



LUND UNIVERSITY

Agriculture for Development in the 21st Century

Evidence from Ethiopia

Rohne Till, Emelie

2021

Document Version:

Publisher's PDF, also known as Version of record

[Link to publication](#)

Citation for published version (APA):

Rohne Till, E. (2021). *Agriculture for Development in the 21st Century: Evidence from Ethiopia*. [Doctoral Thesis (compilation), Lund University School of Economics and Management, LUSEM]. Lund.

Total number of authors:

1

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Agriculture for Development in the 21st Century

Evidence from Ethiopia

EMELIE ROHNE TILL

LUND STUDIES IN ECONOMIC HISTORY 99 | LUND UNIVERSITY



Agriculture for Development in the 21st Century – Evidence from Ethiopia

The 21st century has seen the concurrent rise of optimism about the prospects for African economic development and the return of the agricultural sector to the development agenda. Ethiopia is a prime example of both, given its rapid economic growth in the last two decades and its policy focus on the agricultural sector. Taking Ethiopia's rapid—but so far relatively short—growth experience as a case study, this thesis explores three aspects of development: the role of the agricultural sector in the economic development of today's low-income countries, the likelihood that the current growth episode in Ethiopia will turn into sustained economic growth, and the role of the state in both agricultural and sustained economic growth.

This thesis applies both historical and economic methods to address its research questions, including the construction of three purpose-built datasets, calculations of economic multipliers based on multiple Social Accounting Matrices, and an analytic narrative approach. The thesis employs these methods to make a historically and empirically grounded contribution to the current debate.

The thesis finds that the Ethiopian agricultural sector has undergone a Green Revolution—the first national-level Green Revolution in sub-Saharan Africa—and that agricultural growth has been central to economic growth due to Ethiopia's economic structure. It also finds that the state can play a large role both in igniting agricultural growth and in sustaining economic growth. Based on these findings, the thesis argues that the agricultural sector remains an important engine of growth in today's low-income countries, and that there is scope for governments in contemporary low-income countries to take a leading role both in the transformation of the agricultural sector and on the path to sustained economic growth.

Agriculture for Development in the 21st Century

Evidence from Ethiopia

Emelie Rohne Till



LUND
UNIVERSITY

DOCTORAL DISSERTATION

by due permission of the School of Economics and Management, Lund University,
Sweden.

To be defended at Alfa 1: 2003, on 4 June 2021 at 09:15.

Faculty opponent
Christopher Cramer

Organization LUND UNIVERSITY Department of Economic History Author(s) Emelie Rohne Till		Document name Doctoral Dissertation Date of issue 2021-05-12 Sponsoring organization	
Title and subtitle Agriculture for Development in the 21 st Century: Evidence from Ethiopia			
Abstract The 21st century has seen a rise of optimism about the prospects for African economic development, and Ethiopia, with its rapid economic growth in the last two decades, is at the forefront of this current wave of optimism. The rapid growth has been achieved under a policy focus on the agricultural sector – another aspect of development that has seen a renewed wave of optimism in the 21st century. Recovering from two decades of neglect in the 1980s and 1990s, the role of the agricultural sector in economic growth has again risen to the top of the development agenda among many scholars, policymakers, and donors. This forms the starting point of this thesis, which uses Ethiopia's rapid, but so far relatively short, growth experience as a case to study three aspects of development: the role of the agricultural sector for economic development in today's low-income countries; the likelihood of that the current growth episode in Ethiopia will turn into sustained economic growth; and the role of the state in both agricultural and sustained economic growth. Four main findings emerge from the research. First, that Ethiopia has undergone a "Green Revolution", defined as a specific case of agricultural development where crop output and crop yields double at the national level in under 25 years (Paper 2). Second, that agricultural growth has been central to the aggregate growth given Ethiopia's economic structure (Paper 3) and, thereby, that the renewed interest in agriculture-for-development seems warranted (Paper 1). Third, that the state has a large role in igniting agricultural growth, especially via agricultural public spending (Paper 2), and in sustaining economic growth (Paper 4). Fourth and lastly, the thesis finds that while a focus on agricultural growth as a means to achieve aggregate economic growth can be warranted during the initial phases of development (Paper 3), rapid agricultural growth does not automatically translate into sustained growth. This is instead conditioned by a country's social capability, as defined and discussed in Paper 4. The thesis contributes to the previous literature by lending support to the large body of work arguing that the agricultural sector is important for initial economic growth in low-income countries, and by addressing the importance of both public spending and of a country's social capability for agricultural and aggregate growth. It also provides three purpose-built datasets to the literature: on agricultural production and agricultural public spending in Ethiopia 1994-2018; on four elements of Ethiopia's social capability 1950-2019; and on the bibliometric trends of the literature on the role of agriculture in economic growth 1969-2015. Based on the findings emerging from the thesis's four papers, the thesis concludes that the agricultural sector continues to be an important engine of growth in today's low-income countries, and that there is scope for states to take a leading role both in the transformation of the agricultural sector and on the path to sustained economic growth.			
Key words Agriculture, economic development, social capability, sub-Saharan Africa, Ethiopia			
Classification system and/or index terms (if any)			
Supplementary bibliographical information		Language	
ISSN and key title 1400-4860		ISBN 978-91-87793-72-1 (print) 978-91-87793-73-8 (pdf)	
Recipient's notes	Number of pages 210	Price	
	Security classification		

I, the undersigned, being the copyright owner of the abstract of the above-mentioned dissertation, hereby grant to all reference sources permission to publish and disseminate the abstract of the above-mentioned dissertation.

Signature 

Date 2021-04-27

Agriculture for Development in the 21st Century

Evidence from Ethiopia

Emelie Rohne Till



LUND
UNIVERSITY

Lund Studies in Economic History is a series of doctoral dissertations and edited volumes of high scholarly quality in subjects related to the Department of Economic History at the School of Economics and Management, Lund University. All volumes have been reviewed and approved prior to publication.

Coverphoto: Field of *teff* in northern Ethiopian highlands.
© Can Stock Photo / derejeb.

Copyright pp 1-66 Emelie Rohne Till

Paper 1 © Palgrave MacMillan

Paper 2 © John Wiley and Sons

Paper 3 © Emelie Rohne Till

Paper 4 © Emelie Rohne Till

School of Economics and Management

Department of Economic History

ISBN 978-91-87793-72-1 (print)

ISBN 978-91-87793-73-8 (pdf)

ISSN 1400-4860

Printed in Sweden by Media-Tryck, Lund University

Lund 2021



Media-Tryck is a Nordic Swan Ecolabel
certified provider of printed material.
Read more about our environmental
work at www.mediatryck.lu.se

MADE IN SWEDEN 

In memory of Bengt Rohne

Table of Content

Acknowledgements	ix
List of Papers	xi
Introduction.....	1
Motivation	1
Aim and Contribution.....	2
The Role of Agriculture in Economic Development	3
Agriculture for Development	4
Agricultural Development.....	7
Role of the State in Agricultural Development.....	7
Agricultural Policies.....	9
Sustained Growth and Development in Sub-Saharan Africa	12
Case Study Context.....	14
Thesis Framework	23
Methodology	25
Research Design.....	25
Methods	28
Summary of the Papers.....	31
Paper 1: Between the Engine and the Fifth Wheel: An Analytical Survey of the Shifting Roles of Agriculture in Development Theory.....	31
Paper 2: A Green Revolution in Sub-Saharan Africa? The Transformation of Ethiopia's Agricultural Sector	32
Paper 3: The Role of Agriculture in Economic Growth in Ethiopia: A SAM-based Analysis.....	33
Paper 4: Is This Time Different? Catch-up Growth and Social Capability in Ethiopia 1950–2020.....	34
Conclusion	35
References	39

Paper I-IV

Acknowledgements

Being able to spend years dedicated to the learning, growth, and work involved in writing a PhD-thesis is a true privilege. I am grateful that I have had the opportunity, and for that I want to acknowledge the generous funding provided by the Marianne and Marcus Wallenberg Foundation, without which it would not have been possible to write this thesis.

I am also grateful to a long list of incredible people that have helped me along the way.

First and foremost, I want to thank my main supervisor, Martin Andersson. Thank you for your plentiful support, the free reign to follow my research interests, and thoughtful direction when needed. I also want to thank Tobias Axelsson, my assistant supervisor, for your encouragement, guidance, and for your constructive feedback on my many, and long, drafts. Together, your unwavering support for me and my work helped me stay the course during both the challenges and successes of PhD work – and it's made the journey so much more enjoyable!

Thank you Jutta Bolt and Agnes Andersson Djurfeldt for taking the time to read my manuscript at the final seminar, and for your valuable and insightful comments. Thank you also to Mats Olsson, the head of the Department of Economic History; to Anneli Nilsson Ahlm, Tina Wueggertz and Christina Rothman for all your departmental support; and to Patrick Svensson, Astrid Kander and Ellen Hillbom, for your support in the capacity as Directors of the PhD program.

I also want to thank my dear colleagues for their fellowship, encouragement, and inspirational conversation. Prince, thank you for your companionship during our PhD endeavors and for your ever so reliable and calming presence in our office. Montse and Andrés, thank you for always being there to provide advice, assistance, and reassurance. Thank you also to Christer, Erik, Igor, Jeanne, Jens, Julius, Kathryn, Maria, Mesfin, Sascha, and colleagues in the development group, for proving such a warm and stimulating research environment.

Outside of work, I wish to thank my family: mamma, Daniel, och mormor. Tack för er ousinliga tilltro till min förmåga. Och tack till dig, morfar. Du var min ledstjärna i

livet, och ord kan inte nog uttrycka hur tacksam jag är för allt du lärt mig. Jag saknar dig varje dag.

Lastly, to the loves of my life. Jakob and Samuel, your joy, energy, and beautiful smiles make every day better. Brandon, my love and my everything, thank you for all that you are and for all that we have.

List of Papers

- I Rohne Till, Emelie and Andersson, Martin (2018). Between the Engine and the Fifth Wheel: An Analytical Survey of the Shifting Roles of Agriculture in Development Theory. *Agricultural Development in the World Periphery: A Global Economic History Approach*, edited by V. Pinilla and H. Willebald. Palgrave Macmillan.
- II Rohne Till, Emelie (2021). A Green Revolution in Sub-Saharan Africa? The Transformation of Ethiopia's Agricultural Sector. *Journal of International Development* 33(2): 277-315.
- III Rohne Till, Emelie (2021). The Role of Agriculture in Economic Growth in Ethiopia: A SAM-based Analysis. *Unpublished manuscript*.
- IV Rohne Till, Emelie (2021). Is This Time Different? Catch-up Growth and Social Capability in Ethiopia, 1950-2020. *Unpublished manuscript*.

Introduction

Motivation

The 21st century has seen increased optimism about the prospects for African economic development; the oft-cited *The Economist* cover of 2000 depicting Africa as a “hopeless continent” has long seemed obsolete. Ethiopia, with its average annual GDP per capita growth of over 6% since the turn of the millennium (IMF 2020), is at the forefront of the current wave of optimism. The country’s rapid growth has been achieved under a policy focus on the agricultural sector—another aspect of development that has seen a renewed wave of optimism in the 21st century. After two decades of neglect in the 1980s and 1990s, the role of the agricultural sector in economic development has again risen to the top of the development agenda for many scholars, policymakers, and donors. This background forms the starting point of this thesis, which studies Ethiopia’s rapid—but so far relatively short—growth during the implementation of the macro-level development policy “agricultural development-led industrialization” (ADLI), first established in the early 1990s. The thesis uses the Ethiopian experience as a case to study three aspects of development: the role of the agricultural sector for economic development in today’s low-income countries, the likelihood that the current growth episode in Ethiopia will turn into sustained economic growth,¹ and the role of the state in both agricultural and sustained economic growth.

Based on the findings emerging from the thesis’s four papers, the thesis makes two main arguments: first, that the agricultural sector remains an important engine of growth in today’s low-income countries; and second, that there is scope for states in contemporary low-income countries to take a leading role both in the transformation of the agricultural sector and on the path to sustained economic growth.

Four main findings underpin these arguments. First, Ethiopia has undergone a “Green Revolution,” defined as a specific case of agricultural development where crop output and crop yields double at the national level in under 25 years (Paper 2). Second,

¹ “Sustained growth” is understood following Rodrik (2011), who defines the term as annual per capita GDP growth of 4.5% or higher that lasts for at least 30 years. In the thesis, “sustained growth” and “catch-up growth” are used interchangeably.

agricultural growth has been central to the aggregate growth given Ethiopia's economic structure (Paper 3) and, therefore, the renewed interest in agriculture for development seems warranted (Paper 1). Third, the state plays an important role both in igniting agricultural growth, especially via agricultural public spending (Paper 2), and in sustaining economic growth (Paper 4). Fourth and lastly, the thesis finds that while a focus on agricultural growth as a means to achieve aggregate economic growth may be warranted during the initial phases of development (Paper 3), rapid agricultural growth does not automatically translate into sustained growth. Such growth is instead conditioned by a country's social capability. As defined and discussed in Paper 4, social capability includes a country's ability to benefit from technological change and allow its people to participate in productive economic activities under a state that can insulate from elite pressure and promote nation-building and prosperity.

Aim and Contribution

This thesis aims to use Ethiopia's recent experience of rapid growth as a case to explore whether agricultural-led growth is happening in a country in sub-Saharan Africa (SSA) today and to understand if this can be a path toward sustained growth. Agricultural-led growth is understood as a process in which agricultural growth due to increased agricultural productivity (which, in turn, stems from increased public investment combined with technological advancements) stimulates aggregate growth. In this process, agricultural growth both generates a surplus to fuel the aggregate economy and increases farmers' incomes, generating demand for locally produced products. This understanding of the link between agricultural growth and economic growth draws explicitly on Adelman's (1984) definition of "agricultural demand-led growth" (ADLI)² and generally on the broader agriculture-for-development perspective, as outlined in the World Development Report 2008 (World Bank 2007).

Implicitly, the thesis also aims to generate insights that can be used to draw lessons for other contemporary low-income countries in SSA, although any such lessons must be drawn with caution and consideration for each country's specific context. With these aims in mind, the thesis addresses three broad research questions: 1) What is the role of the agricultural sector for economic growth in today's low-income countries? 2) What is the role of a country's social capability in sustained economic growth? and

² The Ethiopian strategy uses the broader name of "Agricultural Development-led Industrialization," as opposed to Adelman's original "Agricultural Demand-led Industrialization." These names are used interchangeably in this thesis, as is often the case in the literature; the thesis relies on context to clarify whether it refers to Ethiopia's strategy or Adelman's original concept.

3) What is the role of the state in both agricultural and sustained economic growth? The research questions are addressed through theoretical discussions and through an empirical case study of Ethiopia's agricultural and economic growth, mainly from the 1990s onwards. The case study focuses on Ethiopia's recent economic history during a time of significant economic change and attempts to do so in the context of longer trajectories in the history of the Ethiopian economy.

This thesis contributes to the previous literature by lending support to the large body of work arguing that the agricultural sector is important for initial economic growth in low-income countries. It also addresses the importance of both public spending and a country's social capability for agricultural and aggregate growth, thereby highlighting the important role of the state on the path to sustained economic growth. Lastly, the thesis's empirical work extends the current knowledge frontier by providing three purpose-built datasets to the literature: one on agricultural production and agricultural public spending in Ethiopia from 1994–2018 (Paper 2), another on four elements of Ethiopia's social capability from 1950–2019 (Paper 4), and a third on the literature's bibliometric trends concerning the role of agriculture in economic growth from 1969–2015 (Paper 1).

The Role of Agriculture in Economic Development

The thesis's core research focus is to understand the role that the agricultural sector can play in economic development as well as the role of the agricultural transformation in broader processes of economic and structural transformation. These processes involve the sectoral shift of output and employment away from low-productive agriculture into more productive activities. They are generally accompanied by a greater diversification of livelihoods both on- and off-farm, stronger rural and urban interaction, and the creation of more employment and investment opportunities outside the agricultural sector (Mellor 1976; Timmer 1988; Jayne et al. 2018). Using Timmer's (1988: 282) terminology on the four phases³ of agricultural transformation, the thesis addresses the second phase of "agriculture as a contributor to growth" in the Johnston–Mellor (1961) sense. To do so, the thesis also documents the extent of the agricultural transformation in Ethiopia (Paper 2), corresponding to Timmer's first phase of "getting agriculture moving" in the Mosher (1966) sense. However, the thesis focuses on understanding

³ The four phases of agricultural transformation outlined by Timmer (1988: 282) are: 1) getting agriculture moving, 2) agriculture as a contributor to growth, 3) integrating agriculture into the macro economy, and 4) agriculture in industrial economies.

the role of agriculture as a contributor to macro-level economic growth, and does not analyze the micro-level change that has engendered the observed agricultural growth.

Agriculture for Development

Agricultural and development economics both emerged as sub-fields in the middle of the 20th century (Arndt 1987; Barrett et al. 2010). Since then, the view of the role that agriculture can play in economic development has shifted over time. Early perspectives in the 1950s and 1960s emphasize a largely passive role of the agricultural sector (Lewis 1954; Hirschman 1958; Ranis and Fei 1961; Jorgenson 1961). In this view, agriculture's contribution to development is to reallocate labor and indirectly contribute to much-needed savings and investments in the modern sector; the sector was mainly regarded as a reservoir of labor and transferable surplus. This was followed by research that further downplayed the role of agriculture in economic development based on the core concept of the Prebisch–Singer thesis, suggesting deteriorating terms of trade for primary products in relation to industrial goods (Singer 1950; Prebisch 1959; Preobrazhensky 1965).

The mid-1960s saw a shift toward viewing agriculture as a potential engine of growth. This change in perspective followed the contributions of Johnston and Mellor (1961) on how agriculture can contribute to growth in the overall economy through various linkages (labor, food, foreign exchange, market, and domestic savings). In the 1980s, the view shifted again, this time toward an industrial focus. This tendency was followed by several studies in the 1990s and early 2000s arguing that agricultural growth stems from, rather than leads to, overall growth (Estudillo and Otsuka 1999; Gardner 2000; Mundlak et al. 2004). However, since around 2005, the view that agricultural growth can drive overall growth has resurfaced. This perspective is exemplified by the 2008 World Development Report on agriculture (World Bank 2007) and the signing of the Maputo Declaration in 2003, in which all African leaders of state committed to dedicating at least 10% of public spending to agriculture (AGRA 2018).

The various theoretical perspectives on agriculture in development are extensively discussed in Paper 1. The paper identifies four main theoretical schools of thought that have influenced the shifting debate outlined above. While it is not necessary to repeat Paper 1's discussion here, the four schools of thought are as follows. First, according to the “fifth wheel” school, agriculture is not by itself seen to stimulate economic development, although it might stifle the process if neglected (Lewis 1954; Ranis and Fei 1961; Jorgenson 1961). Second, the Chicago school emphasizes rationality and anti-distortions, led by the work of Schultz (1964) and his followers (e.g., Krueger et al. 1988, 1991; Anderson 2009a, 2009b). The third main school of thought focuses on

the role of agriculture in trade; agriculture is seen as either a break (Prebisch 1959) or an injection (Myint 1958). The fourth school of thought views agriculture as a potential driver of growth. One strand of this diverse school of thought has its roots in structural change analysis, understanding the relative decline of agriculture in the process of long-term economic growth (Clark 1940; Kuznets 1961, 1966; Chenery and Syrquin 1975). A related strand emphasizes agricultural growth's potential to strengthen the domestic market, thereby stimulating aggregate growth. Adelman (1984) explicitly theorizes this mechanism in her development of the concept of ADLI.

The thesis's three empirical papers draw mainly on the school of thought that views agriculture as a potential driver of growth. This agriculture-for-development view has been a prominent perspective on the role of agriculture in economic growth since around 2005. While agriculture's role in stimulating growth and reducing poverty has also been questioned during this time (Ashley and Maxwell 2001; Hasan and Quibria 2004; Ellis 2004; Collier and Dercon 2009), agriculture's contribution to economic growth has much support in the economic history of today's high-income countries in Europe⁴ and East Asia (Ohkawa and Rosovsky 1964; Bairoch 1973; Johnston and Kilby 1975; Timmer 1988; Lains and Pinilla 2009). A core assumption of the agriculture-for-development perspective is that farmers in low-income countries, often working small plots, can be efficient producers capable of generating a surplus that can benefit the wider economy (Mellor 1976; Lipton 2005; World Bank 2007; Diao et al. 2010). As such, increasing the productivity of these small farmers is a key concern. In addition to increases in agricultural productivity among farmers, a thriving rural nonfarm sector and diversification toward higher productivity crops are also important elements of success. However, while the rural nonfarm sector can be a productive outlet, it is also a very diverse sector, including petty and under-capitalized activities with very low returns to labor and also productive activities that are better rewarded. The nature of the sector is likely linked to the dynamism of agriculture and the general economy (Wiggins et al. 2018).

The concept of ADLI is of special importance for this thesis given the connection between Adelman's academic concept of ADLI and Ethiopia's implementation of ADLI. Drawing on Singer (1979), Adelman (1984) developed ADLI as a development strategy emphasizing the importance of agricultural growth in stimulating overall production and growth. Under ADLI, agricultural growth arising from increased agricultural productivity (stemming, in turn, from increased rural investment and technological innovation) stimulates aggregate growth; agricultural growth increases farmers' incomes, which generates demand for locally produced non-tradable products.

⁴ Although for the English case, this understanding was later questioned (Allen 1994; Clark 2007).

This farm demand for domestic non-tradables is the main link between agricultural growth (raising farmers' incomes) and nonagricultural growth.

Empirically, ADLI was first tested in Adelman's (1984) seminal paper, in which she simulated growth scenarios comparing an export-led (in essence, manufacturing-led) industrialization strategy and ADLI, for South Korea in 1963. She found that while both strategies would generate growth, ADLI would lead to better overall development compared to export-led growth, as ADLI led to higher labor absorption, more equal distribution of income, less poverty, and a higher rate of per capita economic growth (Adelman 1984: 939). These results mainly stemmed from that the linkages generated by the agricultural sector were stronger than those generated outside of agriculture, as farm households demanded more goods and services from domestic food and non-food industries than other households. In the simulations, the same amount of investment was channeled into the export sector or the agricultural sector. This led Adelman to conclude that ADLI at some stages of development both generated better economic development and yielded a higher rate of return, and should therefore be prioritized. Other studies that have explicitly tested ADLI include Vogel (1994) and Bautista et al. (1999). Moreover, much of the work on calculating agricultural multipliers and linkages (as summarized by Haggblade et al. 2007) shares a similar rationale as Adelman's study. Overall, this literature finds that an ADLI strategy can contribute considerably to overall economic growth.

Adelman's ADLI strategy was intended to be an alternative development strategy for low-income countries. However, Adelman did not claim that ADLI was always the right choice for this type of countries. Instead, the strategy mainly targets countries that have 1) a potentially large domestic market and 2) an industrial base with established supply responsiveness. Adelman and Vogel (1991) explored the implications of these criteria for successful ADLI implementation in SSA. They found that while agriculture has relatively strong linkages in SSA, most countries do not fulfill the second criteria of established supply responsiveness (because the manufacturing production capacity is quite limited, many types of consumer goods are not produced domestically, and most intermediates and machinery are imported). Therefore, they concluded that an ADLI strategy was unlikely to be successful in most SSA contexts. Thirty years later, it seems that the Ethiopian implementation of ADLI may be proving their pessimistic predictions wrong.

Agricultural Development

As the realization of agriculture for development depends on agricultural growth, this section provides a brief contextualization of the literature on agricultural development—even though the thesis does not focus on the specific mechanisms underlying Ethiopia’s agricultural growth. The literature on the drivers and features of agricultural change is vast, and much important work has been done on the subject in the post-war era (Barrett et al. 2010). In general, the macro-level conditions needed for agricultural development are well-known: a reasonably stable macro-economic and political environment, effective technology transfer, and product and factor markets that are functional and accessible (Mosher 1966; Tsakok 2011). However, these insights do not allow for a specific understanding of how on-the-ground, micro-level change is engendered. Agriculture is, in essence, a private activity undertaken by millions of individual actors (Mellor 2018). Therefore, village-level studies and analyses of localized production systems are needed to get closer to an understanding of what drives agricultural production and productivity increases (Wiggins 2000; Andersson Djurfeldt and Djurfeldt 2013).

However, while agriculture is a predominantly private activity taking place at the micro-level, the success of individual farmers is conditioned by public and macro-level forces. Agricultural growth—and its potential benefits—depends on favorable developments in the economic and political environment, technology transfer, and product and factor markets. The literature on what drives these conditions is large, and at least four major drivers are proposed in the literature: factor relations (Binswanger and Ruttan 1978; Hayami and Ruttan 1971, 1985), population dynamics (Boserup 1965), technology availability (Otsuka and Kijima 2010; Estudillo and Otsuka 2013; Otsuka and Muraoka 2017), and the state (Djurfeldt et al. 2005; Hazell 2009; Henley 2012; Frankema 2014). However, a quest for a single driver of agricultural growth would be futile, as the process is much too complex, and multiple factors both drive growth and affect each other. These forces are not substitutes; in any context of agricultural change, the state, factor and product markets, technology, and population dynamics are complements that act and react in the same environment.

Role of the State in Agricultural Development

This thesis is particularly concerned with the strand of the literature on macro-level agricultural development concerning the role of the state. This body of work views agricultural development as the result of a created supportive economic and policy environment upheld by substantial public spending on agricultural development

(Djurfeldt et al. 2005; Hazell 2009; Henley 2012; Frankema 2014). The policy recommendation derived from this work include for governments to take a leading role in providing necessary technology, an economic and political environment conducive to growth, and substantial public spending on infrastructure, irrigation, and research (Eicher 1995; Hazell 2009; Rashid et al. 2013a).

The important role of the state is also prominent in the broader debate on the role of agriculture in economic development. For example, Tsakok (2011: 254, 302) argues that the role of governments is essential to agricultural and economic development. Similarly, Mellor (2017: 11) holds that the agricultural sector must modernize in order for an economy to transform, and states must play a central role in this modernization (Mellor 2017: 11). The critique of the state-led interpretation of agricultural development mainly draws on the observation that past state involvement has in no way guaranteed success. Historically, the world has seen much higher levels of state intervention in agriculture in the post-war era, but this may have done more harm than good to global agricultural production (Federico 2005; Pinilla 2019).

Views concerning the appropriate role of the state in agricultural development in SSA have varied over the decades. In the 1960s and 1970s, many scholars, donors, and policymakers considered the state to play a large and important role. However, the translation of the large role of the state into successful agricultural development was largely unsuccessful. While many governments (e.g., those of Kenya, Tanzania, Nigeria, and Ethiopia) implemented comprehensive programs for agricultural development, many such programs turned out to be complete failures. However, despite these uneven or disappointing results, the state was seen as central to both agricultural and economic development under this paradigm. It played this role through the implementation of land reforms; investing in agricultural research and development (R&D), irrigation schemes, and rural development programs; and providing access to inputs and credit (Holmén 2005; De Janvry 2010; Henley 2012; Otsuka and Larson 2013).

With the new paradigm of the 1980s under the Washington Consensus, the role of the state in agricultural development shrunk dramatically. The period's stabilization and adjustment policies reduced the size and functions of the state in agriculture. During this period, public spending on agriculture and aid to the agricultural sector declined sharply, and many public agencies supporting agricultural development were dismantled (De Janvry 2010). As we know with hindsight, the hopes that the private sector would successfully fill the vacuum left by the public withdrawal went largely unfulfilled. Instead, this void of institutional support for agriculture was only partially—and unsuccessfully—replaced by the private sector and NGOs in the 1990s (Staatz and Eicher 1998).

However, as addressed in Paper 1, the last 15 years have seen a strong re-emergence of the role of agriculture in economic development. The period has also seen a rise of attention towards to the role of the state in agricultural development, with a larger role for the state in the theory and, in some cases, practice of agricultural development (Crawford et al. 2003; Coady and Fan 2008; De Janvry 2010).

Agricultural Policies

The return of agriculture, and especially smallholder-based agriculture, to the development agenda since around 2005 is based on the view that smallholders can be efficient producers and that productivity increases among this group lead to both economic growth and poverty reduction. Following this line of thinking, increasing agricultural productivity (especially among smallholders) is a key policy concern (Dorward et al. 2004; Diao et al. 2010). As early-stage agricultural development often suffers from various market failures—arising from challenges to economies of scale, access to credit and information, and the inherent climate and market volatility of agricultural production—public policies that support small farmers seek to overcome these challenges (Dorward et al. 2004; Birner and Resnik 2010). Given this goal, agricultural policies have shifted considerably in the post-2005 era compared to the heavy taxation of the sector in the 1970s and 1980s. Since then, and perhaps especially since the Maputo Declaration of 2003, the discrimination against the agricultural sector has decreased in favor of supporting the sector (Anderson 2009b; Wiggins 2018).

There are many areas in which the state can intervene in the agricultural sector. These include policies on the ownership of production factors, public spending on general public goods (health, information, etc.), agricultural public spending, transfers from farmers (taxation), interventions in the domestic market of agricultural products and factors, and interventions in the international trade of agricultural products (Federico 2005: 187). Among these, this thesis specifically addresses the role of agricultural public spending. This choice is motivated by the importance that has been assigned to agricultural public spending in previous agricultural transformations (Johnson et al. 2003; Wiggins 2014; Moguees et al. 2015) and the renewed emphasis on its centrality to agricultural development in SSA, especially following the Maputo Declaration of 2003 (Diao et al. 2008; AGRA 2018; De Janvry and Sadoluet 2019). It is also motivated by the importance of agricultural public spending as a channel of state involvement in agricultural development in Ethiopia. Indeed, agricultural public spending is one of the key policies for agricultural development outlined in the government's ADLI strategy (MOFED 2002).

Public spending on economic and agricultural development

Historically, the theory and practice concerning the role of public spending⁵ in development have fluctuated widely. Many 19th-century economists viewed public spending as a vital instrument for economic development. Fueled by the expanded military during the World Wars, the New Deal-type welfare programs, the policy approach of Keynesianism, and, somewhat later, the important role of public spending in East Asian countries' rapid industrialization, this remained a dominant theoretical perspective until around the 1970s (Lee 2007). However, the global economic slow-down and rise of the Reagan–Thatcher era challenged the Keynesian theoretical support for public spending; the laissez-faire school, arguing that public expenditure crowded out private investment, gained ground (Little 1982; Rodrik 1999). In light of the general “lost decades” in the wake of small public spending in the 1980s and 1990s, the theoretical position on public spending has softened, and there is a broader recognition of the essential role public spending can play in complementing private sector investments. More recent discussions have emphasized states' capability in executing effective public spending and have broadened the theoretical understanding of public expenditure to include institutional and capacity aspects (Coady and Fan 2008; Tijani et al. 2015). This theoretical re-orientation away from the “small state” paradigm of the 1980s is also reflected in practice, as Yu et al. (2015) find that public spending increased significantly from 1980 to 2010 for the 147 countries in their study.

The main theoretical rationale for public spending is two-fold, including both efficiency considerations and equity considerations. According to the efficiency consideration, the government is superior at providing public goods, which private actors will underprovide. This, in turn, enhances market efficiency and remedies market failures caused by public good issues, risks, externalities, information

5 The term “public spending” is used in many different ways in the literature, including the terms of “public spending,” “public investment,” and “public expenditure.” Broadly, these concepts denote expenditure that provide various public goods, such as R&D, infrastructure, and education, or expenditures that generate future fiscal benefits (for a discussion, see Mogues et al. 2012, Appendix A). This thesis adheres to the definition and classification of public spending as outlined by the Government Finance Statistics Manual by the International Monetary Fund (IMF 2001) and the Classifications of Expenditure According to Purpose by the Organization of Economic Cooperation and Development (OECD) and the United Nations (UN 2000). In this definition, the main economic classification of public spending is either capital expenditures or recurrent spending. Capital spending includes all expenditures on assets and public capital formation (e.g., fixed assets, inventories, valuables, and non-produced assets, such as land). Recurrent spending includes all transactions that result in a decline of the government's net worth and do not contribute toward public capital formation or the purchase of public assets (e.g., compensation of employees, subsidies, social benefits, use of goods and services, interest, grants, and consumption of fixed capital). In this thesis, the terms “public spending” and “public expenditure” are used interchangeably and include both capital and recurrent spending unless otherwise stated. The term “public investment” refers to capital spending only, but is used sparingly for the sake of clarity.

asymmetries, regulation and coordination issues, and other factors (Myles 1995; Hindriks and Myles 2006; Coady and Fan 2008; Mogues et al. 2015). Accordingly, this school of thought argues that public spending on public goods usually pays off, while public spending on private goods usually does not. Second, the equity rationale concerns the distribution of goods and services in terms of its effect on the welfare of the poorest segments of the population and on the gap between the best- and worst-off segments of the society (Mogues et al. 2015).

The efficiency and equity rationales are also central to the theoretical discussion of agricultural public spending in particular. Although agriculture is a largely private activity, its success is conditioned by public goods such as human capacity, infrastructure, and R&D; as such, the efficiency consideration is theoretically applicable (Tijani et al. 2015; Mellor 2018). The equity rationale is also frequently evoked in the discussion on agricultural public spending, as the agricultural sector is often home to the most impoverished segments of a population.

Taken together, the efficiency and equity rationales for public spending suggest a rather optimistic view of what governments can achieve via public spending. These theoretical notions position governments as “benevolent social spenders” that act benevolently and efficiently. However, a large political economy literature suggests that this view must be tempered, as government officials act in accordance with other incentives and constraints rather than purely economic ones (e.g., those provided by citizens, voters, government officials, and lobby groups) (Mogues et al. 2015).

The previous research on the relationship between agricultural public spending and economic development has not established a causal connection (Easterly and Rebelo 1993; Milbourne et al. 2003; Mogues 2011),⁶ but instead suggests that this relationship depends on the spending’s functional type. The main types of agricultural public spending are 1) spending allocated toward increased agricultural productivity, such as irrigation, rural infrastructure, agricultural R&D, or extension (farmer education to disseminate modern practices and inputs) and 2) supportive functions for the agricultural sector such as rural safety nets and input subsidies. These spending types can have very different effects on the agricultural sector. Overall, the large body of evidence on the allocation of agricultural public spending suggests that investing in both physical and human public goods can have positive effects on agricultural growth.

⁶ Other studies show a direct causal link from agricultural public spending to economic growth, and the inconclusive result of the previous research is probably linked to both the heterogeneity of the methods, data, and theories employed (as discussed by Benin et al. 2008) and the level of aggregation itself. Both public spending and agricultural public spending are conditioned by the product and factor markets they operate in (Barrett et al. 2010), and it may be difficult to find a clear relationship between spending and growth without a more careful disaggregation of spending types.

Investment in private goods seems to have a more limited effect on growth, although it may contribute to rural welfare (for useful summaries, see Mogues et al. 2012, 2015).

While increased agricultural productivity is a cornerstone of the agriculture-for-development perspective, most observers recognize that not all farmers can “grow themselves out of poverty” (World Bank 2007). For farmers in marginal areas (in terms of market access or agro-ecological conditions), stimulating the agricultural sector may not spur poverty reduction. Moreover, some studies find that increased commercialization is not linked to improvements in food security (Andersson Djurfeldt 2017a). As such, spending on safety nets and cash transfers may be a better use of rural and agricultural public spending, than only spending on agricultural productivity enhancement (Masters et al. 2013). Such social protection may increase multiplier effects and encourage local food consumption in the rural economy (Wiggins et al. 2018). However, while the link between increased agricultural productivity and poverty reduction is not direct in all contexts, virtually all instances of mass poverty reduction in modern history have been ignited by increased productivity among small farms (Lipton 2005).

As a concluding remark in the discussion of the role of the state in agricultural development, this thesis operates under the assumption that the state matters—and it matters what a government does or does not do. This is reflective of a Hirschmanian view of development: development is the result of what actors in a country do and the results of these actions (Hirschman 1971; Cramer et al. 2020). While we should acknowledge the weight of history, choices about development must be made in the present, and governments are one important actor making such choices.

Sustained Growth and Development in Sub-Saharan Africa

Currently, many parts of SSA are in the midst of an economic transformation. While challenges remain and progress is uneven across countries and regions, a large and growing body of evidence suggests that many parts of SSA have undergone profound economic change since the early 2000s. This economic growth has taken place within an improved political and macro-economic environment and in the context of rising global commodity prices. It has been accompanied by rapid agricultural growth (in some countries), growing rural off-farm employment, and strong local and foreign investment (Frankema and van Waijenburg 2018; Jayne et al. 2018).

However, two decades into this transformation, a key question is whether these developments will last or whether this is a boom period that will—again—be followed

by a bust. As noted by many (Jerven 2010; Frankema and van Waijenburg 2012; Broadberry and Gardner 2019), this is not the first time that parts of SSA have seen an extended growth period. The 1950s and 1960s saw widespread optimism concerning growth prospects in SSA, but this optimism waned as growth performance deteriorated. Will this time be different? Some are skeptical, warning that the current growth is volatile and vulnerable because it is driven by commodity exports and foreign direct investment and not accompanied by industrialization, structural transformation, or poverty reduction (Gollin et al. 2016; Fioramonti 2017). Any effort to understand whether the current growth episode will last must take these concerns seriously, especially as they relate to the rate of poverty reduction, its relationship with structural transformation, and the nature of agricultural growth.

To date, the economic growth across SSA seems to have had but a modest effect on poverty reduction. While many countries have seen a reduction of relative poverty, absolute poverty levels have not decreased, as population growth has offset the improvements. Instead, the rapid growth has been accompanied by disappointing poverty reductions and welfare gains in many countries (Cheru et al. 2019). SSA's high economic growth without broad-based welfare gains is not a historical anomaly; in today's high-income countries, there has generally been a lag from growth to broad-based development (Frankema and van Waijenburg 2018).

In order for growth to have a substantial impact on poverty, it must be accompanied by a structural transformation based on the transfer of labor from low- to high-productivity sectors and on labor productivity growth. The historical evidence suggests that all countries that have transformed into high-income countries have experienced structural transformation (Kuznets 1966; Chenery and Syrquin 1975) and that achieving such transformation is the only sustainable pathway out of poverty (Barrett et al. 2010). Historically, the transfer of labor from low- to high-productivity sectors has implied a transfer from the agricultural sector to the manufacturing sector. However, this clear sectoral boundary may now be blurring with the rise of high-productivity agricultural and service activities (Cheru et al. 2019).

The structural transformation links to the third aspect of the sustainability of the current growth process: the nature of agricultural growth. A key concern about the sustainability of the current growth episode is whether it is merely driven by the export of cash crops (or, in some cases, minerals) and favorable terms of trade. If so, the episode would share similarities with the previous growth episode in the 1950s and 1960s, which ultimately was not sustained. Instead, broad-based, inclusive growth that benefits large segments of society is necessary for sustained growth (Andersson and Andersson 2019). The limited success in increasing agricultural productivity and achieving an agricultural transformation in many African countries has led some researchers to

question whether agriculture can generate sufficient growth to play a leading role in African development (Collier and Dercon 2009, 2014; Dercon and Gollin 2014). Several aspects of the transformative power of agricultural growth are questioned, including its efficacy in reducing poverty (Hasan and Quibria 2004), whether it is a typical precursor of development (Ellis 2004), and its ability to have strong growth linkages in today's globalized world (Hart 1998). However, as Diao et al. (2010) show through economy-wide modeling of six African countries, there is little evidence to suggest that contemporary low-income countries can bypass broad-based agricultural transformation in order to achieve successful and sustained economic transformation.

While it is well beyond this thesis (and most social scientists) to predict the economic future of any one country, certain elements can indicate whether a growth process is likely to be sustained or not based on historical experience (as explored in Paper 4). If growth is accompanied by structural change, a successful agricultural transformation, and welfare gains for a large part of the population, it is more likely to be sustained (Kuznets 1966; Barrett et al. 2010; Valdés and Foster 2010). This also applies to contemporary low-income countries in SSA. While some work on economic development in SSA engages in “African exceptionalism,” this thesis sees no reason to consider the African continent as different from the rest of the world (for a discussion of this issue, see Cramer et al. 2020). All the countries in SSA are on their own development paths, as were all contemporary high-income countries. Some of the challenges of contemporary low-income countries are similar to those that today's high-income countries once faced, while others are unique to the current era. Nevertheless, as other parts of the world have achieved sustained economic growth once the right obstacles were removed and a sufficiently permissive environment was created, so could contemporary low-income countries in SSA.

Case Study Context

While Ethiopia is often portrayed as unique in the African setting—given its limited history of foreign occupation, long history of state centrality, relatively large population, and highland geography—it is not inherently more unique than any other African state. All African states have their own historical record and have been formed by the interaction of local and external factors (Bayart 1993; Andersson 2018). In light of this, the case of Ethiopia is not intended to be interpreted neither as a representative nor unique case for the broader SSA experience. Instead, it is intended to be country-specific study shedding light on Ethiopia's particular development outcomes.

Therefore, to contextualize the findings of this thesis, the following sections outline some key elements of Ethiopia's rich economic, political, and agricultural history.

Economic context

In terms of its economy, Ethiopia was marked by a traditional economic structure centered on ox-plow agriculture well into the 20th century. Due to misguided policies, poor provision of public goods, and a protracted civil war, economic progress was limited throughout the century, both under the Imperial regime (in power 1270–1974, apart from the Italian occupation 1936–1941) and the communist Derg regime (1974–1991). This left Ethiopia a war-torn and famine-plagued country when the Ethiopian People's Revolutionary Democratic Front (EPRDF) took over from the transitional government (1991–1994) in the early 1990s (Cheru et al. 2019; Manyazewal and Shiferaw 2019; Shiferaw 2019). Since then, the country has seen a strong economic recovery in the 1990s, followed by 20 years of nearly uninterrupted growth (apart from the drought year of 2003). Since 2003, GDP per capita growth has been steady, and the average GDP per capita growth for 2000–2018 was 6.3%, compared to 0.8% in the 1951–1999 period (Figure 1).

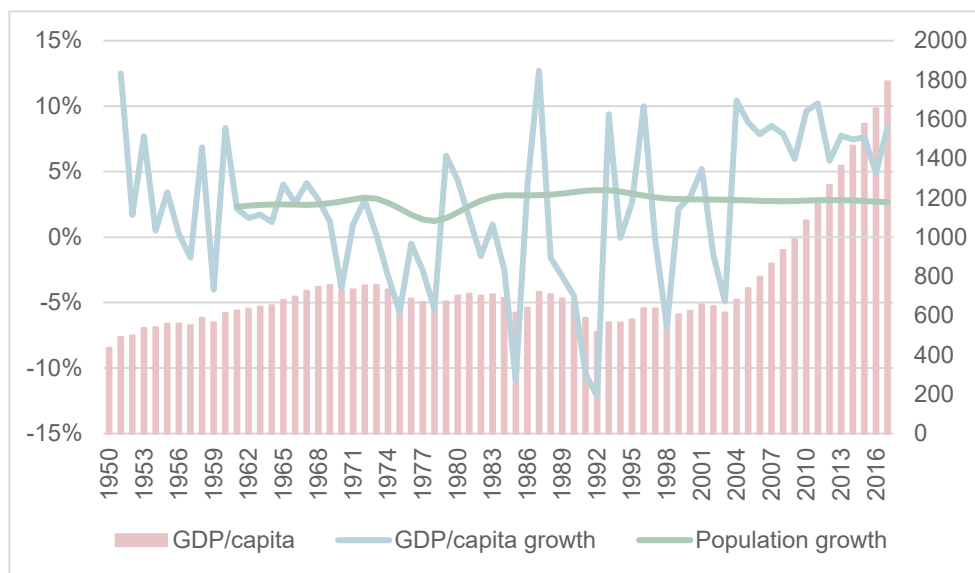


Figure 1: GDP per capita growth and population growth (annual %; left axis) and GDP per capita (2011 constant USD, PPP; right axis)
Source: Author's calculation based on PWT 2020 (Feenstra et al. 2015) and TED 2020 (The Conference Board 2020).

Ethiopia's recent economic growth has been accompanied by the tripling of GDP per capita since the early 1990s, a fall in extreme poverty (living on under 1.90 USD/day) from 69% in 1995 to 32% in 2015, a fall in the mortality rate under 5 years old from

170 per 1000 live births in 1995 to 50 in 2019, and an increase in life expectancy from 49 years in 1995 to 66 years in 2018 (World Bank 2020). However, despite the recent growth, the Ethiopian economy remains poor, agrarian, rural, and at an early stage of economic development. Over 70% of the population still lives under the 3.20 USD/day poverty line. Moreover, the agricultural sector accounts for 33% of GDP compared to 5% for manufacturing, and 80% of Ethiopia's 112 million inhabitants live in rural areas (World Bank 2020).

In terms of the structural transformation, production has shifted from agriculture toward the service sectors rather than manufacturing, and the employment transformation is slow (Martins 2018). The economic transformation has been challenged by the difficulty of establishing an internationally competitive manufacturing sector, managing the balance-of-payments problems of the government's ambitious development plans, curbing food inflation, and raising the living standards of Ethiopians (Schmidt et al. 2018; Cheru et al. 2019). Given this uneven record, it remains to be seen whether the government's aim of transforming Ethiopia into a middle-income country by 2025 will be fulfilled.

In the 21st century, many countries across SSA have experienced similar development paths as Ethiopia. Points of commonality include rapid economic growth compared to the "lost decades" of the 1980s and 1990s, growing agricultural output and productivity, an improvement of GDP per capita despite population growth, and a generally limited structural transformation, at least toward the manufacturing sector (Grabowski 2014; Wiggins 2018; IMF 2020). However, even in this comparative context, the Ethiopian experience is rapid—the country's economic growth has been the fastest in the region since 2000 (Table 1), and its agricultural output has increased six-fold (Paper 2) rather than doubled as in many other SSA countries (Wiggins 2018). While this growth has taken place from a low base, the Ethiopian GDP per capita is now among the mid-performers in this sub-sample of fast SSA growers, at rank 10 out of 20 (Table 1). Moreover, Ethiopia is ranked 25th out of the 45 SSA countries in IMF's (2020) World Economic Outlook database.

Table 1: GDP growth, GDP per capita growth, total GDP, and GDP per capita in the 20 fastest-growing SSA economies, 2000–2019

Country	Average annual real GDP growth 2010–2019 (%)	Average annual real GDP growth 2000–2019 (%)	Average annual real GDP per capita growth 2000–2019 (%)	Total GDP (nominal) in 2019 (billion USD)	GDP per capita in 2019 (US\$, PPP)
Ethiopia	9.5	9.1	6.1	92.8	2,724
Rwanda	7.6	7.6	4.6	10.1	2,363
Ivory Coast	6.7	3.5	0.7	58.6	5,327
Tanzania	6.7	6.5	3.4	60.8	2,841
Djibouti	6.6			3.3	5,195
Ghana	6.5	6.0	3.0	67.0	5,688
Guinea	6.2	4.5	2.0	13.8	2,506
DR Congo	6.1	4.7	0.7	49.8	1,015
Niger	5.9	5.1	1.1	12.9	1,276
Burkina Faso	5.7	5.7	2.5	15.7	2,282
Togo	5.6	3.6	0.8	5.5	1,657
Kenya	5.6	4.6	1.9	95.4	4,985
Mozambique	5.4	6.5	3.4	15.2	1,302
Senegal	5.3	4.6	1.8	23.6	3,536
Uganda	5.2	6.5	3.0	36.5	2,646
Benin	5.1	4.5	1.5	14.4	3,423
Seychelles	4.6	3.4	2.2	1.7	30,430
Cameroon	4.6	4.2	1.5	38.9	3,856
Sierra Leone	4.4	7.0	3.2	4.2	1,778
Mali	4.3	4.9	1.6	17.3	2,508

Source: Author's calculation based on IMF (2020).

Political context

The political environment in Ethiopia cannot be properly understood without an appreciation of the state's particular history. The Ethiopian state has a different political legacy than its fellow countries in SSA, with its almost millennium-long history of state formation and no history of being colonized by a European power except for the brief Italian occupation of 1936–1941. A key feature of Ethiopia's internal politics is the historical tension between sources of power, with political power centered in the country's northern highlands and economic power centered in the southern and western regions, which were incorporated into the Empire in the 1800s. This internal tension has made it difficult to build strong nationwide statehood in the country. Under periods of stronger statehood during the Imperial and Derg regimes, the state's strength was often used for the economic exploitation of politically marginalized regions (Clapham 2019; Shiferaw 2019).

The current regime has attempted to solve this tension through a federal system. In 1995, the government adopted a national constitution based on ethnic federalism, which grants self-determination to Ethiopia's almost 100 different nations and

nationalities. Under ethnic federalism, the government has been able to stabilize power and provide security and control over its fragmented territories to a greater extent than its predecessors (Cheru et al. 2019; Clapham 2019). Nevertheless, political tension remains rife in the country. The first decade of the federalist era was generally seen as a period of increased political stability and strengthening of Ethiopia's budding democracy. However, there was a backslide following the turmoil of the first general election in 2005 and the massive repression of the opposition (Nega 2010).

The federalist government itself views its pursuit of state-directed development under authoritarian rule as an attempt at being an East Asian-inspired "developmental state," as explicitly discussed by former Prime Minister Meles Zenawi (2012). Along with Rwanda, Ethiopia represents the most explicit attempt to implement the idea of a "developmental state" in SSA (Clapham 2018). This approach is marked by state intervention in many areas of the economy and the market, high levels of public spending, and a strong developmental vision for the nation (Chinigó and Fantini 2015; Chang and Hauge 2019).

While the Ethiopian iteration of the developmental state shares several characteristics with its East Asian counterparts, Chang and Hauge (2019) identify two main differences. First, they observe more fragile and fragmented public support for the state's development project, most likely linked to Ethiopia's ethnic fragmentation and related tension. Second, they note that Ethiopia's bureaucracy is weaker than those of many East Asian role models. The lack of public support and the many instances of political turmoil, civil unrest, and conflict under the EPRDF regime pose a real challenge to the continued developmental state project and the wellbeing of the Ethiopian people.

Ethiopia's stability and security problems are severe, not least reflected in the current conflict in the region of Tigray, where hundreds have lost their lives and tens of thousands (or more) have been displaced (EHRC 2020, 2021). The violent conflict has been ongoing since November 2020, following the regional election in Tigray in September 2020, which was held in defiance of the federal government. The situation is very unstable, and war crimes have been reported to have been committed by both sides (EHRC 2020; Gavin 2021). Efforts to stabilize the situation are crucial for the safety and wellbeing of those affected by the conflict. Given these conditions, many observers have doubted that the government's approach to development would survive and deliver. However, to date—while not diminishing the plight of those affected by the current conflict in Tigray or of the marginalized ethnic groups, rural inhabitants that have lost their land, urban workers that have no right to unionize, and others who have suffered from the oppressive political system—economic growth has continued despite periods of turmoil, including in the 2005 elections and the state of emergency from 2016–2018.

In the longer run, stabilization will also be needed for continued growth. While tension and conflict have historically been part of many countries' paths to development and are often features of capitalist expansion (Cramer et al. 2020), periods of political instability have been linked to economic shrinking in African economic history (Broadberry and Gardner 2019).

Policy context

In terms of policy, the Ethiopian government's pursuit of the ADLI development strategy is a key concern of this thesis. ADLI is a macro-level development policy that aims to generate fast agricultural growth to improve national food security and stimulate economic growth through forward and backward economic linkages (MOFED 2003). First implemented in the early 1990s, the strategy considerably strengthened in 2002 and has been reaffirmed in subsequent development plans (MOFED 2002, 2003, 2005, 2010, 2015). While the Ethiopian policy is not a direct application of Adelman's (1984) academic concept, the two share many similarities.⁷ The Ethiopian strategy prescribes an array of regulatory, trade, and market policies, including a key policy to greatly increase agricultural public spending. Under ADLI, the Ethiopian government has dedicated a significant share of its public spending to agriculture (Figure 2). In its first decade, ADLI was implemented with a relatively narrow focus on providing off-the-shelf fertilizer packages, improving access to inputs and credit, and providing extension services. While agricultural production increased during this period, ADLI was reformulated in 2002 with the aim of improving its results for both agricultural and aggregate growth (MOFED 2002).

Since then, ADLI has also included efforts to improve the broader market environment, reduce poverty, and combat food insecurity. This includes an increased focus on the commercialization of smallholder agriculture, an expanded role for large-scale agriculture, increased support for infrastructure and rural welfare, and interventions tailored to address the specific needs of the country's varied agro-ecological zones (MOFED 2002; FAO 2003). While the ADLI strategy is still a component of the Ethiopian policy framework, the 2015–2020 five-year plan downplays agriculture as the economy's leading sector compared to previous plans, in favor of greater focus on industry and manufacturing (MOFED 2015).

⁷ While broadly similar, some of the key differences are as follows. First, the post-2002 Ethiopian ADLI is a more broad-based rural development strategy, envisioning that linkages from the broader rural sector will stimulate economic growth. In contrast, Adelman focuses solely on linkages arising from agricultural growth. Second, Ethiopia's ADLI includes a more central role for the state than does the essentially neoliberal understanding of economic governance in Adelman's model. Third, Ethiopia's ADLI mainly focuses on small farms using labor-intensive technologies, while Adelman's concept focuses on both small- and middle-sized farms and is open to the introduction of labor-saving technologies to free up labor.

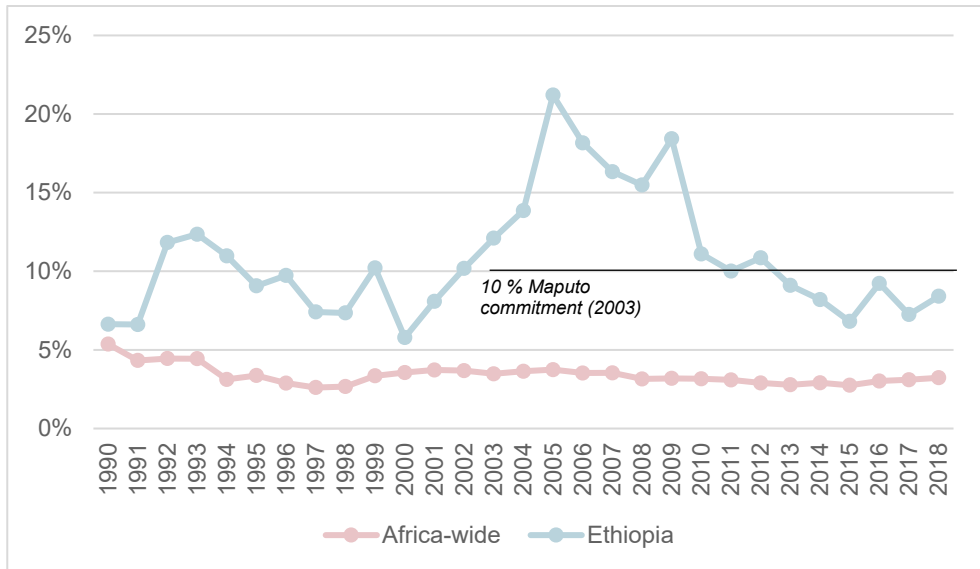


Figure 2: Share of agricultural public spending (% of total public spending), Ethiopia and Africa-wide average 1990–2018
Source: ReSAKSS (2019).

In the last two decades, many countries in SSA (e.g., Uganda, Rwanda, Ghana, and Malawi) have assigned a larger role to agriculture in policy. While this commitment appears to have been mainly rhetoric in some countries, Ethiopia is one of the few countries that have met the Maputo commitments in most years (Benin and Yu 2012; Grabowski 2014). The Ethiopian commitment has also seen a broader range of agricultural public spending, whereas some other countries (especially Malawi) have channeled the bulk of agricultural public spending through input subsidy programs (Ghins et al. 2017; Hemming et al. 2018). Therefore, the Ethiopian policy commitment to the agricultural sector under ADLI is not unique to Ethiopia, although the centrality of the agricultural sector in the country’s development strategy may be particularly pronounced.

Agricultural context

Historically, the agricultural sector has been at the core of Ethiopia’s economy. In the 1960s, the agricultural sector still accounted for over 85% of production and over 95% of the population (Timmer et al. 2015). As mentioned above, there has since been a structural shift in terms of production, while the labor force is still predominantly engaged in agriculture. Historically, Ethiopian agriculture has been rain-fed, drought-prone, and traditional, leading to several instances of famine. The sector is still predominantly rain-fed (only 3% of Ethiopia’s arable land is irrigated) and drought-prone (2016 saw the latest major drought) (FAO 2016; FAOstat 2019). However,

many aspects of the sector are no longer traditional. Fertilizer use has increased four-fold since the early 1990s, the uptake of mechanization is increasing (albeit from a low level), and the country's large extension program is disseminating modern farming techniques (Davis et al. 2010; Rashid et al. 2013b; Berhane et al. 2017).

The sector is dominated by cereal production and small farms. From 1995–2018, total production of all crops in Ethiopia increased from 704,180 tons to 4,527,240 tons, out of which the cereal sector accounted for 87% of total agricultural production in 1995 and 59% in 2018 (CSA 1995–2018). As shown in Paper 2, the agricultural sector in Ethiopia has undergone a tremendous production and productivity increase since the mid-1990s, with a six-fold increase in agricultural production, doubling of yields for the most important crops, and emerging labor productivity improvement.

Most of Ethiopia's agricultural production is attributed to smallholder farmers. The country is dominated by small farms; smallholders account for over 95% of production and arable land (CSA 2011–2013). The average farm size in Ethiopia is 1 ha. Moreover, 75% of all Ethiopian farms are smaller than 1.95 ha, and the average size of this subset is 0.78 ha (Headey et al. 2014; FAO 2020). Larger farms (e.g., cooperatives, state farms, and private commercial farms) make up less than 5% of Ethiopian farms and play a limited role in most of the agricultural production apart from specific industries such as tea, sugarcane, and horticulture (Taffesse 2019). Most farms primarily rely on family labor. While the use of hired labor is common, especially for weeding and harvesting, its share of total deployed labor is small; wage income, on average, accounts for only 10% of household income in rural areas (Bachewe et al. 2016). This relatively small share of wage income indicates agricultural production's importance to rural incomes and livelihoods in Ethiopia.

A key question linking agricultural production to economic growth is whether small Ethiopian farms are large enough to grow themselves out of poverty in the virtuous cycle envisioned by ADLI and the general agriculture-for-development strategy. While the data on agricultural production shows that both total production and yields have increased in recent decades, the number of farmers has increased more than land expansion. This has led to smaller farms; the average farm size decreased from 1.4 ha in 1977 to 1.0 ha in 2012 (Headey et al. 2014). The growing rural population, combined with a slow movement out of agriculture, likely contributed to this development.

The observed reduction in poverty headcount ratio, from over 60% of Ethiopians living in extreme poverty (under 1.90 USD/day) in the 1970s and 1980s to about half that figure in 2016, as well as the improved level of daily calorie intake (Paper 4), suggest that recent agricultural growth has benefited at least some smallholders. However, there

are at least two sub-groups of Ethiopian smallholders: 1) a group with access to relatively large plots located in areas with more favorable agro-ecological conditions and/or market connectivity, and 2) a group that does not have access to these favorable traits. The former group, which Mellor (2017) calls “small commercial farmers” (SCFs), is more likely than the latter to both drive and benefit from agricultural change. Mellor (2017) defines SCFs as rural households that have enough land to produce sufficient income to exceed the 1.90 USD/day poverty line, market most of their production, make almost all of their income from farming, and typically have access to farms sized 0.75–5 ha. These farmers make up 54% of the rural population in Ethiopia, using 77% of the land (Mellor 2017). However, factoring in the small proportion of large-scale farmers, this implies that at least 40% of the Ethiopian rural population is stuck in near-subsistence farming. This group is likely unable to benefit significantly from the ongoing agricultural transformation. For the segment of the Ethiopian population that cannot grow themselves out of poverty, there is a need for other protective measures, such as safety nets, cash transfers, and public work programs.

Regional differences also influence who benefits from agricultural change. Previous research suggests that areas that are more connected have more successful agricultural improvements than remote areas, and the prospects for both production and commercialization vary widely between regions and locations (Wiggins 2000; Andersson Djurfeldt 2013, 2017b). In Ethiopia, the central regions of Oromia and Amhara have accounted for the bulk of the increase in agricultural production. These regions have likely benefited both from their central location (close to the main market of Addis Ababa), their favorable agro-ecological climate (Sebastian 2014), and their comparatively large farms.⁸

In contrast, regional characteristics leave marginal areas at greater risk of stagnant or even falling agricultural productivity, which may push the inhabitants of such regions into labor-intensive, poorly remunerated, nonfarm livelihoods (Hazell et al. 2007). While the majority of the Ethiopian population resides in Oromia (33 million) and Amhara (27 million), more than a third of Ethiopians live elsewhere. This group may not benefit sufficiently from the macro-level improvement of agricultural production and productivity to grow themselves out of poverty. As shown in Paper 2, safety net spending was prioritized in Ethiopia in the early 2000s. This spending was mainly channeled as food aid and cash transfers through two large programs: the Household Asset Building Programme and the Productive Safety Nets Programme (World Bank

⁸ The average farm size is 1.15 ha in Oromia and 1.09 ha in Amhara, compared to the national average of 1 ha and the average of 0.49 ha in, e.g., the Southern Nations, Nationalities, and People’s Region (SNNPR) (Headey et al. 2014).

2008; FAO 2014). However, this spending has since decreased. Given that a large share of Ethiopians may be too poor to be successful commercial farmers, future economic growth and poverty reduction will likely require government interventions to support agricultural productivity growth and protect poor rural households, in line with some of the previous Ethiopia-specific research (Abro and Alemu 2014).

The above contextualization of some key elements of Ethiopia's economic, political, and agricultural history has highlighted the particular setting in which the thesis's findings should be understood. While the thesis aims to provide insights that could be relevant to other low-income countries in the initial phase of economic development, any such lessons should be drawn with caution. Current development trajectories are unlikely to repeat past experiences; all economies will not ultimately mirror those of now-rich countries. Therefore, rather than providing actionable "lessons" or a roadmap for development, the thesis seeks to offer evidence on the complexity of economic change and some specific elements of this complexity in the Ethiopian case.

Thesis Framework

This section sketches an illustrative framework of the thesis's main components to show how the thesis's four papers build on each other to support the main arguments. The framework serves not as an analytical framework but rather to clarify the main topics under study and how they are treated in the four papers.

The thesis's main research question is: what is the role of agricultural growth on the path toward sustained economic development in a contemporary low-income country? This broad question is addressed through three main topics: the role of the agricultural sector in economic development, the role of the state in agricultural and economic development, and the role of "social capability" on the path toward sustained economic growth in SSA. These questions are investigated in four papers, three of which are empirical papers that draw on Ethiopia as a case study. The fourth paper is an analytical survey of literature and theory.

The four papers generate four main findings. Together, they show that there has been an agricultural transformation in Ethiopia and that agricultural growth has been important for aggregate growth given Ethiopia's economic structure, warranting the renewed interest in agriculture for development. The papers also show that the state has an important role in igniting agricultural growth, especially via agricultural public spending, and in ensuring sustained economic growth; however, rapid agricultural growth does not automatically translate into sustained growth, which is conditioned by a country's social capability.

Based on these findings, the thesis makes two main arguments. First, the thesis argues that the agricultural sector remains an important engine of growth in today’s low-income countries. Second, it argues that there is scope for governments of low-income countries to take a leading role both in the transformation of the agricultural sector and on the path to sustained economic growth. Figure 3 depicts how the thesis’s main arguments connect to its main research question via the four papers.

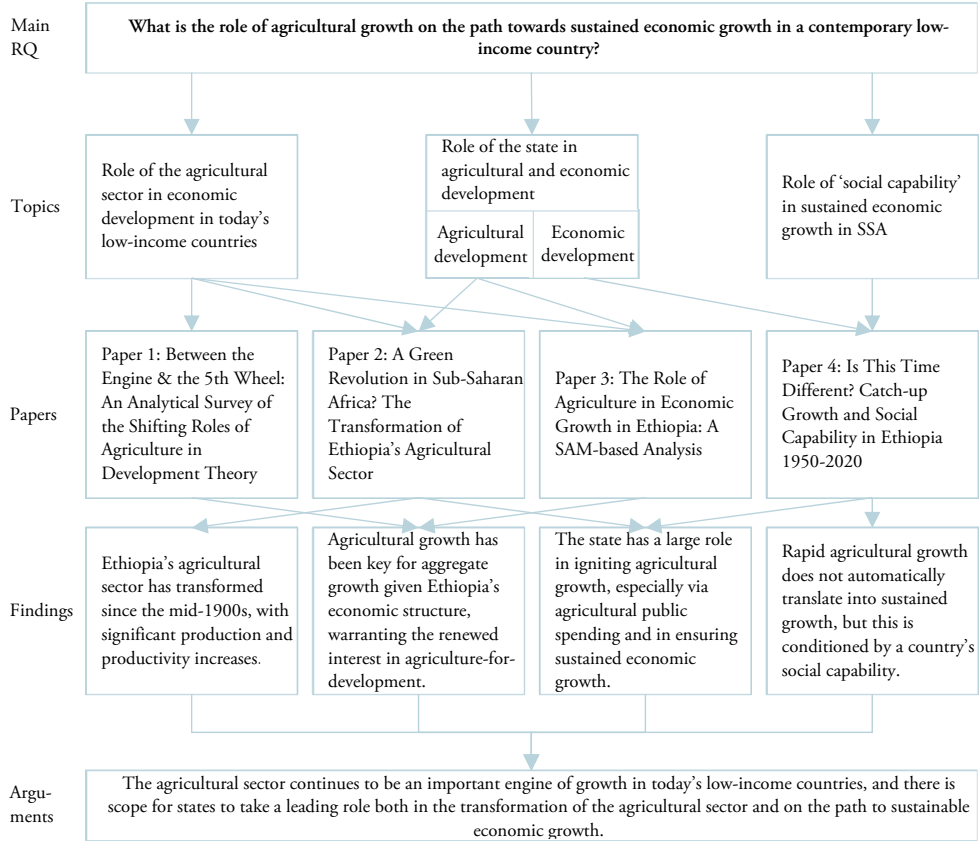


Figure 3: Illustration of the thesis’s main components and their connections

Methodology

Research Design

This thesis is situated at the intersection of economic history and development economics, attempting to apply an economic history methodology to relatively contemporary data. By combining theory with quantitative methods, constructing datasets, considering the aspect of time, and studying the long-term growth and evolution of economies (Diebolt and Hauptert 2018), an economic history approach allows this thesis to explore when and how economic change occurs. In this way, the thesis responds to Temin's (2016) call for more interaction between economic history and development economics—two fields that, at their core, study economic development.

As many scholars have noted, the complex questions of when and how economic change occurs require complex and multifaceted research designs that take the broader social and historical context into account. One of the most influential scholars in this area is Gunnar Myrdal (1944, 1968). In his magnum opus, *Asian Drama*, Myrdal states that if we truly want to understand complex societal processes, we cannot look at economics in isolation but rather in their historical, political, and social setting (Myrdal 1968: ix, x). With this focus on the broader historical, political, and social setting, the thesis is not part of the “cliometric revolution” prominent in economic history since the 1960s. Instead, it is part of the economic history strand that Cioni et al. (2020) identify as extending the analysis to include societal and political aspects in addition to purely economic elements. This is especially evident in the thesis's Paper 4, which explicitly aims to understand Ethiopian agricultural and economic growth through a multifaceted “social capability” approach.

The thesis's overall research design has been guided by a core puzzle: does agricultural growth matter for economic growth in low-income countries, and if so, how? Neither economic history nor development economics provides an established methodology for answering this question. At the macro-level at which this thesis operates, some of the most commonly applied methods are growth accounting (Martin and Mitra 2001; Gulati et al. 2005; Bosworth and Collins 2008), econometric studies relying on cross-sectional and panel data (Bravo-Ortega and Lederman 2005; Tiffin and Irz 2006; Self and Grabowski 2007), and various applications of economic multiplier models (Defourny and Thorbecke 1984; Powell and Round 2000; Tarp et al. 2002). The limitation of growth accounting for accurately capturing the sources of growth given the endogeneity of growth and accumulation is generally recognized (Rodrik 2003),

and econometric studies struggle to identify convincing causal links (as discussed by Tsakok and Gardner 2007).

Three guiding pillars have informed the methodological choices of the thesis's research design: relevance to the research topic, ability to draw on the strengths of an economic history approach, and effectively leveraging available data. Given these guidelines, the thesis applies an economic multiplier model (Paper 3); the economic history approach of gathering the data that is possible to collect, analyzing it, and identifying the patterns that emerge (Papers 1 and 2); and an analytic narrative approach (Paper 4).

Case study approach

The thesis adopts a case study approach primarily based on national-level data. As discussed by Alston (2008), macro-level case studies can be useful inroads toward developing an understanding of both the determinants and consequences of economic change. The country-specific approach is justified by the difficulty of generating insightful results through multi-country or continent-wide approaches, which are limited by the diversity among nations. All countries pursuing economic development have a unique point of departure in terms of physical endowments, social and political setting, and historical context. Moreover, development outcomes often vary even among countries that share some of these characteristics (Nayyar 2018). The macro-level, national approach is most appropriate for this thesis's sectoral-level interest in the role of the agricultural sector in economic change. In addition, the data that is needed for this question is mostly available at the national level. Finally, both agricultural and economic growth are affected by institutional and economic policies, which are determined at the national level (Lains and Pinilla 2009).

The case study of Ethiopia is not intended to be interpreted as a representative case for the broader SSA experience. Instead, it is intended to be a careful, country-specific study that considers Ethiopia's specific conditions to shed light on its particular development outcomes. Ethiopia is studied for its own sake, neither as representative nor as an outlier. On the one hand, Ethiopia has some high-level similarities with other countries in SSA; the country is poor, largely rural, has experienced economic and agricultural growth, and has undergone a slow structural transformation toward manufacturing since the turn of the millennium. On the other hand, there are also differences, such as Ethiopia's large population, relative population density in certain areas, different historical experience of colonization, and long history of state formation. Neither the unifying nor distinguishing traits are strong enough for Ethiopia to be seen as either representative of or distinct from the SSA experience. Instead, Ethiopia is chosen because its experience of agricultural and economic growth coinciding with a policy focus on the agricultural sector make it a suitable case for the

thesis's main research interest: the role of the agricultural sector in economic growth in a contemporary low-income country.

Data validity and reliability

The main data source for the thesis's empirical papers (Papers 2–4) is national-level official data from Ethiopia. This data is accessed from the Central Statistical Agency of Ethiopia (CSA), various national ministries, Ethiopia-specific publications (which use the national statistics), and data from international organizations (which also often draw on the national statistics) such as FAOstat. These sources are used to construct the datasets that form the base of the analyses in Papers 2 and 4; they are also the underlying data sources for the three Social Accounting Matrices (SAMs) used in Paper 3.

Given the centrality of the national official data for the findings of the whole thesis, the validity and reliability of this data is a key concern. Scholars have presented serious critiques of the quality of economic (Jerven 2013) and agricultural (Carletto et al. 2014) data in SSA, including Ethiopia's economic (Nega 2010) and agricultural (Dercon et al. 2009) data. The reliability of agricultural statistics in an authoritarian regime that is highly dependent on agriculture indeed warrants interrogation, especially given the centrality of this source for the paper's findings. There may be incentives to over- or underreport at the national, local, and individual levels.

The CSA data on agricultural production is not only based on farmers' recall but also crop-cuts (although on sub-samples, not whole fields), which may counterbalance some misreporting at the local level. On the individual level, comparing recall-based results with results from production diaries suggests that farmers tend to underestimate rather than overestimate production (Deininger et al. 2012). Evaluations of the national agricultural CSA data are so far consistent with the data's reliability, as indicated by Bachewe et al.'s (2018) careful study and Mellor's (2014; 2018) defense of the credibility of Ethiopia's national statistical service. Bachewe et al. (2018) triangulate the robustness of the CSA data by comparing it to several other large-scale, cross-sectional rural household survey datasets collected in the last decade in Ethiopia. These include the longitudinal Ethiopian Rural Household Survey as well as the findings based on focus group interviews in 304 kebeles (villages) presented in the 2011 Agricultural Growth Program of Ethiopia baseline survey. These complementary data sources also indicate significant yield and production growth, as shown by the CSA data. Together, these indications are interpreted to suggest that the CSA data is not grossly overestimated and is an appropriate data source for the thesis's papers.

Methods

The thesis applies both historical and economic methods to address its research questions on the role of agriculture, the state, and social capability in economic development. As such, it makes a historically and empirically grounded contribution to the current debate on these issues. The thesis uses three main methods: the construction and descriptive statistical analysis of datasets (Papers 1 and 2), the calculation of economic multipliers based on multiple SAMs (Paper 3), and an analytic narrative approach (Paper 4).

Papers 1 and 2 rely on constructing and analyzing purpose-built datasets as the main method. Paper 1 does this through a three-pronged bibliometric approach designed to explore the shifting levels of attention to agriculture in the scholarly debate. The paper constructs a dataset on three dimensions of the collective scholarly work on the role of agriculture in economic development. The first aspect of the dataset maps all articles published in the field of interest from 1969–2015 based on JEL codes. The second aspect maps the relevant articles in core journals and traces the frequency of articles with certain keywords for each journal. The third bibliometric approach is to select seminal articles and map their influence over time via citation analysis. The main data sources for this paper are the EconLit database, Kelly and Bruestle's (2011) classification of this database for each JEL code, and the Web of Science's Social Science Citation Index.

Paper 2 also constructs a purpose-built dataset on agricultural production, productivity, and agricultural public spending in Ethiopia from 1995–2018. CSA's annual reports on agricultural production are one of the paper's main data sources. The reports are available from 1995–2018, apart from the drought year of 2003 (for which the dataset instead draws on data from the National Bank of Ethiopia). The CSA reports are designed to be representative at the national, regional, and zonal levels and to cover all rural areas apart from the non-sedentary populations in a small number of zones. The reports are based on a large sample, covering 15,000–40,000 agricultural households. For international comparisons, the dataset uses data from the Food and Agriculture Organization of the United Nations (FAOstat 2019). The data on aggregate agricultural public spending mainly draws on the Statistics on Public Expenditures for Economic Development Sources (SPEED) database and the Regional Strategic Analysis and Knowledge Support System for sub-Saharan Africa (ReSAKSS). The disaggregated data is collected for 1998–2016 from the Monitoring and Analysing Food and Agricultural Policies (MAFAP) dataset and World Bank public spending reviews (World Bank 2008; World Bank 2016).

The second main method that the thesis employs is the calculation of economic multipliers based on multiple SAMs (Paper 3). Through this method, the thesis aims to address the difficulty of creating reasonable counterfactuals in the field of economic history (Michalopoulos and Papaioannou 2020). While, in general, the debate about how to achieve economic development is more nuanced than “agriculture or manufacturing” (Dorosh and Thurlow 2018), it is important to explore counterfactual sectoral investment scenarios to understand the role of agriculture in economic development. In Paper 3, an income injection is simulated to stimulate either the agricultural or manufacturing sector in Ethiopia at three points in time (2002, 2006, and 2010). This period is of particular interest, as it was a decade of substantial changes in the agricultural sector, strong political commitment to the sector, and concomitant rapid economic growth. By calculating the economic multipliers of these different injections, the study provides an indication of whether agricultural growth has been important in the Ethiopian growth. To capture the size and change of economic linkages in Ethiopia, the study calculates Semi-Input-Output (SIO) multipliers based on three SAMs. SIO multiplier analysis is a numerical description of how the exogenous inflow into one sector affects the other sectors in the economy once the structural (demand and supply) interconnections are fully taken into account (Cardenete and Sancho 2012). The main data source for Paper 3 is three available SAMs for 2002 (EDRI 2008), 2006 (EDRI 2009), and 2010 (Aragie 2014).

The benefits of the SAM methodology are that it addresses the complex question of how much agricultural growth has mattered for Ethiopia’s aggregate economic growth and that it utilizes a large amount of both macro- and micro-level data. However, the economic multipliers model used in the paper also suffers from limitations, including its assumptions regarding fixed prices and fixed structural relationships between sectors and households following increased demand; moreover, it presents the results as if the economic system adjusted immediately to exogenous changes, neglecting the institutional barriers that can prevent this from happening. The most important implication of these drawbacks is that the results of multiplier analyses are best understood as the upper bounds of economic linkages, and that the interpretation of the results therefore should focus on comparisons and trends rather than absolute levels. Despite these drawbacks, the economic multiplier model and the use of multiple SAMs to reveal change over time (which is novel for the Ethiopian case) allow us to understand the comparative importance of the agricultural sector for economic growth in Ethiopia compared to other sectors and given Ethiopia’s economic structure.

The third main method that the thesis applies is an analytic narrative approach in Paper 4. This is an attempt to place the more agriculture-specific findings of Papers 1–3 into a broader context of economic growth. The paper explores the underlying dynamics of

economic growth in Ethiopia since the end of the Imperial regime until today through the framework of “social capability.” This is done by drawing on a framework that was first proposed by Moses Abramovitz (1986; 1995) and has since been extended and operationalized (Andersson and Palacio 2017; Andersson and Andersson 2019; Andersson et al. 2021). The framework is operationalized by distinguishing between four measurable elements of social capability: the degree of structural transformation, economic inclusion, the state’s autonomy, and the state’s accountability. The underlying assumption of the framework (as applied in Paper 4) is that a country’s economy needs a solid and broad foundation of social, political, and economic structures to grow fast and long enough to catch up with high-income countries. Growth based on a narrow foundation, such as commodity exports, aid, or niche sectors only affecting small enclaves of society, is not enough to launch an economy onto a path of catch-up growth. This assumption is supported by the observation that economic and sociopolitical variables tend to move together at the macro-level (Adelman and Morris 1967; Besley and Persson 2014; Andersson and Andersson 2019).

The framework’s four elements are selected to reflect the core components of social capability as suggested by Abramovitz. The four elements also draw on the large literature on the dynamics of economic growth, especially concerning the roles of structural and agricultural transformation, inequality, and the state (Kuznets 1966; Timmer 1988; North et al. 2009; Piketty 2014). In the framework, catch-up growth is more likely to be achieved in countries with strong social capability. Social capability is, in turn, conditioned by countries’ ability to benefit from technological change (transformation) and allow their people to participate in productive economic activities (inclusion) under a state that can insulate from elite pressure (autonomy) and promote nation-building and prosperity (accountability).

Similar to the method in Papers 1 and 2, the paper constructs a dataset of these elements for Ethiopia for the period from the 1950s onwards. However, Paper 4 analyzes the data through an analytic narrative. This method is used to uncover possible causal processes and patterns by drawing both on the historian’s narrative approach and the social scientist’s rational choice analytical tools (Bates et al. 2000; López-Jerez 2014: 32, 33; Aboagye 2020: 47). While some economic historians are weary (McCloskey 2019) or even critical (North 1965) of the analytic narrative method, the thesis deems it a useful approach to get closer to the complex underlying forces at play during economic growth, as previously done in Rodrik’s (2003) edited volume and Freeman and Louçã’s (2001) approach of “reasoned history.” However, the framework recognizes that the causality between social capability and growth runs both ways and that the presented data represents correlates, not established causes, of economic growth. In any case, studying the correlates of growth may be preferable, given the

difficulty—if not impossibility—of establishing robust causal links from factors to growth outcomes (Thorbecke and Ouyang 2016).

The main data sources used to quantify the four aspects of social capability are as follows: official Ethiopian data accessed from the Ministry of Finance and Economic Development, the Ministry of Commerce and Industry, and the National Bank of Ethiopia; four Ethiopia-specific publications, which base most of their data collection on the official sources (Gill 1974; Bekele 1992; Mulat 1994; Hansson 1995); the digital document archives of the World Bank, UNESCO, and FAO; and relevant curated databases (Feenstra et al. 2015; ReSAKSS 2019; The Conference Board 2020; Timmer et al. 2015; UN Comtrade 2020; UNIDO 2020; World Bank 2020; UNU-WIDER 2020).

Summary of the Papers

Paper 1: Between the Engine and the Fifth Wheel: An Analytical Survey of the Shifting Roles of Agriculture in Development Theory

To set the stage for the thesis's focus on agriculture's role in economic development, the thesis's first paper traces influential viewpoints on the role of agriculture in development theory. It also attempts to assess and explain the pattern of fluctuating scholarly attention to agriculture over time. By exploring the historiographical trends of the thesis's main topic, Paper 1 allows the thesis's empirical papers to meaningfully build on the vast previous knowledge on the topic.

Paper 1 starts from the observation that since about 2005, there has been increased interest, both inside and outside of academia, in the agricultural development of low-income countries. At the same time, the scholarly debate in this period has featured two diametrically opposed views on the role of agriculture in economic development. This debate includes scholars who argue that agriculture plays a crucial role for both aggregate and pro-poor growth (Adelman 1984; Mellor 1999; Ravallion and Chen 2007; Timmer 2009; De Janvry and Sadoulet 2010; Christiaensen et al. 2011; Lipton 2012) as well as those who question that agricultural growth efficiently generates economic growth, reduces poverty, and acts as a precursor of development (Ashley and Maxwell 2001; Ellis 2004; Collier and Dercon 2009; Hasan and Quibria 2004; Dercon and Gollin 2014).

Through an extensive review of the key literature in development economics and agricultural economics with regard to low-income countries, the paper reviews the origins of these opposing views to understand and situate the current debate on the topic. The

paper identifies four main schools of thought that have influenced the debate, ranging from seeing agricultural development as a “fifth wheel” to development to seeing it as the engine of growth. The paper also assesses the pattern of fluctuating scholarly attention to agriculture using a bibliometric methodology that considers all economic literature published on EconLit from 1969–2015. This reveals that there have been five distinct phases of scholarly attention to agriculture in the last half-century.

The final part of the paper discusses the potential reasons behind these fluctuations. Among the potential drivers explored as explanations of the shifting attention, the analysis suggests that the most elementary role of agriculture—the ability to deliver food and nutrition to an expanding global population—has played an important role. The paper finds that the latest period of increased attention, from around 2005 to the present, has seen a concurrence of both pro-agriculture theoretical views (particularly the structural transformation perspective) and increased attention to agriculture driven by concern for food security. The rise in attention to agriculture has been further reinforced by learning from historical experiences, the emphasis on agriculture within development assistance as part of poverty reduction objectives, and the lessened policy discrimination of agriculture in low-income countries. Based on this apparent consolidation of forces viewing agriculture as an important sector in economic development, the paper concludes that we may indeed be moving toward—in Pingali’s (2010) words—an “agricultural renaissance” in the 21st century.

Paper 2: A Green Revolution in Sub-Saharan Africa? The Transformation of Ethiopia’s Agricultural Sector

The thesis’s second paper forms the foundation of the empirical case study of the performance and development of Ethiopia’s agricultural sector. Through a purpose-built dataset on agricultural production and productivity and the extent of agricultural public spending from 1994–2018, this paper explores the transformation of Ethiopia’s agricultural sector since the mid-1990s. This approach allows Paper 2 to contribute to two of the thesis’s main findings: 1) that Ethiopia has undergone an agricultural transformation with a significant production and productivity increase since the mid-1990s and 2) that the state can play a leading role in igniting agricultural growth via agricultural public spending.

Specifically, Paper 2 explores the presence of a national-level Green Revolution in Ethiopia and the role of agricultural public spending in this transformation. The emphasis on agricultural public spending is warranted given both its importance in the debate on achieving agricultural transformations and the prominent role assigned to it by the Ethiopian government. The empirical investigation reveals that an Ethiopian

Green Revolution has taken place since the mid-1990s, with a significant increase in agricultural production and productivity. This increase is mainly intensive rather than extensive, especially from 2005 onwards. It is mostly driven by land-saving technological change, although there are some signs of recent increases in labor productivity. The production increase has mainly taken place among staple-growing smallholders in agro-ecologically favorable areas.

Paper 2's analysis suggests that the Ethiopian government has played a central role in the increase in agricultural production and productivity during the Ethiopian Green Revolution through its commitment to agricultural public spending. The amount of agricultural public spending is high relative to both comparative cases in Africa today and comparative cases in South and Southeast Asia during the first Green Revolution. In terms of allocation priorities, Paper 2 shows that spending on infrastructure and extension have been central priorities in the Ethiopian case, while spending has been modest on irrigation, input subsidies, and—perhaps surprisingly—agricultural R&D.

With these findings, the paper makes two main contributions to the existing literature. First, it documents that agricultural growth was underway in the 1990s, a decade earlier than the data documented by Bachewe et al. (2018) in their careful study of the Ethiopian agricultural sector. Second, it also provides a deeper look than previous research into the composition of agricultural public spending during agricultural growth; scholars have often acknowledged the importance of agricultural spending without exploring it in detail (e.g., Bachewe et al. 2018; Dercon and Gollin 2019; Taffesse 2019; Grabowski 2020). The paper concludes that there is scope for states in today's low-income countries to take a leading role in the transformation of their agricultural sectors. Drawing on Ethiopia's experience, this could be achieved by a policy focus on agricultural public spending primarily allocated toward extension and infrastructure provision and focused on small farms growing staple crops in high-potential areas.

Paper 3: The Role of Agriculture in Economic Growth in Ethiopia: A SAM-based Analysis

The thesis's third paper addresses the role of agriculture in economic development in Ethiopia from a counterfactual perspective, comparing the economy-wide effects of growth in the agricultural sector versus the manufacturing sector. Through this approach, the paper aims to understand how important agricultural growth has been to Ethiopia's aggregate growth during the transformative period of 2002–2010. The paper is an attempt to get closer to the policy-relevant question of whether a government will reap better results from investing available resources in the agricultural

sector versus other sectors. Through this, Paper 3 provides one of the thesis's main findings, showing that agricultural growth has been the strongest engine of growth in Ethiopia given the country's economic structure.

To explore the role that agriculture has played in Ethiopia's economic development, the paper studies the size of agricultural growth linkages in Ethiopia and how this size has changed over time. It does so by applying a Semi-Input-Output (SIO) multiplier model based on three SAMs for 2001/02, 2005/06, and 2009/10 (EDRI 2008; EDRI 2009; Aragie 2014). The 2002–2010 time period is of particular interest as it was a period of rapid economic growth, substantial change in the agricultural sector, and strong political commitment to the agricultural sector. The multiple SAMs that are available for Ethiopia during this period offer a unique opportunity to provide a detailed understanding of the relationship between agricultural and economic growth in a low-income country.

Two main findings emerge from the multiplier analysis: the agricultural sector has high growth linkages in Ethiopia, and these growth linkages did not diminish during the growth process in 2002–2010. These results suggest that Ethiopia's agriculture-led growth strategy has generated more growth than a manufacturing-led strategy would have. During the period of investigation, the importance of agriculture as a growth engine was not outpaced by manufacturing—which it predictability should have been, had an industrialization process been going on. The implication of these findings is that the agricultural sector has been important for economic growth in Ethiopia, but that going forward, support both inside and outside agriculture is needed for agricultural growth to ultimately lead to a successful structural transformation away from (low productive) agriculture.

Paper 4: Is This Time Different? Catch-up Growth and Social Capability in Ethiopia 1950–2020

The current era of optimism surrounding African growth prospects is not the first such period. The 1950s and 1960s also saw a period of optimism given the political independence and economic growth in many African countries at that time. With hindsight, we know that this growth episode fizzled out and failed to generate sustained growth. Instead, many parts of Africa entered a long period of low, or even negative, growth in the last quarter of the 20th century. This paper studies the current growth episode to explore if it could be the first step of a process of catch-up growth, allowing the Ethiopian economy to catch up with the world's average income levels and, eventually, to the world's high-income countries.

The paper studies Ethiopia's current growth and its dynamics through a social capability framework, which was first proposed by Moses Abramovitz (1986; 1995) and has since been extended and operationalized by other scholars (Andersson and Palacio 2017; Andersson and Andersson 2019). Through this approach, the paper aims to 1) generate a deeper understanding of why past growth episodes in Ethiopia have not persisted long enough for Ethiopia to catch up, 2) highlight past periods of continuity and change in Ethiopia's social capability from the end of the Imperial regime (1950) until today (2020), and 3) use these findings to shed light on whether Ethiopia is currently undergoing catch-up growth that will eventually allow it to become a high-income country.

The social capability framework is operationalized by distinguishing between four measurable elements of social capability: structural transformation, economic inclusion, the state's autonomy, and the state's accountability. The paper explores the change and continuity of these elements in Ethiopia from 1950–2020 to assess if Ethiopia has become more “socially advanced” (in Abramowitz's (1986: 388) words) and to generate an in-depth understanding of the complex process of sustained economic growth in the country. It finds that the state's social capabilities modestly strengthened until the mid-1970s, but then a protracted period of weaker social capability followed. Since 2005, Ethiopia's social capability has strengthened; all four elements of social capability have improved, although the level of inclusion has been persistently low. The paper concludes that there are grounds for optimism regarding Ethiopia's future growth prospects, but that limited economic inclusion is of key concern in order for the current growth episode to become sustained growth.

Conclusion

This thesis sets out to explore three elements of economic development, using Ethiopia's experience of rapid economic growth coinciding with a policy focus on the agricultural sector as a case study. These elements are as follows: 1) the role of the agricultural sector in the economic development of a contemporary low-income country, 2) whether this recent growth episode is likely to turn into sustained economic growth, and 3) the role of the state in both agricultural and economic growth. The thesis explores these elements through four individual but interlinked papers, employing both historical and economic methods.

While the thesis cannot provide an exhaustive understanding of the role of agriculture, the state, and sustained economic growth, its four main findings add to the current understanding of these elements. First, the thesis's empirical work provides data

showing that a national-level Green Revolution has taken place in a country in SSA (Ethiopia). While previous work has shown that either region-specific or crop-specific Green Revolutions have occurred in some parts of SSA (DeGraft-Johnson et al. 2014; Otsuka and Larson 2016; Otsuka and Muraoka 2017) and that there has been substantial agricultural growth in Ethiopia since 2004 (Bachewe et al. 2018), this is—to the extent of my knowledge—the first work to show that a national-level agricultural transformation qualifying as a Green Revolution has happened in a SSA country. Second, the thesis’s counterfactual comparison of agricultural growth versus growth in the manufacturing sector (Paper 3) shows that agricultural growth has been the best engine of growth in Ethiopia, given its economic structure in 2002-2010. Based on this finding on agricultural growth’s importance to aggregate growth during the initial phase of development, the renewed interest in agriculture for development found in Paper 1 seems warranted. Third, the thesis shows that states can play a large role in igniting and sustaining agricultural growth. Paper 2 shows that a high level of agricultural public spending has been part of the Ethiopian success story and suggests that the amount and allocation of spending plays an important role in agricultural production and productivity increases. Fourth and lastly, the thesis finds that while a focus on agricultural growth can be warranted at early stages of development, rapid agricultural growth does not automatically result in sustained growth. Instead, the societal fabric (a country’s social capability) that surrounds the growth conditions its sustainability, as explored in Paper 4.

While it is not the job of an economic historian to predict the future, the thesis’s findings on the prospects for Ethiopian growth are generally positive. The agricultural sector is growing rapidly, extreme poverty is decreasing, and economic growth remains high. However, while the overall tone of the thesis is optimistic, any celebration of the country’s achievements must be tempered by the ample challenges that the country faces. Importantly, Ethiopia’s pressing security concerns and the lack of political inclusion pose real threats both to continued growth and to the safety and wellbeing of the Ethiopian peoples; efforts to stabilize the situation are crucial. Moreover, the heavy-handed governance that the Ethiopian government has engaged in during the growth period risks excluding some segments of the society, which can cause growth to stagnate and risk civil unrest. Outside the security concerns, many areas also require further improvement: the structural transformation is lagging, poverty is widespread, urbanization levels are some of the lowest in the world, and the manufacturing sector is still in its infancy. Going forward, these challenges will need to be addressed, especially those concerning political and economic inclusion.

A second prediction, or perhaps recommendation, for the future growth path of Ethiopia is that the thesis does not support an overly rapid abandonment of the

agriculture-led development strategy. Using the terminology of Timmer's (1988) four phases, it may be favorable to exhaust the benefits of the second phase, "agriculture as a contributor to growth," before moving on to the integration, and reduced role, of the agricultural sector in the economy (phases three and four). Since the Growth and Transformation Plan II in 2015 (MOFED 2015), the role of the agricultural sector as the center of development has been downplayed in Ethiopian policy in favor of manufacturing. Given the importance of agriculture uncovered in this thesis and Ethiopia's very early stage of economic development, such a shift may be premature. Instead of focusing on the manufacturing industry and industrial zones—which, even if successful, are only likely to account for a small share of total output and employment (Schmidt et al. 2018)—it may be more effective to focus on achieving structural transformation through high-productivity agriculture. If so, the under-performance of the coffee sector (Mellor 2014; Cheru et al. 2019) could be a next step to address. By focusing on such an agriculture-centered structural transformation, the country may overcome the challenges posed by its small and slow-growing manufacturing sector, huge rural population, and current discord between the output and employment aspects of the structural transformation.

In terms of future research, much work is still needed to understand the role of agriculture and the state in economic development. Three aspects of this issue seem particularly important. First, the micro-level dynamics of Ethiopia's macro-level change represent fertile ground for future research and have not been addressed in this thesis. While the macro-scale is the chosen focus of the thesis, it is a choice made at the expense of properly considering the micro-elements of agricultural and economic change. As a result, the thesis is not able to grasp the complex nature of how individuals are acting and faring in the agricultural and rural sectors. Research on the local-level dynamics of the observed increase in agricultural production and productivity would add to our previous knowledge on the drivers of micro-level agricultural change and the related processes of smallholder intensification, diversification, and commercialization (Andersson Djurfeldt and Djurfeldt 2013; Wiggins 2018). As part of this work, regional studies within Ethiopia's agricultural development would also increase our understanding of the specific dynamics of the ongoing agricultural transformation. Such regional research could help us understand why some regions of Ethiopia have thrived while others have not, shedding more light on the key aspects of the transformation dynamics.

Second, more research on the costs—and not only the benefits—of investing in agriculture versus other sectors is needed. This thesis has shown that stimulating agricultural growth has a larger effect on aggregate growth than stimulating manufacturing growth. However, it cannot speak to the cost of stimulating these

different types of growth. Hypothetically, the cost of generating agricultural growth could be so high that it offsets the benefit of generating more aggregate growth. Such research might advance our understanding of whether it is “good” to invest in agriculture and whether it is “better” than alternative investments.

Third, more research could be done on how other contemporary low-income countries could learn from Ethiopia’s experience of an agriculture-led development strategy. However, extracting any such lessons from history is a complex undertaking that should be done with proper care for each individual context (as discussed by, e.g., Harwood 2018). The thesis suggests that the Ethiopian experience could be relevant for countries that share some similarities in terms of economic structure, agro-ecological conditions, and political environment. In light of Ethiopia’s early stage of economic development, limited access to natural resources, large and rural population, land scarcity, some favorable agro-ecological areas, and the prominent role of agriculture in policy and government commitments, other countries that could draw from the Ethiopian experience include Uganda and Kenya. However, every country has its own conditions and history, and proper analysis would be needed to substantiate such a suggestion.

In addition to these three areas of future research, the aspect of climate change has not been part of the thesis, which is a limitation. Climate change has had and will continue to have a large impact on African agriculture, which may be particularly vulnerable to climate change given its rain-fed nature and often low capital intensity (Hassan 2010). While there is no inherent tension between continued agricultural expansion and environmental sustainability (Wiggins 2000; Reij and Smaling 2008), adaptation to climate change will be an important, complex, and potentially costly dimension of continued agricultural development in SSA.

Despite ample room for future research, this thesis contributes to our current knowledge given its investigation of the role of agriculture and the state in sustained economic growth, its case study of one of SSA’s fastest-growing economies, and its rich empirical data examined through both historical and economic methods. The thesis concludes that the agricultural sector continues to be an important engine of growth in today’s low-income countries and that there is scope for governments in such countries to take a leading role both in the transformation of the agricultural sector and on the path to sustained economic growth.

References

- Aboagye, P. 2020. "Inequality and Uneven Development in Ghana." Doctoral dissertation. Department of Economic History, Lund University.
- Abramovitz, M. 1986. "Catching Up, Forging Ahead, and Falling Behind." *Journal of Economic History* 46: 385–406.
- Abramovitz, M. 1995. "The Elements of Social Capability." In *Social Capability and Long-Term Economic Growth*, edited by B. Koo and D. Perkins. New York: St. Martin's Press.
- Abro, Z., and B. Alemu. 2014. "Policies for Agricultural Productivity Growth and Poverty Reduction in Rural Ethiopia." *World Development* 59: 461–474.
- Adelman, I. 1984. "Beyond Export-Led Growth." *World Development* 12(9): 937–949.
- Adelman, I., and S. Vogel. 1991. "The Relevance of ADLI for Sub-Saharan Africa." Working Paper no. 590. University of California, Berkeley.
- Adelman, I., and C. Morris. 1967. *Society, Politics & Economic Development: A Quantitative Approach*. Baltimore, MD: Johns Hopkins Press.
- AGRA. 2018. "Africa Agriculture Status Report: Catalyzing Government Capacity to Drive Agricultural Transformation." Issue 6. Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA).
- Allen, R. 1994. "Agriculture during the Industrial Revolution." In *The Economic History of Britain since 1700, 2nd edition, Vol. I: 1700-1800*, edited by R. Floud and D. McCloskey. Cambridge: Cambridge University Press.
- Alston, L. 2008. "The 'Case' for Case Studies in New Institutional Economics." In *New Institutional Economics: A Guidebook*, edited by E. Brousseau and J. M. Glachant. Cambridge: Cambridge University Press.
- Anderson, K. 2009a. "Distorted Agricultural Incentives and Economic Development: Asia's Experience." *The World Economy* 32(3): 351–84.
- Anderson, K. 2009b. *Distortions to Agricultural Incentives: A Global Perspective, 1955-2007*. Washington DC: World Bank and Palgrave Macmillan.
- Andersson Djurfeldt, A., and G. Djurfeldt. 2013. "Structural Transformation and African Smallholders: Drivers of Mobility within and between the Farm and Non-farm Sectors for Eight Countries." *Oxford Development Studies* 41(3): 281–306.
- Andersson Djurfeldt, A. 2017a. "Food Security, Nutrition and Commercialisation in Sub-Saharan Africa – A Synthesis of AFRINT Findings." APRA Working Paper 2, Future Agricultures Consortium.
- Andersson Djurfeldt, A. 2017b. "Pro-poor Agricultural Growth – Village Dynamics and Commercialisation Pathways." APRA Working Paper 3, Future Agricultures Consortium.
- Andersson, J. 2018. "State Capacity and Development in Francophone West Africa." Doctoral dissertation, Department of Economic History, Lund University. <http://lup.lub.lu.se/record/ee203029-2d85-46d9-81af-bbbbc5357b9eb>.
- Andersson, J., and M. Andersson. 2019. "Beyond Miracle and Malaise. Social Capability in Côte d'Ivoire and Senegal during the Development Era 1930–1980." *Studies in Comparative International Development* 54: 210–232.

- Andersson, M., T. Axelsson, and A. Palacio. 2021. "Resilience to Economic Shrinking in an Emerging Economy – The Role of Social Capabilities in Indonesia 1950-2015." *Journal of Institutional Economics*.
- Andersson, M., and A. Palacio. 2017. "Catch Up Growth and Social Capability in Developing Countries: A Conceptual and Measurement Proposal." *Oasis* 26: 7–23.
- Aragie, E. 2014. "Climate Change and Semi-subsistence Agricultural Households." Doctoral dissertation, Oxford Brookes University.
- Arndt, H. 1987. *Economic Development: The History of an Idea*. Chicago: University of Chicago Press.
- Ashley, C., and S. Maxwell. 2001. "Rethinking Rural Development." *Development Policy Review* 19: 395–425.
- Bachewe, F., G. Berhane, B. Minten, and A. Taffesse. 2016. "Non-farm Income and Labor Markets in Rural Ethiopia." ESSP Working Papers no. 90. International Food Policy Research Institute, Washington DC.
- Bachewe, F., G. Berhane, B. Minten, and A. Taffesse. 2018. "Agricultural Transformation in Africa? Assessing the Evidence in Ethiopia." *World Development* 150: 286–298.
- Bairoch, P. 1973. "Agriculture and the Industrial Revolution, 1700-1914." In *The Industrial Revolution, 1700-1914*, edited by C. Cipolla. London: Collins/Fontana.
- Barrett, C., M. Carter, and P. Timmer. 2010. "A Century-Long Perspective on Agricultural Development." *American Journal of Agricultural Economics* 92(2): 447–468. DOI: 10.1093/ajae/aaq005.
- Bates, R., H. Greif, A. Levi, M. Rosenthal, and B. Weingast. 2000. "The Analytic Narrative Project – Analytical Narratives." *American Political Science Review* 94(3): 696–7022.
- Bautista, R., S. Robinson, and M. El-Said. 1999. "Alternative Industrial Development Paths for Indonesia: SAM and CGE Analyses." TMD Discussion Paper No. 42. International Food Policy Research Institute, Washington DC.
- Bayart, J. 1993. *The State in Africa: The Politics of the Belly*, 2nd ed. London: Longman.
- Bekele, S., ed. 1992. *An Economic History of Ethiopia. Vol. 1: The Imperial Era, 1941–1974*. Addis Ababa: Department of History, Addis Ababa University.
- Benin, S., A. Nin Pratt, S. Fan, C. Breisinger, T. Mogues, J. Thurlow, and X. Diao. 2008. "Growth and Poverty Reduction Impacts of Public Investments in Agriculture and Rural Areas Assessment Techniques, Tools, and Guide for Practitioners." ReSAKSS Working Papers no. 7. International Food Policy Research Institute, Washington DC.
- Benin, S., and B. Yu. 2012. "Complying with the Maputo Declaration Target: Trends in Public Agricultural Expenditures and Implications for Pursuit of Optimal Allocation of Public Agricultural Spending." Annual Trends and Outlook Report 2012. International Food Policy Research Institute.
- Berhane, G., M. Dereje, B. Minten, and S. Tamru. 2017. "The Rapid – but from a Low Base – Uptake of Agricultural Mechanization in Ethiopia: Patterns, Implications and Challenges." ESSP Working Papers no.105. International Food Policy Research Institute, Washington DC.
- Besley, T., and T. Persson. 2014. "The Causes and Consequences of Development Clusters: State Capacity, Peace, and Income." *Annual Review of Economics* 6: 927–949.

- Binswanger, H., and V. Ruttan. 1978. *Induced Innovation: Technology, Institutions, and Development*. Baltimore, MD: Johns Hopkins University Press.
- Birner, R., and D. Resnick. 2010. "The Political Economy of Policies for Smallholder Agriculture." *World Development* 38(10): 1442–1452.
- Boserup, E. 1965. *The Conditions of Agricultural Growth*. Chicago: Aldine.
- Bosworth, B., and S. M. Collins. 2008. "Accounting for Growth: Comparing China and India." *Journal of Economic Perspectives* 22: 45–66.
- Bravo-Ortega, C., and D. Lederman. 2005. "Agriculture and National Welfare around the World: Causality and Heterogeneity since 1960." Policy Research Working Paper no. 3499. The World Bank, Washington DC.
- Broadberry, S., and L. Gardner. 2019. "Economic Growth in Sub-Saharan Africa, 1885–2008." Economic History Working Papers no 296: London School of Economics and Political Science.
- Cardenete, M., and F. Sancho. 2012. "The Role of Supply Constraints in Multiplier Analysis." *Economic Systems Research* 24(1): 21–34. DOI: 10.1080/09535314.2011.615824.
- Carletto, C., D. Jolliffe, and R. Banerjee. 2014. "The Emperor Has No Data! Agricultural Statistics in Sub-Saharan Africa (Technical Report)." Washington DC, World Bank.
- Central Statistical Agency of Ethiopia (CSA). 1995–2018. *Agricultural Sample Survey: Volume I – Report on Area and Production of Crops (Private Peasant Holdings, Meher Season)*. Addis Ababa: Federal Democratic Republic of Ethiopia Central Statistical Agency.
- Chenery, H., and M. Syrquin. 1975. *Patterns of Development, 1950–1970*. Oxford: Oxford University Press.
- Chang, H., and J. Hauge. 2019. "The Concept of a 'Developmental State' in Ethiopia." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Cheru, F., C. Cramer, and A. Oqubay. 2019. "Introduction." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Chinigò, D., and E. Faniti. 2015. "Thermidor in Ethiopia? Agrarian Transformations between Economic Liberalization and the Developmental State." *EchoGéo* 31: 2–13.
- Christiaensen, L., L. Demery, and J. Kuhl. 2011. "The (Evolving) Role of Agriculture in Poverty Reduction – An Empirical Perspective." *Journal of Development Economics* 96(2): 239–54.
- Cioni, M., G. Federico, and M. Vasta. 2020. "The Two Revolutions in Economic History," Working Papers 0192, European Historical Economics Society (EHES).
- Clapham, C. 2018. "The Ethiopian Developmental State." *Third World Quarterly* 39(6): 1151–1165.
- Clapham, C. 2019. "The Political Economy of Ethiopia from the Imperial Period to the Present." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Clark, C. 1940. *The Conditions of Economic Progress*. London: Macmillan.
- Clark, G. 2007. *A Farewell to Alms: A Brief Economic History of the World*. Princeton, NJ: Princeton University Press.

- Coady, D., and S. Fan. 2008. "Introduction." In *Public Expenditures, Growth, and Poverty*, edited by S. Fan. Baltimore, MD: Johns Hopkins University Press.
- Collier, P., and S. Dercon. 2009. "African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?" Background paper for the Expert Meeting on How to Feed the World in 2050, FAO.
- Collier, P., and S. Dercon. 2014. "African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?" *World Development* 63: 92–101.
- Cramer, C., J. Sender, and A. Oqubay. 2020. *African Economic Development: Evidence, Theory, Policy*. Oxford: Oxford University Press.
- Crawford, E., V. Kelly, T. Jayne, and J. Howard. 2003. "Input Use and Market Development in Sub-Saharan Africa: An Overview." *Food Policy* 28: 277–292.
- CSA (Central Statistical Agency of Ethiopia). 1995–2018. *Agricultural Sample Survey: Volume I—Report on Area and Production of Crops (Private Peasant Holdings, Meher Season)*. Addis Ababa: Federal Democratic Republic of Ethiopia Central Statistical Agency.
- Davis, K., B. Swanson, D. Amudavi, D. Mekonnen, A. Flohrs, J. Riese, C. Lamb, and E. Zerfu. 2010. "In-Depth Assessment of the Public Agricultural Extension System of Ethiopia and Recommendations for Improvement." Discussion Paper no. 01041. International Food Policy Research Institute, Washington DC.
- Defourny, J., and E. Thorbecke. 1984. "Structural Path Analysis and Multiplier Decomposition within a Social Accounting Matrix." *Economic Journal* 94: 111–136.
- Deininger, K., C. Carletto, S. Savastano, and J. Muwonge. 2012. "Can Diaries Help in Improving Agricultural Production Statistics? Evidence from Uganda." *Journal of Development Economics* 98(1): 42–50.
- De Janvry, A. 2010. "Agriculture for Development: New Paradigm and Options for Success." *Agricultural Economics* 41(s1): 17–36.
- De Janvry, A., and E. Sadoulet. 2010. "Agricultural Growth and Poverty Reduction: Additional Evidence." *World Bank Research Observer* 25(1): 1–20.
- De Janvry, A., and E. Sadoulet. 2019. "Transforming Developing Country Agriculture: Removing Adoption Constraints and Promoting Inclusive Value Chain Development." HAL Id: hal-02287668. <https://hal.archives-ouvertes.fr/hal-02287668>.
- Dercon, S., R. Hill, and A. Zeitlin. 2009. "In Search of a Strategy: Revisiting Agriculture-Led Growth in Ethiopia." Synthesis Paper prepared as part of a study on Agriculture and Growth in Ethiopia.
- Dercon, S., and D. Gollin. 2014. "Agriculture in African Development: Theories and Strategies." *Annual Review of Resource Economics* 6(1): 471–492.
- Dercon, S., and D. Gollin. 2019. "Agriculture's Changing Role in Ethiopia's Economic Transformation." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Diao, X., D. Headey, and M. Johnson. 2008. "Toward a Green Revolution in Africa: What Would It Achieve, and What Would It Require?" *Agricultural Economics* 39: 539–550.
- Diao, X., P. Hazell, and J. Thurlow. 2010. "The Role of Agriculture in African Development." *World Development*, 38(10): 1375–1383.

- Diebolt, C., and M. Hauptert. 2018. "We Are Ninjas: How Economic History Has Infiltrated Economics." Working Papers of BETA. Strasbourg: Bureau d'Economie Théorique et Appliquée.
- Djurfeldt, G., H. Holmén, M. Jirström, and R. Larsson. 2005. "African Food Crisis - The Relevance of Asian Experiences." In *The African Food Crisis: Lessons from the Asian Green Revolution*, edited by G. Djurfeldt, H. Holmén, M. Jirström and R. Larsson. Wallingford: CABI Publishing.
- Dorosh, P., and J. Thurlow. 2018. "Beyond Agriculture versus Non-Agriculture: Decomposing Sectoral Growth–Poverty Linkages in Five African Countries." *World Development* 109: 440–451.
- Dorward, A., S. Fan, J. Kydd, H. Lofgren, J. Morrison, C. Poulton, et al. 2004. "Institutions and Policies for Pro-poor Agricultural Growth." *Development Policy Review* 2(6): 611–622.
- Easterly, W., and S. Rebelo. 1993. "Fiscal Policy and Economic Growth: An Empirical Investigation." *Journal of Monetary Economics* 32(2): 417–458.
- EDRI (Ethiopian Development Research Institute). 2008. "Social Accounting Matrix for Ethiopia 2001/2002 (EFY 1994): Data Sources and Compilation Process." Addis Ababa.
- EDRI (Ethiopian Development Research Institute). 2009. "A Regionalized Social Accounting Matrix for Ethiopia, 2005/06: Data Sources and Compilation Process." Addis Ababa.
- EHRC (Ethiopian Human Rights Commission). 2020. "Rapid Investigation into Grave Human Rights Violation in Maikadra Preliminary Findings." Ethiopian Human Rights Commission, Addis Ababa.
- EHRC (Ethiopian Human Rights Commission). 2021. "Brief Monitoring Report on the Situation of Civilians in Humera, Dansha and Bissaber." Ethiopian Human Rights Commission, Addis Ababa.
- Eicher, C. 1995. "Zimbabwe's Maize-Based GR: Preconditions for Replication." *World Development* 23(5): 805–818.
- Ellis, F. 2004. "Occupational Diversification in Developing Countries and the Implications for Agricultural Policy." Programme of Advisory and Support Services to DFID (PASS). Project No. WB0207.
- Estudillo, J., and K. Otsuka. 1999. "Green Revolution, Human Capital, and Off-Farm Employment: Changing Sources of Income among Farm Households in Central Luzon, 1966–1994." *Economic Development and Cultural Change*, 47(3): 497–523.
- Estudillo, J., and K. Otsuka. 2013. "Lessons from the Asian Green Revolution in Rice." In *An African Green Revolution. Finding Ways to Boost Productivity on Small Farms*, edited by K. Otsuka and D. Larson. Dordrecht, Heidelberg, New York, and London: Springer.
- FAO. 2003. "Summary Report on Recent Economic and Agricultural Policy." Food and Agriculture Organization of the United Nations. Accessed May 10, 2017. ftp://ftp.fao.org/es/esa/roa/pdf/1_Policy/Policy_Ethiopia.pdf.
- FAO. 2014. "Public Expenditures in Support of Food and Agriculture Development in the Federal Republic of Ethiopia, 2006/07–2012/13: A Preliminary Assessment." Technical notes series, MAFAP, by B. Lanos, A. Mas Aparisi and F. Woldeyes, Rome.

- FAO. 2016. "FAO in Ethiopia El Niño Response Plan 2016." Food and Agriculture Organization of the United Nations, Addis Ababa.
- FAO. 2020. Smallholders Data Portrait Database. Food and Agriculture Organization of the United Nations: Rome. Accessed 26 August 2020. <http://www.fao.org/family-farming/data-sources/dataportrait/farm-size/en/>.
- FAOstat. 2019. Food and Agriculture Organization of the United Nations Database. Accessed August 15, 2019. <http://www.fao.org/faostat/en>.
- Federico, G. 2005. *Feeding the World: An Economic History of Agriculture, 1800-2000*. Princeton: Princeton University Press.
- Feenstra, R., R. Inklaar, and M. Timmer. 2015. "The Next Generation of the Penn World Table." *American Economic Review*, 105(10): 3150–3182. Available for download at www.ggdc.net/pwt.
- Fioramonti, L. 2017. "The Africa Rising Story was Based on Faulty Logic – Here's How to Fix It." *The Conversation*, October 30, 2017. <https://theconversation.com/the-africa-rising-story-was-based-on-faulty-logic-heres-how-to-fix-it-86327>.
- Frankema, E. 2014. "Africa and the Green Revolution A Global Historical Perspective." *NJAS - Wageningen Journal of Life Sciences* 70–71: 17–24.
- Frankema, E., and M. van Waijenburg. 2012. "Structural Impediments to African Growth? New Evidence from Real Wages in British West Africa, 1880-1965." *Journal of Economic History* 72: 895–926.
- Frankema, E., and M. van Waijenburg. 2018. "Africa Rising? A Historical Perspective." *African Affairs* 117(469): 543–568.
- Freeman, C., and F. Louçã. 2001. *As Time Goes By: From the Industrial Revolutions to the Information Revolution*. Oxford: Oxford University Press.
- Gardner, B. 2000. "Economic Growth and Low Income Agriculture." *American Journal of Agricultural Economics* 82: 1059–1074.
- Gavin, M. 2021. "The Conflict in Ethiopia's Tigray Region: What to Know." Council on Foreign Relations. February 10th, 2021. <https://www.cfr.org/in-brief/conflict-ethiopia-tigray-region-what-know>.
- Ghins, L., A. M. Aparisi, and J. Balié. 2017. "Myths and Realities about Input Subsidies in Sub-Saharan Africa." *Development Policy Review* 35(S2): 214–233.
- Gill, G., ed. 1974. *Readings on the Ethiopian Economy*. Addis Ababa: Institute of Development Research, Faculty of Arts, Haile Selassie I University.
- Gollin, D., R. Jedwab, and D. Vollrath. 2016. "Urbanization with and without Industrialization." *Journal of Economic Growth*, 21(1): 35–70.
- Grabowski, R. 2014. "Economic Growth without Transformation: The Case of Uganda." *Canadian Journal of Development Studies* 35(2): 314–327.
- Grabowski, R. 2020. "Agrarian Big Push Strategy of Economic Development: An Ethiopian Example." *Forum for Development Studies* 47(3): 489–510.
- Gulati, A., S. Fan, and S. Dafali. 2005. "The Dragon and the Elephant." MTID Discussion Paper no. 87. International Food Policy Research Institute.

- Haggblade, S., P. Hazell, and T. Reardon, eds. 2007. *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World*. Published for the International Food Policy Research Institute. Baltimore, MD: The John Hopkins University Press.
- Hansson, G. 1995. *The Ethiopian Economy 1974–1994: Ethiopia Tikdem and After*. Routledge.
- Hart, G. 1998. “Regional Linkages in the Era of Liberalization: A Critique of the New Agrarian Optimism.” *Development and Change* 29(1): 27–54.
- Harwood, J. 2018. “Another Green Revolution? On the Perils of ‘Extracting Lessons’ from History.” *Society for International Development*. <https://doi.org/10.1057/s41301-018-0174-5>.
- Hasan, R., and M. Quibria. 2004. “Industry Matters for Poverty: A Critique of Agricultural Fundamentalism.” *Kyklos* 57(2): 253–264.
- Hassan, R. 2010. “Implications of Climate Change for Agricultural Sector Performance in Africa: Policy Challenges and Research Agenda.” *Journal of African Economies* 19, issue supplement 2: ii77–ii105.
- Hayami, Y., and V. Ruttan. 1971. *Agricultural Development: An International Perspective*. Baltimore, MD: Johns Hopkins University Press.
- Hayami, Y., and V. Ruttan. 1985. *Agricultural Development: An International Perspective, Revised Edition*. Baltimore, MD: Johns Hopkins University Press.
- Hazell, P. 2009. “The Asian Green Revolution.” IFPRI Discussion Paper. International Food Policy Research Institute, Washington DC.
- Hazell, P., S. Haggblade, and T. Reardon. 2007. “Structural Transformation of the Rural non Farm Economy.” In *Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World*, edited by S. Haggblade, P. Hazell and T. Reardon, 83–98. Baltimore, MD: Johns Hopkins University Press.
- Headey, D., M. Dereje, and A. Taffesse. 2014. “Land Constraints and Agricultural Intensification in Ethiopia: A Village-Level Analysis of High-Potential Areas.” *Food Policy* 48: 129–141.
- Hemming, D., E. Chirwa, A. Dorward, H. Ruffhead, et al. 2018. “Agricultural Input Subsidies for Improving Productivity, Farm Income, Consumer Welfare and Wider Growth in Low- and Lower-Middle-Income Countries: A Systematic Review.” *Campbell Systematic Reviews* 14(1): 1–153.
- Henley, D. 2012. “The Agrarian Roots of Industrial Growth: Rural Development in South-East Asia and Sub-Saharan Africa.” *Development Policy Review* 30: s25–s47.
- Hindriks, J., and G. D. Myles. 2006. *Intermediate Public Economics*. Cambridge and London: MIT Press.
- Hirschman, A. 1958. *The Strategy of Economic Development*. New Haven: Yale University Press.
- Hirschman, A. 1971. *A Bias for Hope: Essays on Development and Latin America*. New Haven and London: Yale University Press.
- Holmén, H. 2005. “The State and Agricultural Intensification in Sub-Saharan Africa.” In *The African Food Crisis: Lessons from the Asian Green Revolution*, edited by G. Djurfeldt, H. Holmén, M. Jirström and R. Larsson. Wallingford: CABI Publishing.

- IMF (International Monetary Fund). 2001. *Government Finance Statistics Manual*. International Monetary Fund, Washington DC.
- IMF (International Monetary Fund). 2020. "World Economic Outlook Database, October 2020." International Monetary Fund, Washington DC. Accessed December 31, 2020. <https://www.imf.org/en/Publications/WEO/weo-database/2020/October>.
- Jayne, T., J. Chamberlin, and R. Benfica. 2018. "Africa's Unfolding Economic Transformation." *The Journal of Development Studies* 54(5): 777–787. <https://doi.org/10.1080/00220388.2018.1430774>.
- Jerven, M. 2010. "African Growth Recurring: An Economic History Perspective on African Growth Episodes, 1690–2010." *Economic History of Developing Regions* 25: 127–154.
- Jerven, M. 2013. *Poor Numbers: How We Are Misled by African Development Statistics and What to Do about It*. Ithaca: Cornell University Press.
- Jirström, M., M. Francisa Archila Bustos, and S. Aloblo Loison. 2018. "African Smallholder Farmers on the Move: Farm and Non-farm Trends for Six Sub-Saharan African Countries, 2002–15." In *Agriculture, Diversification, and Gender in Rural Africa: Longitudinal Perspectives from Six Countries*, edited by A. Andersson Djurfeldt, F. Mawunyo Dzanku and A. Cuthbert Isinika, 17–53. Oxford: Oxford University Press.
- Johnson, M., P. Hazell, and A. Gulati. 2003. "The Role of Intermediate Factor Markets in Asia's Green Revolution: Lessons for Africa?" *American Journal of Agricultural Economics* 85(5): 1211–1216.
- Johnston, B., and P. Kilby. 1975. *Agriculture and Structural Transformation: Economic Strategies in Late-Developing Countries*. Oxford: Oxford University Press.
- Johnston, B., and J. Mellor. 1961. "The Role of Agriculture in Economic Development." *The American Economic Review* 51(4): 566–593.
- Jorgenson, D. 1961. "The Development of a Dual Economy." *Economic Journal* 71: 309–34.
- Kelly, M. A., and S. Bruestle. 2011. "Trend of Subjects Published in Economics Journals 1969–2007." *Economic Inquiry* 49(3): 658–673.
- Krueger, A. O., M. Schiff, and A. Valdés. 1988. "Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economywide Policies." *The World Bank Economic Review*, 255–271.
- Krueger, A. O., M. Schiff, and A. Valdés, eds. 1991. *The Political Economy of Agricultural Pricing Policy*. Baltimore, MD: John Hopkins University Press.
- Kuznets, S. 1961. "Economic Growth and the Contribution of Agriculture: Notes on Measurement." *International Journal of Agrarian Affairs* 3: 59–75.
- Kuznets, S. 1966. *Modern Economic Growth: Rate, Structure and Spread*. New Haven and London: Yale University Press.
- Lains, P., and V. Pinilla. 2009. "Introduction." In *Agriculture and Economic Development in Europe since 1870*, edited by P. Lains and V. Pinilla. Abingdon, Oxon: Routledge.
- Lee, S. 2007. "Public Spending." In *Encyclopedia of Governance*, edited by M. Bevir and T. Gale. Sage Publications: Thousand Oaks, California.
- Lewis, A. 1954. "Economic Development with Unlimited Supplies of Labour." *The Manchester School*, 22(2): 139–191.

- Lipton, M. 2005. "The Family Farm in a Globalizing World: The Role of Crop Science in Alleviating Poverty". 2020 Vision Discussion Papers 40. International Food Policy Research Institute. Washington, DC.
- Lipton, M. 2012. "Income from Work: The Food-Population-Resource Crisis in the 'Short Africa.'" Leontief Prize Lecture, Tufts University.
- Little, I. 1982. *Economic Development*. New York: Basic Books.
- López-Jerez, M. 2014. "Deltas Apart: Factor Endowments, Colonial Extraction and Pathways of Agricultural Development in Vietnam." Doctoral dissertation, Department of Economic History, Lund University.
- MAFAP (Monitoring and Analysing Food and Agricultural Policies). 2019. Food and Agriculture Organization of the United States, Rome. <http://www.fao.org/in-action/mafap/data/en/>.
- Manyazewal, M., and A. Shiferaw. 2019. "Economic Policy and Structural Transformation in Ethiopia." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Martin, W., and D. Mitra. 2001. "Productivity Growth and Convergence in Agriculture versus Manufacturing." *Economic Development and Cultural Change* 49: 403–422.
- Martins, P. 2018. "Structural Change in Ethiopia." *Development Policy Review* 36: O183–O200.
- Masters, W. A., A. Andersson Djurfeldt, C. De Haan, P. Hazell, T. Jayne, M. Jirstrom, and T. Reardon. 2013. "Urbanization and Farm Size in Asia and Africa: Implications for Food Security and Agricultural Research." *Global Food Security* 2(3): 156–65.
- McCloskey, D. 2019. "Economic History as Humanomics: The Scientific Branch of Economics." In *The Handbook of Cliometrics*, edited by C. Diebolt and M. Hauptert. Berlin: Springer Verlag.
- Mellor, J. 1976. *The New Economics of Growth: A Strategy for India and the Developing World*. Ithaca, NY: Cornell University Press.
- Mellor, J. 1999. "Faster, More Equitable Growth: The Relation Between Growth in Agriculture and Poverty Reduction." CAER. Cambridge, MA: Harvard University Press.
- Mellor, J. 2014. "High Rural Population Density Africa – What Are the Growth Requirements and Who Participates?" *Food Policy* 48: 66–75.
- Mellor, J. 2017. *Agricultural Development and Economic Transformation: Promoting Growth with Poverty Reduction*. Palgrave Macmillan.
- Mellor, J. 2018. "Introduction." In *Africa Agriculture Status Report: Catalyzing Government Capacity to Drive Agricultural Transformation*. Issue 6. Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA).
- Michalopoulos, S., and Papaioannou, E. 2020. "Historical Legacies and African Development." *Journal of Economic Literature* 58(1): 53–128.
- Milbourne, R., G. Otto, and G. Voss. 2003. "Public Investment and Economic Growth." *Applied Economics* 35(5): 527–540.
- MOFED (Ministry of Finance and Economic Development). 2002. *Sustainable Development and Poverty Reduction Program*. Addis Ababa: Federal Democratic Republic of Ethiopia.
- MOFED (Ministry of Finance and Economic Development). 2003. *Rural Development Policy and Strategies*. Addis Ababa: Federal Democratic Republic of Ethiopia.

- MOFED (Ministry of Finance and Economic Development). 2005. *Building on Progress. A Plan for Accelerated and Sustained Development to End Poverty*. Addis Ababa: Federal Democratic Republic of Ethiopia.
- MOFED (Ministry of Finance and Economic Development). 2010. *Growth and Transformation Plan*. Addis Ababa: Federal Democratic Republic of Ethiopia.
- MOFED (Ministry of Finance and Economic Development). 2015. *Growth and Transformation Plan II*. Addis Ababa: Federal Democratic Republic of Ethiopia.
- Mogues, T. 2011. "The Bang for the Birr: Public Expenditures and Rural Welfare in Ethiopia." *Journal of Development Studies* 47(5): 735–752.
- Mogues, T., B. Yu, S. Fan, and L. McBride. 2012. "The Impacts of Public Investment in and for Agriculture. Synthesis of the Existing Evidence." ESA Working paper No. 12-07. Agricultural Development Economics Division, Food and Agriculture Organization of the United Nations.
- Mogues, T., A. Benin., and S. Fan. 2015. "Public Investments in and for Agriculture." *European Journal of Development Research* 27(3): 337–352.
- Mosher, A. 1966. *Getting Agriculture Moving: Essentials for Development and Modernization*. Published for the Agricultural Development Council by Praeger.
- Mulat, T. 1994. "Trends in Government Expenditure Finances." In *The Ethiopian Economy: Problems of Adjustment*, edited by M. Tadesse and A. B. Kello. Addis Ababa: Addis Ababa University Press.
- Mundlak, Y., D. Larson, and R. Butzer. 2004. "Agriculture Dynamics in Thailand, Indonesia and the Philippines." *Australian Journal of Agricultural and Resource Economics* 48(1): 95–126.
- Myles, G. D. 1995. *Public Economics*. Cambridge: Cambridge University Press.
- Myint, H. 1958. "The 'Classical Theory' of International Trade and the Underdeveloped Countries." *The Economic Journal* 68(270): 317–337.
- Myrdal, G. 1944. *An American Dilemma: The Negro Problem and Modern Democracy*. New York: Harper & Bros.
- Myrdal, G. 1968. *Asian Drama: An Inquiry into the Poverty of Nations*, 3 vols. New York: Pantheon Books.
- Nayyar, D. 2018. "Rethinking Asian Drama." WIDER Working Paper, No. 2018/150. The United Nations University World Institute for Development Economics Research, Helsinki.
- Nega, B. 2010. "No Shortcut to Stability: Democratic Accountability and Sustainable Development in Ethiopia." *Social Research* 77(4): 1401–1446.
- North, D. 1965. "The State of Economic History." *The American Economic Review* 55(1/2): 86–91.
- North, D., J. Wallis, and B. Weingast. 2009. *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*. Cambridge: Cambridge University Press.
- Ohkawa, K., and H. Rosovsky. 1960. "The Role of Agriculture in Modern Japanese Economic Development." *Economic Development and Cultural Change* 1: 43–67.

- Otsuka, K., and Y. Kijima. 2010. "Technology Policies for a Green Revolution and Agricultural Transformation in Africa." *Journal of African Economies* 19 (suppl. 2): ii60–ii76.
- Otsuka, K., and D. Larson, eds. 2013. *An African Green Revolution. Finding Ways to Boost Productivity on Small Farms*. Dordrecht, Heidelberg, New York, and London: Springer.
- Otsuka, K., and D. Larson, eds. 2016. *In Pursuit of an African Green Revolution: Views from Rice and Maize Farmers' Fields*. Dordrecht Heidelberg New York London: Springer.
- Otsuka, K., and R. Muraoka. 2017. "A Green Revolution for Sub-Saharan Africa: Past Failures and Future Prospects." *Journal of African Economies* 26: AERC Supplement 1: i73–i98.
- Piketty, T. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Pingali, P. 2010. "Agriculture Renaissance: Making 'Agriculture for Development' Work in the 21st Century." In *Handbook of Agricultural Economics*, edited by P. Pingali and R. Evenson 3867–3894. Elsevier.
- Pinilla, V. 2019. "Agricliometrics and Agricultural Change in the Nineteenth and Twentieth Centuries." In *Handbook of Cliometrics*, edited by C. Diebolt and M. Hauptert.
- Powell, M., and J. Round. 2000. "Structure and Linkage in the Economy of Ghana: A SAM Approach." In *Economic Reforms in Ghana: Miracle or Mirage*, edited by E. Aryeetey, J. Harrigan and M. Nissanke. Oxford: James Currey Press.
- Prebisch, R. 1959. "International Trade and Payments in an Era of Coexistence." *The American Economic Review* 49(2): 251–273.
- Preobrazhensky, E. 1965. *The New Economics*. Oxford: Clarendon Press.
- Ranis, G., and J. Fei. 1961. "A Theory of Economic Development." *The American Economic Review* 51(4): 533–565.
- Rashid, S., P. Dorosh., M. Malek, and S. Lemma. 2013a. "Modern Input Promotion in Sub-Saharan Africa: Insights from Asian Green Revolution." *Agricultural Economics* 44: 705–721.
- Rashid, S., N. Tefera, N. Minot, and G. Ayele. 2013b. "Can Modern Input Use Be Promoted without Subsidies? An Analysis of Fertilizer in Ethiopia." *Agricultural Economics* 44: 595–611.
- Ravallion, M., and S. Chen. 2007. "China's (Uneven) Progress against Poverty." *Journal of Development Economics* 82(1): 1–42.
- Reij, C. P., and E. M. A. Smaling. 2008. "Analyzing Successes in Agriculture and Land Management in Sub-Saharan Africa: Is Macro-level Gloom Obscuring Positive Micro-level Change?" *Land Use Policy* 25: 410–420.
- ReSAKSS (Regional Strategic Analysis and Knowledge Support System). 2019. International Food Policy Research Institute, Washington DC. <https://www.resakss.org/>.
- Rodrik, D. 1999. "Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses." *Journal of Economic Growth* 4(4): 385–112.
- Rodrik, D., ed. 2003. *In Search of Prosperity: Analytic Narratives on Economic Growth*. Princeton: Princeton University Press.
- Rodrik, D. 2011. "The Future of Economic Convergence." NBER Working Paper 17400. National Bureau of Economic Research, Cambridge, Massachusetts.

- Schmidt, E., P. Dorosh, M. Jemal, and J. Smart. 2018. "Ethiopia's Spatial and Structural Transformation: Public Policy and Drivers of Change." ESSP Working Papers no. 119. International Food Policy Research Institute, Washington DC.
- Schultz, T. W. 1964. *Transforming Traditional Agriculture*. New Haven: Yale University Press.
- Sebastian, K. 2014. "Growing Conditions: Agroecological Zones." *Atlas of African Agriculture Research & Development*. International Food Policy Research Institute, Washington DC.
- Self, S., and R. Grabowski. 2007. "Economic Development and the Role of Agricultural Technology." *Agricultural Economics* 36: 395–404.
- Shiferaw, B. 2019. "Ethiopia's Transition from a Traditional to a Developing Economy, 1890s–1960s." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Singer, H. 1950. "Comments to the Terms of Trade and Economic Development." *Review of Economics and Statistics* 40: 84–89.
- Singer, H. 1979. "Policy Implications of the Lima Target." *Industry and Development* 3: 17–32.
- Smale, M. 1995. "Maize is Life: Malawi's Delayed Green Revolution." *World Development* 23(5): 819–831.
- SPEED (Statistics on Public Expenditures and Economic Development). 2015. International Food Policy Research Institute, Washington DC.
<https://doi.org/10.7910/DVN/INZ3QK>.
- Staatz, J. M., and C. K. Eicher. 1998. "Agricultural Development Ideas in Historical Perspective." In *International Agricultural Development*, edited by C. K. Eicher and J. M. Staatz. Baltimore, MD: Johns Hopkins University Press.
- Taffesse, A. 2019. "The Transformation of Smallholder Crop Production in Ethiopia, 1994–2016." In *The Oxford Handbook of the Ethiopian Economy*, edited by F. Cheru, C. Cramer and A. Oqubay. Oxford: Oxford University Press.
- Tarp, F., D. Roland-Holst, and J. Rand. 2002. "Trade and Income Growth in Vietnam: Estimates from a New Social Accounting Matrix." *Economic Systems Research* 14(2): 157–184.
- Temin, P. 2016. "Economic History and Economic Development: New Economic History in Retrospect and Prospect." In *The Handbook of Cliometrics*, edited by C. Diebolt and M. Hauptert. Berlin: Springer Verlag.
- The Conference Board. 2020. Total Economy Database: Output, Labor and Labor Productivity, 1950–2019. <https://www.conference-board.org/data/economydatabase/total-economy-database-productivity>.
- Tiffin, R., and X. Irz. 2006. "Is Agriculture the Engine of Growth?" *Agricultural Economics* 35: 78–89.
- Tijani, A., O. Oluwasola, and O. Baruwa. 2015. "Public Sector Expenditure in Agriculture and Economic Growth in Nigeria: An Empirical Investigation." *Agrekon* 54(2): 76–92.
- Timmer, M., G. de Vries, and K. de Vries. 2015. "Patterns of Structural Change in Developing Countries." In *Routledge Handbook of Industry and Development*, edited by J. Weiss and M. Tribe. Routledge.
- Timmer, P. 1988. "The Agricultural Transformation." In *Handbook of Development Economics*, volume 1, edited by H. Chenery and T. N. Srinivasan. Elsevier.

- Timmer, P. 2009. *A World without Agriculture: The Structural Transformation in Historical Perspective*. Washington, DC: Aei Press.
- Thorbecke, E., and Y. Ouyang. 2016. “Is Sub-Saharan Africa Finally Catching Up?” In *Diverse Development Paths and Structural Transformation in the Escape from Poverty*, edited by M. Andersson and T. Axelsson. Oxford: Oxford University Press.
- Tsakok, I. 2011. *Success in Agricultural Transformation. What It Means and What Makes It Happen*. New York: Cambridge University Press.
- Tsakok, I., and B. Gardner. 2007. “Agriculture in Economic Development: Primary Engine of Growth or Chicken and Egg?” *American Journal of Agricultural Economics* 89: 1145–1151.
- UN Comtrade. 2020. UN Comtrade Database. <https://comtrade.un.org/>.
- UNIDO. 2020. The UNIDO Industrial Statistics Database, INDSTAT2. <https://www.unido.org/researchers/statistical-databases>.
- United Nations. 2000. *Classifications of Expenditure according to Purpose*. Statistical Papers Series M No. 84. UN Department of Economic and Social Affairs, Statistics Division, New York.
- UNU-WIDER. 2020. World Income Inequality Database, WIID4. <https://www.wider.unu.edu/project/wiid-%E2%80%93-world-income-inequality-database>.
- Valdés, A., and W. Foster. 2010. “Reflections on the Role of Agriculture in Pro-poor Growth.” *World Development* 38(10): 1362–1374.
- Vogel, S. 1994. “Structural Changes in Agriculture: Production Linkages and Agricultural Demand-Led Industrialization.” *Oxford Economic Papers* 46(1): 136–156.
- Wiggins, S. 2000. “Interpreting Changes from the 1970s to the 1990s in African Agriculture through Village Studies.” *World Development* 28(4): 631–662.
- Wiggins, S. 2014. “African Agricultural Development: Lessons and Challenges.” *Journal of Agricultural Economics* 65(3): 529–556.
- Wiggins, S. 2018. “Agricultural Growth Trends in Africa.” APRA Working Paper 13, Future Agricultures Consortium.
- Wiggins S., R. Sabates-Wheeler, and J. Yaro. 2018. “Rural Transitions, Economies and Rural–Urban Links.” APRA Working Paper 11, Future Agricultures Consortium.
- World Bank. 2007. “World Development Report 2008: Agriculture for Development.” The World Bank, Washington DC.
- World Bank. 2008. “Ethiopia Agriculture and Rural Development Public Expenditure Review 1997/98 – 2005/06.” Report No. 41902-ET. World Bank, Washington DC.
- World Bank. 2016. “Ethiopia Public Expenditure Review.” Report No: ACS14541. World Bank, Washington DC.
- World Bank. 2020. World Bank Open Data: World Development Indicators. <https://data.worldbank.org/>.
- Yu, B., S. Fan, and E. Magalhaes. 2015. “Trends and Composition of Public Expenditures: A Global and Regional Perspective.” *European Journal of Development Research* 27: 353–370.
- Zenawi, M. 2012. “State and Markets: Neoliberal Limitations and the Case for a Developmental State.” In *Good Growth and Governance in Africa: Rethinking Development Strategies*, edited by A. Noman, K. Botchwey, H. Stein and J. Stiglitz. Oxford: Oxford University Press.

