>
- World Bank. (2024j). GDP Growth (Annual %) - Sub-Saharan Africa, Available Online:
<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ZG>
- World Bank. (2024k). Agriculture, Forestry, and Fishing, Value Added (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=RW>
- World Bank. (2024l). GNI (Current US\$) - Rwanda, Available Online:
<https://data.worldbank.org/indicator/NY.GNP.MKTP.CD?locations=RW>

World Bank. (2024m). Net ODA Received (% of GNI) - Rwanda, Sub-Saharan Africa, Available Online: <https://data.worldbank.org/indicator/DT.ODA.ODAT.GN.ZS?locations=RW-ZG>

World Bank. (2024n). Foreign Direct Investment, Net Inflows (BoP, Current US\$), Available Online: <https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>

World Bank. (2024o). Data Quality and Effectiveness, *World Bank - Data Help Desk - Data Compilation Methodology*, Available Online: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906534-data-quality-and-effectiveness>

World Bank. (2024p). Military Expenditure (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=RW>

World Bank. (2024q). Mortality Rate, under-5 (per 1,000 Live Births) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SH.DYN.MORT?locations=RW>

World Bank. (2024r). Domestic Credit to Private Sector (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?locations=RW>

World Bank. (2024s). International Tourism, Receipts (Current US\$) - Rwanda, Available Online: <https://data.worldbank.org/indicator/ST.INT.RCPT.CD?locations=RW>

World Bank. (2024t). Exports of Goods and Services (Current US\$) - Rwanda, Available Online: <https://data.worldbank.org/indicator/NE.EXP.GNFS.CD?locations=RW>

World Bank. (2024u). Inflation, Consumer Prices (Annual %) - Rwanda, Available Online: <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=RW>

World Bank. (2024v). The World Bank in Rwanda, *World Bank*, Available Online: <https://www.worldbank.org/en/country/rwanda/overview> [Accessed 16 May 2024]

World Bank. (2024w). Manufacturing, Value Added (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=RW>

World Bank. (2024x). Services, Value Added (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?locations=RW>

World Bank. (2024y). School Enrollment, Primary (% Gross) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SE.PRM.ENRR?locations=RW>

World Bank. (2024z). School Enrollment, Primary, Female (% Gross) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SE.PRM.ENRR.FE?locations=RW>

World Bank. (2024aa). School Enrollment, Primary, Male (% Gross) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SE.PRM.ENRR.MA?locations=RW>

World Bank. (2024ab). School Enrollment, Secondary, Male (% Gross) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SE.SEC.ENRR.MA?locations=RW>

World Bank. (2024ac). School Enrollment, Secondary, Female (% Gross) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SE.SEC.ENRR.FE?locations=RW>

World Bank. (2024ad). Adolescent Fertility Rate (Births per 1,000 Women Ages 15-19) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SP.ADO.TFRT?locations=RW>

- World Bank. (2024ae). Fertility Rate, Total (Births per Woman) - Rwanda, Available Online: <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=RW>
- World Bank. (2024af). Gross Capital Formation (% of GDP) - Rwanda, Available Online: <https://data.worldbank.org/indicator/NE.GDI.TOTL.ZS?locations=RW>
- Yin, L., Zestos, G. K. & Michelis, L. (2003). Economic Convergence in the European Union, *Journal of Economic Integration*, vol. 18, no. 1, pp.188–213
- Young, A. (2012). The African Growth Miracle, *Journal of Political Economy*, vol. 120, no. 4, pp.696–739
- Zhuang, J., Gunatilake, Niimi, Khan, Jiang, Hasan, Khor, Lagman-Martin, Bracey & Huang. (2009). Financial Sector Development, Economic Growth, and Poverty Reduction: A Literature Review, *Economics Working Papers - Asian Development Bank*, [e-journal] no. 173, Available Online: <https://www.adb.org/publications/financial-sector-development-economic-growth-and-poverty-reduction-literature-review> [Accessed 14 May 2024]
- Zorbas, E. (2004). Reconciliation in Post-Genocide Rwanda, *African Journal of Legal Studies*, vol. 1, no. 1, pp.29–52

Appendix A

Table 1 – Variable Descriptions and Sources

Social Capability	Variable	Unit	Source	Description	Corresponding Figure
Transformation	Labour Productivity	In 2005 Rwandan Francs	Mensah et al. (2023)	Author calculation based on data from EASD, specifically, gross value added in the total economy at constant 2005 RWF prices, divided by total employed persons	Figure 1 graph (i)
Transformation	Agricultural Gap Share	Difference in percentage between agricultural share of GDP and share of employment	World Bank (2024k) Mensah et al. (2023)	Author calculation based on agricultural share of GDP (World Bank), and employment share in agriculture (EASD). Employment share minus GDP share.	Figure 1 graph (ii)
Transformation	Domestic Credit to Private Sector	As percentage of GDP	World Bank (2024r)	Taken from the World Bank. "Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment".	Figure 1 graph (iii)
Transformation	Sectoral Composition (Agriculture)	As percentage of GDP	World Bank (2024k)	Taken from the World Bank. "Agriculture, forestry, and fishing corresponds to ISIC divisions 1-3 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production".	Figure 2

Transformation	Sectoral Composition (Manufacturing)	As percentage of GDP	World Bank (2024v)	Taken from the World Bank. "Manufacturing refers to industries belonging to ISIC divisions 15-37. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs".	Figure 2
Transformation	Sectoral Composition (Services)	As percentage of GDP	World Bank (2024w)	Taken from the World Bank. "Services correspond to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services".	Figure 2
Transformation	Employment Share (Agriculture)	As percentage of total workers	Mensah et al. (2023)	Author calculation based on data from EASD, specifically, number of employed persons in agriculture divided by total employed persons	Figure 3
Transformation	Employment Share (Industry)	As percentage of total workers	Mensah et al. (2023)	Author calculation based on data from EASD, specifically, number of employed persons in industry divided by total employed persons	Figure 3
Transformation	Employment Share (Services)	As percentage of total workers	Mensah et al. (2023)	Author calculation based on data from EASD, specifically, number of employed persons in services divided by total employed persons	Figure 3
Inclusion	Life Expectancy (Years)	Life expectancy at birth in years	World Bank (2024e)	Taken from the World Bank. "Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life".	Figure 1 graph (iv)

Inclusion	Primary school enrolment	As percentage of gross enrolment	World Bank (2024x)	Taken from the World Bank. "Gross enrollment ratio in primary school is the ratio of primary enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown".	Figure 1 graph (v) Figure 6
Inclusion	Poverty Headcount Rate (government thresholds)	Percentage of population	NISR (2018)	Taken from the EICV5. Data points reflect percentage of population living below RWF 159,375 per year in January 2014 prices (as documented in NISR (2015)).	Figure 4
Inclusion	Poverty Headcount Rate (\$2.15 p/d)	Percentage of population	ReSAKSS (2024)	Taken from ReSAKSS database, with figures given in 2017 PPP dollars.	Figure 4
Inclusion	Gini Index	Percentage	Solt (2020)	Taken from the SWIID 9 database on inequality. "It incorporates data from the OECD Income Distribution Database, the Socio-Economic Database for Latin America and the Caribbean generated by CEDLAS and the World Bank, Eurostat, the World Bank's PovcalNet, the UN Economic Commission for Latin America and the Caribbean, national statistical offices around the world, and academic studies while minimizing reliance on problematic assumptions by using as much information as possible from proximate years within the same country".	Figure 5

Inclusion	Inequality Extraction Ratio (IER)	Percentage	Milanovic (2009) NISR (2015) BLS (2024) World Bank (2024h)	Author own calculation based on formula in Milanovic (2009). Measures the ratio between the Gini index, and the maximum possible inequality possible given the population lives at subsistence level, with the remaining surplus captured by an infinitesimally small group of elites. Subsistence calorie intake (2,500kcal) of 105,064 RWF per year from NISR (2015). Conversion of daily subsistence RWF figure per day to USD per day completed using World Bank historical exchange rate data. Expressing the daily subsistence amount in 2024 dollars completed using US inflation calculator (BLS, 2024).	Figure 5
Inclusion	Primary School Enrolment (Male)	As percentage of gross enrolment	World Bank (2024z)	Taken from World Bank. Gross enrolment in primary school for only males.	Figure 6
Inclusion	Primary School Enrolment (Female)	As percentage of gross enrolment	World Bank (2024y)	Taken from World Bank. Gross enrolment in primary school for only females.	Figure 6
Inclusion	Secondary School Enrolment (Male)	As percentage of gross enrolment	World Bank (2024ab)	Taken from World Bank. Gross enrolment in primary school for only males.	Figure 6
Inclusion	Secondary School Enrolment (Female)	As percentage of gross enrolment	World Bank (2024aa)	Taken from World Bank. Gross enrolment in secondary school for only females.	Figure 6
Inclusion	Adolescent Fertility Rate	Births per 1,000	World Bank (2024ac)	Taken from the World Bank. "Adolescent fertility rate is the number of births per 1,000 women ages 15-19".	Figure 7

Inclusion	Adult Fertility Rate	Births per woman	World Bank (2024ad)	Taken from the World Bank. "Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year".	Figure 7
Autonomy	Tax Revenue per capita	USD tax revenue per person	World Bank (2023a) World Bank (2024h) Mansour (2014) RRA (2024a; 2024b)	Author calculation based on World Bank (RWF-USD conversion rates, and population), Mansour (2014) (tax revenue per capita in RWF from 1980-2010), and the RRA tax statistics documents (tax revenue from 2010-2021). RRA data was divided by World Bank population data to return 2010-2021 tax revenue per capita in RWF. This was converted to USD using World Bank historical conversion rates.	Figure 1 graph (vi)
Autonomy	Government Revenue	Percentage of GDP	IMF (2024b)	Taken from the IMF. Compiled from the Public Finances in Modern History Database.	Figure 8
Autonomy	Budget Deficit	Percentage of GDP	World Bank (2023b) World Bank (1974; 1976; 1986) IMF (2024b)	Taken from IMF and World Bank. IMF data for 1992-2022. World Bank data taken from 3 archived reports which detail public revenue and expenditure. Public revenue minus expenditure from the archived documents was expressed as a percentage of GDP using Rwandan GDP data - also from the World Bank.	Figure 1 (vii)

Autonomy	Annual Inflation Rate	Annual percentage change	World Bank (2024ae) IMF (2024c)	Taken from the World Bank (entire period bar 1994-1995) and IMF (1994-1995). IMF used to supplement due to missing years in World Bank data. Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly	Figure 9
Autonomy	Gross Capital Formation	Percentage of GDP	World Bank (2024af)	Taken from the World Bank. "Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories".	Figure 10
Accountability	Government Spending on Military	Percentage of GDP	World Bank (2024p)	Taken from the World Bank. "Military expenditures data from SIPRI are derived from the NATO definition, which includes all current and capital expenditures on the armed forces, including peacekeeping forces; defense ministries and other government agencies engaged in defense projects; paramilitary forces, if these are judged to be trained and equipped for military operations; and military space activities".	Figure 11
Accountability	Government Spending on Agriculture	Percentage of total government expenditure	ReSAKSS (2024)	Taken from ReSAKSS database from 2003-2020 (only available observations).	Figure 11
Accountability	Under-5 Mortality	Deaths per 1,000 newborns before age 5	World Bank (2024q)	Taken from the World Bank. It is "the probability per 1,000 that a newborn baby will die before reaching age five, if subject to age-specific mortality rates of the specified year".	Figure 1 graph (ix)

Accountability	Civil Liberties	Index score from 1-7	Freedom House (2024)	Taken from Freedom House. Index runs from 1-7, with 1 denoting fully free, and 7 denoting not free. Between 5.5-7 is unfree.	No Figure
Accountability	Political Rights	Index score from 1-7	Freedom House (2024)	Taken from Freedom House. Index runs from 1-7, with 1 denoting fully free, and 7 denoting not free. Between 5.5-7 is unfree.	No Figure
Accountability	Voice & Accountability	From -2.5 to 2.5, in units of a standard normal distribution	WB (2024)	Taken from the World Bank's Worldwide Governance Indicators (WGI). "Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5".	No Figure
Social Stability	Polity2 Score	Index from +10 (strongly democratic), to -10 (strongly autocratic)	CSP (2024)	Taken from the CSP's Polity5 Project database. "Polity2 is a modified version of the POLITY variable added in order to facilitate the use of the POLITY regime measure in time-series analyses", but is computed still by subtracting the AUTO score from DEMOC score.	Figure 12 & Figure 1 graph (x)

Appendix B

Maximum Number of Breaks Calculation

To calculate this figure (5 maximum breaks), as discussed in the end notes of Rohne Till (2022), an ‘interstitial period’ (h) – the minimum number of years between structural breaks – must be chosen. Too short a period, and the algorithm risks flagging structural breaks that are more related to cyclical trends than ‘true’ breaks, however, too long a period, and the algorithm could miss potentially important breaks. To avoid anomalies, the maximum number of breaks is set as $(T/h) - 2$ (Berg et al., 2012). Thus, given $T = 58$ (years from 1965-2022), and $h = 8$, then $(58/8) - 2 = 5.25$ (rounded down to 5).