

Cambridge University Press

978-1-107-02591-2 - Quality Standards, Value Chains, and International Development:
Economic and Political Theory

Johan Swinnen, Koen Deconinck, Thijs Vandemoortele and Anneleen Vandeplas

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Introduction

The past decades have witnessed an unprecedented restructuring of global markets, which included a rapid increase in trade, foreign investment, and the globalization of value chains. Changing consumer preferences in rich countries, rapid income growth and urbanization in emerging countries, together with technological developments and globalization have transformed the industrial organization and international location of production. One of the most important mechanisms underlying the globalization process lies in the transfer of advanced production capabilities to low-wage economies. These capabilities comprise an increase both in productivity and in product quality (Goldberg and Pavcnik, 2007; Grossman and Helpman, 2005). Leading economists have argued that the quality aspect is by far the more important element: poor productivity can be offset by low wage rates, but until firms attain some threshold level of quality, they cannot achieve sales in global markets and participate in modern value chains, however low the local wage level (Sutton, 2001).

1.1 The Rise of Standards

Not surprisingly, these changes have coincided with a global proliferation of “quality standards.” These standards specify requirements on (characteristics of) the production process, the final product, the packaging of the product, and so on. They are increasing in number, in their global reach, and in what they cover, such as safety aspects (e.g., no small toy parts, nuclear equipment safety measures), environmental effects (e.g., organic products, low carbon dioxide emission), health concerns (e.g., low lead or pesticide residues), nutrition requirements (e.g., low fat), and social concerns (e.g., no child labor, fair trade). Standards are

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set by governments (“public standards”) and by commercial organizations (“private standards”).¹

An illustration of this trend are the notifications submitted to the World Trade Organization (WTO) whenever member states introduce public standards and regulations that may restrict trade. Notifications to the WTO of sanitary and phyto-sanitary (SPS) and technical barrier to trade (TBT) measures have increased exponentially over the past fifteen years (see also Figure 5.1 in Chapter 5). In 2014, more than 17,000 notifications were submitted to the WTO (WTO, 2014a, b). In the past, most of these notifications originated with the United States and the European Union, but in recent years developing countries have caught up and now issue 60 percent of the SPS notifications. Systematic data on private standards are hard to find but indirect data can be used to gauge the parallel explosion of private standards, for example, by using data on standards such as Global Partnership for Good Agricultural Practice (GlobalG.A.P.), a standard used by the world’s leading retailers for their suppliers of food and agricultural produce.² GlobalG.A.P. is now used in more than 100 countries and the number of GlobalG.A.P.-certified producers increased approximately ten-fold over the past decade (GlobalG.A.P., 2014). In summary, empirical indicators show that in rich and poor countries alike both public and private standards are growing rapidly.

These standards have an increasingly far-reaching impact on economic development and international trade, operating through two main channels. First, increasing safety and quality requirements have effects beyond the imposing countries’ borders, as these standards also affect imports and consequently have an impact on producers and traders in exporting nations. Second, global value chains are playing an increasingly important role in world markets, and the growth of these (often vertically coordinated) marketing channels is associated with increasing quality standards. Modern retailing companies increasingly gain market share in international and local markets and set standards for quality and safety wherever they are doing business, including in many poor countries with significant implications for local producers. The rising investment in processing and retailing in developing and emerging countries has in turn stimulated the

¹ In this book, we refer to the set of these characteristics with the general concept of “quality standards” or “standards.” When we distinguish between various aspects, such as environmental standards versus safety standards, we make this explicit (as, e.g., in Chapter 6).

² The GlobalG.A.P. standard implies criteria for food safety; sustainable production methods; worker and animal welfare; and responsible use of water, compound feed, and plant propagation materials (www.globalgap.org).

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demand for higher quality commodities from local suppliers (Figuié and Moustier, 2009; Minten and Reardon, 2008; Reardon et al., 2003).

1.2 The Debate

The rise of standards and value chains has triggered a vigorous debate on the impacts on international trade and development.

There are two broad lines of critiques, addressing both of the aforementioned channels. The first critique is that standards are (non-tariff) trade barriers. As international trade agreements such as the WTO have contributed to a global reduction in tariffs, countries have turned to new instruments to shield their domestic markets from foreign competition (Anderson et al., 2004; Augier et al., 2005; Brenton and Manchin, 2002; Fischer and Serra, 2000; Sturm, 2006). The second line of critique is that, even if developing and emerging countries can comply with the new standards, there are major distributional effects within these countries, mostly to the detriment of the poor. More specifically, it is argued that standards cause the exclusion of small, poorly informed, and weakly capitalized producers from participating in these “high-standard value chains.”³ Moreover, even if small producers could participate, these chains are said to be dominated by large multinational companies that extract the entire surplus through their superior bargaining power within the chains (Reardon and Berdegue, 2002; Unnevehr, 2000; Warning and Key, 2002).

However, there is considerable uncertainty and debate regarding the validity of these critical arguments on the impacts of these standards, and more generally the welfare implications of high-standards trade and global value chains (Swinnen, 2007).

First, regarding trade and the protectionist effects of standards, several authors argue that the simple “standards as protectionism” argument ignores the social benefits of standards in terms of consumer welfare, for example, by reducing asymmetric information, or by reducing externalities in society. Including these other effects of standards makes the impact of standards on trade and welfare much less obvious (Beghin et al., 2012;

³ Several empirical studies indicate that small producers are excluded because of increasing standards (Gibbon, 2003; Key and Runsten, 1999; Kherralah, 2000; Maertens and Swinnen, 2009; Reardon et al., 2003; Schuster and Maertens, 2013; Subervie and Vagneron, 2013; Weatherspoon and Reardon, 2003). For example, evidence from Kenya, Zimbabwe, and Côte d'Ivoire suggests that horticulture exports are increasingly grown on large industrial estate farms, thereby excluding smallholder suppliers in the export supply chain (Dolan and Humphrey, 2000; Minot and Ngigi, 2004).

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Beghin and Li, 2013; Sheldon, 2012; Swinnen and Vandemoortele, 2012).⁴ Moreover, although quality and safety standards indeed make production more costly, at the same time they reduce transaction costs in trade, and can be “catalysts” for trade (Henson and Jaffee, 2007; Maertens and Swinnen, 2007). Standards can communicate the presence of desirable attributes or the absence of undesirable attributes that are otherwise difficult, costly, or even impossible to verify by consumers (Roe and Sheldon, 2007).⁵

In fact, despite the rapidly growing and tightening standards, global trade has increased sharply over the past three decades. Moreover, even for developing countries, the growth has been strong in sectors where standards have become (much) more restrictive and spread rapidly. This is, for example, the case in high-value (and high standards) food exports – which includes fruits, vegetables, seafood, fish, meat, and dairy products. In Asia and in Latin America, exports of such high-value food products increased from around 20 percent of agricultural exports in the 1980s to around 40 percent in recent years, with overall exports increasing significantly. The process is similar, albeit somewhat slower, in Africa (Swinnen and Maertens, 2014).

Second, regarding the impact of standards on inequality and poverty inside developing and emerging countries, although quality and safety standards indeed make production more costly, at the same time they increase the value of the products, potentially yielding higher profits (Maertens et al., 2012; Reardon and Farina, 2002; Swinnen and Vandeplas, 2011). Empirical studies also show that the introduction of standards induces important changes in the industrial organization of value chains, such as the growth of vertical coordination with potentially important implications for access to technology, capital, and crucial inputs for local suppliers (Dries et al., 2009; Gow and Swinnen, 1998).⁶ The empirical literature thus suggests that smallholder participation in high standards global value chains is more

⁴ Several authors have determined protectionism of standard-like measures conceptually; see, e.g., Baldwin (1970) and Fisher and Serra (2000), with some limitations highlighted in Marette and Beghin (2010). However, empirically determining whether a standard is a protectionist measure is a difficult empirical problem, as explained in detail in Beghin et al. (2015).

⁵ In addition, minimum quality standards may increase welfare in a vertically differentiated market by reducing firms’ pricing power. Standards may also solve problems related to network externalities. We briefly review this literature in Chapter 2.

⁶ Minten et al. (2009) find that inclusion in a contract-farming scheme for high-standard vegetable export production in Madagascar improves farmers’ access to new technologies and food security. Dries and Swinnen (2004, 2010) find that participation of small-scale farmers in contract-farming schemes in dairy value chains in Poland increases access to credit, technology, and farm investment. Similar results have been documented by Gow et al. (2000), Negash and Swinnen (2013), Noev et al. (2009), and World Bank (2005)2013.

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widespread than what was initially predicted, or feared (Reardon et al., 2009; Swinnen, 2007).⁷

Finally, regarding the rent distribution within these value chains, recent empirical studies show quite different effects than predicted. Early empirical studies focused mostly on the exclusion issue (i.e., whether poor producers were marginalized by the introduction of standards). Only more recent studies actually measure welfare, income, or poverty. The studies that do measure welfare effects find positive effects for poor households in developing countries who may participate either as smallholder producers or through wage employment on larger farming companies (Andersson et al., 2015; Colen et al., 2012; Maertens and Swinnen, 2009; Maertens et al., 2011; Minten et al., 2009; Rao and Qaim, 2011; Rao et al., 2012;).⁸ What is remarkable is that these strong benefits occur in several of these cases despite the fact that trade is organized by monopsonistic exporting companies.

1.3 Objective and Outline of the Book

As is clear from this review, the debate has been intense and the literature has contributed a rich set of studies with heterogeneous findings. The rapidly growing set of papers and books on these issues is mostly empirical in nature. To interpret the variation in findings and draw correct implications, a theory or conceptual framework is necessary. However, an integrated theoretical framework to analyze the economic and political interactions of standards, value chains, and international development, and to interpret the variation in empirical findings, has not yet been developed. Our book is an attempt to fill this gap. The book presents an integrated set of theoretical models and conceptual frameworks on economic and political aspects of standards, value chains, and international development.

⁷ For example, Minten et al. (2009) show that in Madagascar most fresh fruit and vegetable production for exports is on very small farms, often on a contract basis with the agrifood industry, and with important positive effects on farmers' productivity. Similar results are found by studies in Asia (Gulati et al., 2007), in Eastern Europe (Dries and Swinnen, 2004; Dries et al., 2009), and in China (Wang et al., 2009).

⁸ Maertens and Swinnen (2009) find that farmers' income doubles as a result of being included in the horticultural export chain in Senegal, and Dedehouanou et al. (2013) point out that participation in such contract farming schemes increases farmers' subjective well-being or happiness. Andersson et al. (2015), Rao and Qaim (2011), and Rao et al. (2012) find that the participation of smallholder vegetable farmers in high-standard super-market channels in Kenya increases farm productivity and income by almost 50 percent. Minten et al. (2009) find that inclusion in a contract-farming scheme for high-standard vegetable export production in Madagascar improves poor households' food security.

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The theoretical models and analyses are kept general to the extent possible, to make them broadly relevant. The implications of standards and value chains for trade and development have been actively debated for various economic sectors. Examples include textiles (Barrientos et al., 2011; Czubala et al., 2009; Evgeniev and Gereffi, 2008; Frederick and Gereffi, 2011), handicraft (LeClair, 2002), forestry (Stringer, 2006; Marx et al., 2012a), the automotive industry (Sturgeon et al., 2008, 2009), chemicals (Ackerman et al., 2007), nanotechnology (Dillemuth et al., 2011), and the agrifood sector (Reardon et al., 2003). Cross-sector reviews of the implications of standards and value chains can be found in, for example, Gereffi et al. (2005), Cattaneo et al. (2010), Heckeley and Swinnen (2012), Hoekman (2013, 2014), Marx et al. (2012b), and Vogel and Swinnen (2011).

Many of the empirical examples that we use in this book to illustrate and motivate the assumptions in the models and theoretical findings are from agriculture and the food industry, as these sectors have been most extensively analyzed empirically and the debate has been especially fierce in these sectors (Dolan and Humphrey, 2000; Reardon et al., 1999). One reason is that rich country food safety and quality standards, both from private and public sources, have tightened dramatically over the past decade, strongly affecting international trade and global value chains in these commodities (Jaffee and Henson, 2005). A second reason concerns the development implications of this evolution. As many of the world's poor are employed in agriculture, exports of agricultural commodities are seen as a very important potential source of pro-poor growth (World Bank, 2007). Third, many people are confronted with the effects as consumers of food (Beghin et al., 2015; Reardon and Timmer, 2012). But, as mentioned, we have tried to keep the models as general as possible and explained in detail where assumptions relate to specific sectors or conditions.

As we explained in Section 1.2, the debate has focused on two different critiques or areas of disagreement, and the structure of our book reflects these debates. After the introductory part (Chapters 1–3), the second part of the book (Chapters 4–9) focuses on how countries set standards. Given the importance of public standards (in particular in trade conflicts), we use a political economy approach to model the decision-making process around public standards. In an extension of the basic model, we also analyze interactions between private and public standards. The third part of the book (Chapters 10–17) then focuses on the effects of standards through value chains. We provide a theoretical framework to analyze the economic impacts of standards on efficiency and on equity, explicitly taking into account how value chains are reorganized in response to standards.

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Before starting our political and economic analysis of standards, Chapter 2 discusses our approach to modeling standards. Chapter 3 develops a basic analytical framework to illustrate the impact of standards on equity and efficiency in the presence of asymmetric information. Such standards may generate efficiency gains by solving asymmetric information issues but may also involve implementation costs. The framework allows for standards to impact producers differently, creating differences in implementation costs. This basic model will show that standards involve rent redistribution from consumers to producers and that these rents may differ according to the producer's costs of implementing the standard.

The second part of the book (Chapters 4–9) analyzes the political economy of standards. Chapter 4 presents a political economy model of public standards. We use this model to derive the politically optimal public standard and to analyze different factors affecting that political equilibrium, including the level of economic development.

Chapter 5 extends the theoretical analysis of Chapter 4 to an open economy framework and explicitly integrates the impact of standards on international trade, how it may induce lobbying to use standards as non-tariff barriers – and what the political equilibrium is. The theoretical analysis compares the political outcome with the social optimum to identify under which cases “understandardization” or “overstandardization” results, and when standards are protectionist measures. The chapter includes a discussion of the rules of the WTO in relation to standards (e.g., agreements on SPS measures and on TBTs that make explicit reference to the issue of international standards).

Chapter 6 extends the political economy model of Chapter 5 to analyze the choice of different standards by integrating risk and externalities. This allows analyzing whether the nature of public standards (safety standards, quality standards, social and environmental standards) affects the politically optimal standard and the likelihood of trade conflicts. This extension shows that in general, public safety standards are set at higher levels because stronger consumption effects translate into larger political incentives for governments. The relationship between standards and protectionism is also affected by the nature of the standards.

Chapter 7 analyzes the interaction between public and private standards. Private company standards are increasingly important in addressing consumer concerns about safety, quality, social, and environmental issues. Often these private standards are more stringent than their public counterparts. The chapter presents a model that combines market power and political economy to explain this observation. A key outcome of the model

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is that if producers are able to exercise their political power to induce the government to set lower public standards, retailers may apply their market power to set their private standards at a higher level than the public ones.

Chapter 8 extends the static political economy models of the previous chapters into a dynamic model to analyze intertemporal implications. In this framework, minor differences in consumer or producer preferences can lead to important differences in standards and regulations over time, and temporary shocks to these preferences can have long-lasting effects on regulation. This analysis contributes to explaining cross-country differences in technology and environmental regulations. Chapter 9 studies the political economy of standards that include or exclude producers in value chains, such as occupational licenses or geographical indications. Such standards are often justified by referring to the need to protect quality, but the exclusion or inclusion of producers obviously has distributional effects. Our analysis incorporates possible negative effects on quality of an expansion, as well as cost sharing effects, and shows how the political outcome may either be too large or too small from a social welfare point of view.

The third part of the book (Chapters 10–17) focuses on the interaction among standards, value chains, and economic development. Chapter 10 develops a formal theory of the endogenous process of the introduction of quality and safety standards. Initial differences in income and capital and transaction costs are shown to affect the emergence and the size of the high standards economy. This theory shows that there is an important interaction between standards and production structures. Initial differences in the production structure are shown to influence the emergence of high-standards economic sectors and also which producers are included in the high-standards economy, and which are not. The nature of transaction costs – as well as the possibility of vertical coordination between producers and processors – also matter.

Chapter 11 focuses specifically on how small producers can be integrated in high-standards value chains through vertical coordination (a key characteristic globally observed) in a context of factor market imperfections and weak contract enforcement. The chapter analyzes how these characteristics affect surplus creation and rent distribution and how the process of development affects both. It also shows that, under some conditions, poor producers may, paradoxically, benefit more from vertical coordination at low levels of development.

Market power and competition policy in value chains have emerged as an important policy issue. With rapid consolidation in the global retail, agribusiness, and food industry (both in high-income countries and in

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emerging economies), the impact of concentration in global value chains on efficiency and rent distribution is an important issue. Chapter 12 extends the model of Chapter 11 to explore the impact of competition on global value chains, taking into account market imperfections and contract enforcement problems. One key finding is that although increased competition may benefit suppliers by improving contract conditions, at the same time contract enforcement may become more complicated.

In the wake of sharply rising food prices in 2007–2008, observers feared that although consumers faced higher prices, this would not lead to higher producer prices because of market power exercised along the value chain. In the empirical literature, imperfect price transmission is often interpreted as the exercise of market power by retailers or processors, and considered as disadvantageous to suppliers. Chapter 13 uses the model of Chapter 11 to show that if vertical coordination requires buyers to invest in suppliers, price transmission along the value chain is likely to be nonlinear, and weaker price transmission does not necessarily imply lower welfare for producers.

Chapter 14 analyzes the impact of commodity characteristics on the success of value chains to enhance efficiency and reduce poverty. Globally one observes the poor performance of low-standards staple crop value chains. At the same time, dynamic high-standards commodity sectors have emerged in which technology and capital are transferred to suppliers through contracts and interlinked market transactions with private companies. These high-standards sectors have contributed importantly to income mobility and poverty reduction in certain areas but have generally not reached a large part of the rural population, which mostly remains dependent on staple food production. The theoretical model of Chapter 11 is used to analyze how commodity characteristics and the type of standards are likely to affect the success of value chains.

Chapter 15 uses an extended version of the models developed in Chapters 11 and 12 to formally analyze how economic reforms (liberalization) affect production and income distribution when the emergence of standards and value chains is endogenously determined. Thirty years ago, a vast share of the poor and middle-income countries were heavily state controlled. Since then many have liberalized their economies. However, the growth effects of the liberalizations in the 1980s and 1990s differed strongly between regions in Africa, Asia, and Europe. Chapter 15 shows theoretically how endogenous institutional adjustments can affect the growth response to economic reforms. These insights are used to forward a series of explanations on the differences in performance across countries and commodities following liberalization.

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Chapter 16 zooms in on the different types of investments or contracting costs buyers may need to cover in the context of vertically coordinated value chains. It shows that the efficiency and equity effects of these investments may differ strongly depending on the nature of the contracting cost, with important differences between, for example, search costs, training costs, monitoring costs, and input costs.

Finally, standards may have an impact on incomes and poverty through their effect on households producing for high-standards value chains or on households being employed in larger companies producing for the high-standards value chains. Chapter 17 explains how these labor market effects can be very important and discusses general equilibrium effects of the introduction of quality and safety standards, as well as how the effects can differ strongly depending on whether the growth of high-standards production systems is driven by exports or by domestic demand.