Standards and Competition

Sara Nyman and Tania Begazo*

Abstract

Standards play a critical role in addressing market failures and enhancing competition by reducing information asymmetries, lowering transaction costs, enabling interoperability, and facilitating market entry. However, their impact on competition can be both procompetitive and anticompetitive, with the net effect being specific to each case depending on their design, the standard-setting process, and implementation. The key is to ensure the right balance between the procompetitive and anticompetitive effects, and to eliminate unnecessary or unintentional anticompetitive restrictions or effects. This study explains how different types of standards influence competition in varying ways, posing different levels of risk. It also provides measures to mitigate these risks. Policy makers can promote procompetitive standards through regulatory impact assessments, inclusive and transparent standard-setting, effective market surveillance, and alignment with competition law, including clear guidance on standard-essential patents and anticollusion safeguards in standards development organizations.

* Sara Nyman is a competition expert and consultant for the World Bank's Competitiveness Unit. e-mail: snyman@worldbank.org. Tania Begazo is a Senior Strategy Officer for Digital Transformation in the World Bank's Middle East, North Africa, Afghanistan and Pakistan (MENAAP), Eastern and Southern Africa (AFE), and Western and Central Africa (AFW) regions and at the time of writing, she was a Senior Economist at the World Bank's Competitiveness Unit. e-mail: tbegazo@worldbank.org. This paper serves as a background paper to the *World Development Report 2025: Standards for Development*. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent. The authors thank Yana Ukhaneva for excellent research assistance.

Introduction

Standards help solve market failures and promote competition by reducing information asymmetries and transaction costs, providing clear guidelines that facilitate market entry, and enabling interoperability that creates level playing fields. Nevertheless, the relationship between standards and market outcomes is complex and context-dependent. Standards can have both procompetitive and anticompetitive effects, with the net effect on competition being specific to each case. Poorly designed standards pose four main risks to competition: increased barriers to entry, facilitation of harmful coordination among competitors, reduced ability to compete through innovation, and potential abuse through proprietary standards. The impact of standards on competition depends on three factors: their specific requirements, the standard-setting process, and how they are implemented. Almost all standards will have some effect on market competition—the key is to ensure the right balance between the procompetitive and anticompetitive effects.

Different types of standard requirements have varying effects on competition, with those affecting product characteristics and production often causing more anticompetitive impacts than information-based requirements like labeling or certification. Performance-focused standards are generally better suited to promote innovation than prescriptive standards relating to product characteristics or production processes, while interoperability requirements can enhance network effects and facilitate entry but risk technological lock-in.

Both public and private standards can benefit or harm competition, with their impact largely dependent on how they are developed. Harm to competition is more likely when incumbents control the standard-setting process and when the needs of smaller firms or potential entrants are not sufficiently taken into account. Implementation problems like inconsistent enforcement or limited testing capacity can also create an uneven playing field, particularly in developing countries where gaps remain in conformity and accreditation systems. Functioning markets for conformity assessment and accreditation services are crucial for maintaining a level playing field between firms and for reducing the cost of compliance.

Policy makers can pursue several avenues to minimize the negative effects of standards on competition. First, they can promote procompetitive standards and implementation, including by implementing regulatory impact assessments that systematically evaluate the impacts of standards on competition, considering less restrictive alternatives, adopting international standards as a basis for domestic technical standards, considering regulation of de facto standards in digital markets, ensuring well-functioning markets for conformity assessment services, and improving market surveillance.

Second, they can minimize capture of the standards-setting process through inclusive representation in standards development organizations, transparent governance procedures, regular reviews of standards, and clear guidance on standard-essential patent pricing and licensing terms.

Finally, they can ensure compatibility between standard setting and enforcement of competition law. For example, competition authorities can publish guidelines clarifying rules for standardization agreements supporting strategic initiatives, provide frameworks for competition law enforcement related to standard-essential patents, and guide standards development organizations to ensure their processes do not facilitate anticompetitive practices, such as through information sharing or exclusion of certain firms.

The role of standards in markets

Standards play a crucial role in addressing market failures and promoting competition. They do this by:

- *Reducing information asymmetry and transaction costs for buyers and sellers.* Standards provide a common set of specifications (including a common language or protocols) that reduce complexity and uncertainty between buyers and sellers or providers and users. This helps reduce the costs associated with searching for products with the desired level of quality, safety, or compatibility.
- *Facilitating entry and innovation.* Standards provide clear guidelines on product characteristics allowing new businesses to comply with established norms to enter new markets and gain customer acceptance more easily. Standards also provide a common framework/foundation for emerging technologies—such as artificial intelligence (AI), the Internet of Things (IoT), and 5G cellular network technology—which encourages widespread adoption, allows multiple firms to build on shared frameworks, and allows innovation related to these technologies to focus on quality and functionality rather than compatibility.
- *Enabling interoperability and network effects that level the playing field.* Standards allow different systems to work together seamlessly. This interoperability then increases the value of services across all users and levels the playing field by reducing the competitive advantage of large players. This is particularly important in network industries, in which value increases with the size and integration of a network, and particularly in digital markets. Box 1 discusses the importance of interoperability standards in digital markets.

Box 1. Why are standards particularly important for digital markets?

Network industries—including digital markets—rely on interoperability, and interoperability relies on standards. Standards are crucial in network industries such as telecommunications, electricity grids, and transportation systems because they provide the foundation for different systems, equipment, infrastructure, and applications to work seamlessly together. Without agreed-upon standards, firms would face increased costs of interconnection, fragmenting markets, reducing competition in complementary segments, and limiting innovation. While interoperability standards are important in network industries broadly, they are arguably even more critical in digital markets due to the rapid pace of technological change, global scale, and the complexity of digital ecosystems, which includes a broad scope for development of complementary products and services. While a railway system may require standardized track gauges that remain relatively stable for decades, digital markets must continuously evolve their standards to accommodate new technologies and use cases. Moreover, the near-zero marginal cost of distribution in digital markets means that network effects can lead to winner-takes-most dynamics that make the governance of standards particularly consequential for competition, innovation, and consumer welfare.

There are several examples of standards that facilitate merit-based competition**.** Compatibility standards that can create network effects and ensure competition among brands on a level playing field include mobile money standards to promote interoperability (as has been seen in East Africa) (Rattel, Bahia, and Wambugu 2024), USB and Bluetooth standards, and GSM/3G/4G/5G mobile standards. Standards that lower barriers to entry and allow technology diffusion include the African Union's SPS Policy Framework, Open Charge Point Protocol for the charging of electric vehicles (EVs), and standards for use of TV White Space in developing countries (NCC 2019). Open standards that support innovation include Open RAN standards for 5G deployment in developing countries (for example, in Latin America and the Caribbean, Nigeria, South Africa) (5G Americas 2024) and mini-grid standards in Africa.[1]

The literature suggests that well-designed standards are broadly procompetitive and welfare enhancing. Several studies find that standards can significantly reshape market structure. Standards act as a selection mechanism that alters competitive dynamics, raising the threshold for market participation and favoring more productive firms. Das and Donnenfeld (1989) demonstrate that minimum quality standards can lead to "negative protection" where the profits of domestic firms decrease while the profits of foreign firms increase. Similarly, Gaigné and Larue (2016) find that public quality standards reduce the absolute number of firms in domestic markets but increase the relative market share of foreign firms. The selective pressure induced by the standard gives an advantage to highly productive foreign firms, while causing less productive domestic and foreign firms to exit the market, thus increasing national welfare through a better allocation of resources. Likewise, using French export data, Disdier et al. (2023) find that standards in international markets favor (in terms of export sales) high-productivity, high-quality firms at the expense of low-productivity and low-quality firms and increase the quality supplied by firms only if their productivity is high enough. Yu and Bouamra-Mechemache (2016) demonstrate that more stringent standards for the production of private farmers can shift rents between participants in the food supply chain, particularly benefiting upstream farmers at the expense of processors when standards predominantly affect variable costs rather than fixed costs, when demand is inelastic, and when downstream processors hold greater market power.

Nevertheless, the relationship between standards and market outcomes is complex and can be anticompetitive in certain contexts. For example, the impact of standards on market outcomes, such as innovation, varies with the level of market uncertainty. Blind, Petersen, and Riillo (2017) show that formal technical standards enhance innovation efficiency only when market uncertainty is high but reduce innovation efficiency in environments where uncertainty is low. This finding is supported by Wen, Forman, and Jarvenpaa (2022), who argue that standards are particularly important for reducing technological and legal uncertainty. Furthermore, another strand of the literature highlights how standards can act as covert instruments of protection—for example, where domestic firms are incentivized to set standards at a level that excludes foreign firms (Fisher and Serra 2000; Marette 2018).

The empirical literature also widely confirms that standards disproportionately disadvantage smaller firms by raising fixed and variable costs and creating economies of scale for larger producers.[2] Macedoni and Weinberger (2022), using data from Chile's manufacturing sector, find that more restrictive standards are associated with a reallocation of sales from small to large firms. In this case, this is welfare-enhancing as low-quality firms leave the market and the output of larger high-quality firms increases. The costs of compliance are a key reason that standards tend to provide advantages to larger firms. These compliance costs are not insignificant. Using data from 16 developing countries, Maskus, Otsuki, and Wilson (2013) find that fixed costs of compliance average about 5 percent of annual variable costs for an average firm (and more for smaller firms); a 1 percent increase in initial investment to comply with foreign standards raises variable production costs (both labor and capital) by between 0.06 percent and 0.13 percent.

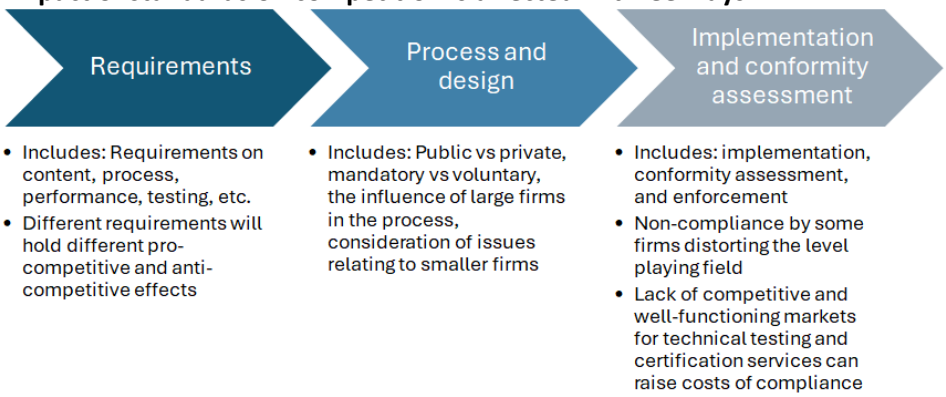
When can standards harm competition?

The nature of standards—setting common characteristics for products or processes—means they can also harm firms' ability to compete. Although standards can promote competition, the fact that they set requirements for firms' products and procedures and are, by nature, a result of coordinated action by market players (which are often competitors) means that they can also create anticompetitive effects, including being used to protect markets. When the process of developing standards involves frequent meetings and close working relationships between firms that can or do compete there is also scope for

the standards development process to facilitate anticompetitive coordination.[3] In addition, as with any market intervention, when standards are mandatory, the way they are implemented and applied to different firms can affect market dynamics.

The impact of a standard on competition is affected in three ways (refer to figure 1): through the specific requirements included in the standard (requirements); through the standard-setting process and the way the standards is set (process and design); and through the implementation of the standard (implementation and conformity assessment). Each of these elements is explored in the discussion that follows.

Figure 1. The impact of standards on competition is affected in three ways



Source: Original elaboration.

It is useful to distinguish between standards that are designed to restrict competition and those that restrict competition as an unintended consequence (or where the standards setting or development process unintentionally facilitates coordination or exclusion). Standards with unintended consequences are typically put in place due to misguided technical specifications or because the correct balance has not been struck between safety, compatibility, quality, and competition. Almost all standards will have some effect on market competition—the key is to ensure the right balance between the procompetitive and anticompetitive effects, and to eliminate unnecessary or unintentional anticompetitive restrictions or effects.

Standards that have been set in an anticompetitive way pose four key risks for competition. [4]

1. *Increase barriers to entry and disadvantage some firms over others.* Some standards directly restrict entry by some players. For example, requirements for sugar in Zambia to be fortified with Vitamin A acted as a barrier to entry (see the case study on food standards) and excessively high cement standards in Nigeria foreclosed competitors to Nigeria's largest cement producer, Dangote, from the market (see the case study on cement). Meanwhile other standards create disproportionate compliance burdens that favor larger firms or incumbents. For example, industry certification requirements like ISO 9001 (on quality management systems) are often considered to be burdensome and expensive for small firms to comply with, and standards development organizations dominated by large players are often considered to be prone to setting requirements favoring the capabilities of these large firms. There has, for example, been some discussion in the United States over bias in the setting and certification of green building standards by LEED (Leadership in Energy and Environmental Design), which some claim has been exclusionary.[5]

2. *Facilitate coordination that harms competition.* Some standards enable information sharing or coordination that can lead to tacit collusion or lower price competition. These could include industry-wide sustainability initiatives that require firms to share detailed commercial data (see case study on sustainability standards), airline alliances with extensive information sharing on routes and pricing, and trade associations that publish detailed pricing benchmarks.

3. *Reduce firms' ability to compete through innovation or product variety.* Some standards limit opportunities for firms to differentiate their products and services from those of competitors by excessively standardizing products, favoring the products of some firms over others, or restricting novel approaches. For example, overly prescriptive building codes or content requirements for construction inputs can prohibit development of innovative green materials (see case study on cement). Mobile app store requirements that restrict alternative business models by forcing developers to use platform-specific payment processing prevent developers from offering consumers alternative payment options (see case study on Apple's de facto standard on mobile app stores). In some cases, automotive standards dictate specific technologies rather than performance outcomes, preventing innovation of new technologies to achieve desired outcomes (for example, monitoring tire pressure is often mandated for certain technologies).

4. *Facilitate abuse or anticompetitive behavior through proprietary standards.* Some standards allow firms with dominant proprietary standards to exclude rivals or extract excessive rents. For example, the creation of standard essential patents (SEPs) could lead to potential abuse of dominance, including through patent hold up where a SEP holder demands excessively high royalties for firms to use a patent that is essential to implement a standard (see the case study on SEPs).[6] Private standards and private labels developed by food retailers for suppliers can facilitate abuse of buyer power (see the case study on food standards). Meanwhile, in Peru, an incumbent in the brewing market acted to prevent AmBev, a potential competitor, from accessing the Bottle Interchangeability System as a strategy to prevent its entry into the market (Casarin, Cornejo, and Delfino 2020).

Requirements of the standard

The specific effects of standards differ according to the focus of the requirements included in the standard. Any standard can have both procompetitive and anticompetitive effects depending on the types of requirements it contains (such as requirements on product characteristics, processes, information sharing, and the like) and other design aspects of the standard (discussed later). Table 1 summarizes the potential procompetitive and anticompetitive effects of different requirements that can be included in standards. In practice, whether the net effects are procompetitive or anticompetitive on balance will depend on the specific issue that the standard is trying to solve, the way the standard is set,[7] and the impact it can have on the relationship between market players.

Table 1. Potential anticompetitive effects of different requirements set as part of a standard

Common requirements set as part of a standard	Examples of potential procompetitive effects	Examples of potential anticompetitive effects
Design requirements, such as LEED design requirements for sustainable buildings; limits on leakage of current in electronics in health care	• Reduce information asymmetry and ease product comparison. • Create consumer confidence, potentially expanding overall demand. • Can increase innovation in some settings, especially process innovation to meet standards more efficiently. • Reduce compliance uncertainty for smaller firms and new entrants, allowing them to demonstrate compliance on equal footing. • Prevent firms from undercutting one another through harmful practices.	• Limit firms' ability to compete through product variety and product innovation. • Can facilitate collusion by increasing product homogeneity • Increased compliance costs can disproportionately constrain smaller firms.
Content requirements, including materials requirements such as Codex maximum residue limits; LEED restrictions on hazardous materials in building materials	• As above.	• As above.
Performance requirements, such as minimum compressive strength requirements for cement; power efficiency for electronics; emission limits for vehicles	• As above, plus • Allow for outcome-based innovation by specifying goals rather than methods or components.	• Performance compliance often requires particularly expensive testing infrastructure; thus the increase in compliance costs can be even more burdensome than for content and design requirements, and will also disproportionately affect smaller firms. • Historic data can give incumbents an edge in predicting and demonstrating performance compliance.
Technical requirements (excluding interface/ interoperability requirements), such as requiring that specific technologies are used to monitor vehicle tire pressure	• Common technical standards reduce costs of market participation. • In some settings, can increase innovation, especially process innovation to meet standards more efficiently. • Reduce compliance uncertainty for smaller firms and new entrants, allowing them to demonstrate compliance on equal footing.	• Limits firms' ability to compete through product variety and product innovation. May lead to technology lock-in if requirements are not regularly updated. • Increased compliance costs can disproportionately constrain smaller firms, especially where specialized expertise and equipment are required. • Can facilitate collusion by increasing product homogeneity. • Often favor technologies used by incumbents or dominant firms.
Interface/interoperability requirements, such as API compatibility; data format	• Allow leveraging of network effects and prevent market tipping. • More likely to be procompetitive when interoperability	• More likely to be anticompetitive when interoperability requirements are horizontally applied (when similar products or services operating at the same level of the value chain

standards; networking protocols; wireless communication standards for IoT devices; EV charging interconnection	requirements are vertically applied (that is, for interoperability between firms providing different services). • Enable competition on individual components rather than entire systems (within-ecosystem competition). • Allow for complementary innovation through development of compatible products. • Reduce switching costs for consumers.	interoperate). • Dominant firms can influence the adoption of their proprietary interface/interoperability technologies to disadvantage rivals or can influence the adoption of interoperability requirements that raise costs for their rivals. • De facto interface standards can lock in users and discourage alternatives. • Standards that include patented technologies can lead to excessive royalties or abusive licensing terms. • May reduce incentives for incumbents to innovate if they are mandated to disclosure proprietary interfaces or technologies. • Can limit the ability of the firm that is required to interoperate with others to monetize proprietary complementary products or services.
Testing/certification requirements, such as ISO/IEC 27001 certification for cloud service to demonstrate effective security controls; GAP certification for agri products to demonstrate food safety practices; testing requirement for max residue limit; quarantine or inspection requirements	• Reduce information asymmetry and ease product comparison. • Allow high-quality producers to differentiate from low-quality competitors. • Lower liability concerns, which can enable entry. • Create a level playing field for product evaluation.	• Increased compliance costs can disproportionately constrain smaller firms. • Bottlenecks with testing facilities can delay product release. • Testing, certification, and inspection processes can become an avenue for corruption or providing advantages to politically connected firms.
Labelling/marking requirements, such as labelling for pharmaceuticals with ingredients lists, country of origin, lot number, contraindications; certification marks to indicate compliance with safety standards	• Reduce information asymmetry and ease product comparison. • Enable development of niche market segments based on specific attributes.	• Typically, relatively low cost because product redesign is not required, but compliance costs can increase if there are multiple labelling requirements across markets. • Restrictions in label formats can limit marketing differentiation strategies. • Incumbents can influence labelling standards to highlight their advantages.
Processing/production requirements, including packing, hygiene, storage, transport, treatment.	• Prevent firms from undercutting one another through harmful production practices. • Create common processes that can facilitate supply chain integration.	• Limits competition through innovation on production methods. • Increased compliance costs can disproportionately constrain smaller firms, especially if specialized equipment and facilities are required, or if requirements differ across markets.

Traceability requirements, such as IPC-1782 requirement for electronic components to be tracked from suppliers to assembly; IATF 16949 requirement to assign unique identifiers to products and components	• Enhance consumer trust, which could potentially expand demand. • Reduce unfair competition from counterfeit or misrepresented goods.	• Tracking systems require significant investment raising compliance costs, particularly for small firms (especially those with limited ICT resources).
Qualification requirements, such as professional services	• Enhance consumer trust which could potentially expand demand. • Create a common baseline to allow for entry on a level playing field.	• Professional bodies may influence requirements to limit competition.
Information-sharing requirements, such as joint ventures to standardize sustainability measurement in the food sector; code sharing by airline alliances; Airbus' Skywise platform; Catena X automotives industry open data space	• Allow for new business models and innovation through data and capacity-sharing. • Enable development of compatible products.	• Facilitate collusion among competitors if commercially sensitive data is shared. • Raise compliance costs if firms must invest in data compatibility and sharing mechanisms.
Pricing requirements, such as pricing formulas/schedules; resale price maintenance (RPM)	• RPM prevents freeloading by resellers, incentivizes resellers to invest in services. • Reduce search costs and informational disadvantages for consumers by providing a benchmark in instances in which consumers may not be aware of an appropriate retail price of a product.	• Facilitate collusion among competitors through price transparency. • RPM prevents competition between sellers of a certain brand. • Price controls can reduce returns on investment and innovation if indicated prices are set too low.

Source: Authors' own elaboration.

Note: This table only includes first-round effects. It does not include second-round effects, for example, where restrictions to entry can facilitate anticompetitive behavior, such as collusion. API = application programming interface; Codex = Codex Alimentarius; EV = electric vehicles; GAP = good agricultural practices; IATF = International Automotive Task Force; IEC = International Electrotechnical Commission; IPC = Association Connecting Electronics Industries; ISO = International Organization for Standardization; LEED = Leadership in Energy and Environmental Design.

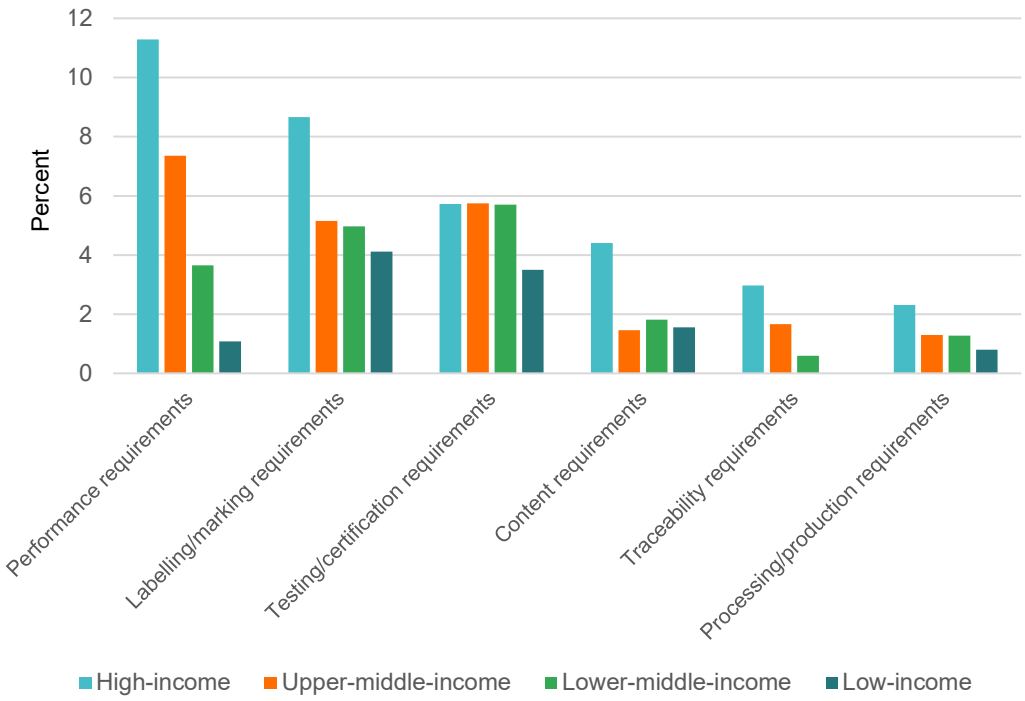
Although the specific net effects on competition will vary case by case, some generalizations can be made on the relative merits of different types of requirements in standards. In general, requirements relating to product characteristics and production costs (such as design, content, and production requirements) are more prone to a range of anticompetitive effects by raising costs, limiting innovation, and facilitating collusion than standards promoting provision of information to customers (such as labelling or certification requirements). Of course, there may be procompetitive effects or other objectives that the former requirements can achieve that would not be fully obtainable with labelling, such as ensuring the health and safety of consumers and providing incentives for innovation but, in some cases, it would be helpful for policy makers to consider whether labelling requirements could achieve their objectives without the same level of restrictions on competition. Requirements for performance outcomes can also be more procompetitive than requirements regarding product characteristics, inputs, or processes because they allow for outcome-based innovation and greater product variety; however, costs of compliance can be higher, which can be prohibitive for some firms. Interoperability and interface standards have a high potential for procompetitive effects by leveraging network effects and allowing for development of compatibility of products, but they can lead to technological lock-in especially if they arise through the market position of influence of dominant firms. Finally, requirements on pricing and information sharing hold particular risks for collusion by allowing for transparency over commercially sensitive parameters.

Analyzing sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) measures that are designed as standards allows an assessment of the relative frequency with which various types of requirements are used in global trading systems. Standards-based SPS and TBT measures generally fall into six of the categories of requirements outlined earlier (content, labelling/marking, performance, processing/production, testing/certification, traceability). Figure 2 provides a measure of the average share of trade products affected by those requirements across countries by country income level. The analysis suggests that for high- and upper-middle-income countries requirements that tend to have a lower propensity for anticompetitive effects (performance, labelling, and certification) are indeed used more frequently than requirements that affect product characteristics and production methods. Lower-middle- and low-income countries do not make as much use of performance standards. This could be linked to the types of products they are importing. Testing and certification requirements appear to be relatively more common in developing countries. Considering this, it is particularly important to ensure that their testing and certification services are well resourced.

The relevance of the types of requirements outlined in table 1 will differ according to the market context. For example, certification, testing, and labelling requirements are particularly important for higher-risk sectors like food and agriculture. These sectors are of course crucial for many developing countries, especially those that export to safety-conscious markets like the European Union (EU), the United States, and Japan. Likewise, in developing countries, basic production requirements can be important in ensuring fundamental safety and hygiene standards to enhance consumer trust and bolster demand. Traceability requirements are often driven by firms in high-income countries, but adoption can be crucial for firms in developing countries seeking to integrate into global supply chains. Performance requirements are particularly relevant in construction input markets, which can affect countries across a range of income levels, and more technology-intensive and rapidly evolving markets, which are more prevalent in emerging markets and higher-income countries. Information- sharing requirements are typically more relevant in countries that are adopting circular economy or sustainability initiatives, or countries with more developed production and transportation networks. Interoperability and interface requirements are important in more technology-intensive network sectors, including telecommunications, payment systems, platform ecosystems, and charging infrastructure. Policy makers will therefore be more likely to

consider interoperability as a requirement in countries with more developed technology-intensive markets or digital services ecosystems, especially where there is a high likelihood that dominant digital ecosystems will emerge.

Figure 2. Average share of traded products affected by different requirements globally



Source: Original elaboration based on the World Integrated Trade Solution database.

Standard design and the standard-setting process

Both private and public standards can harm competition in addition to promoting it. While private standards are generally not mandatory per se, in some cases they can have the effect of imposing binding requirements on market players in practice. This happens when those standards are adopted as a prerequisite for certain regulatory processes (such as governments including standards in their licensing and certification requirements, safety codes, or public procurement requirements or when insurance companies require certain standards to be met by firms).

Box 2 provides an example of how private standards can act as a binding constraint for firms even when not adopted in a legal instrument. Adoption into legal or policy instruments most often happens with private standards that are set by quasi-private bodies such as the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). Table 2 provides a delineation can be made between different types of standards, most pertinently public versus private standards and mandatory versus voluntary standards.

Box 2. Vehicle Recovery Systems in South Africa

In South Africa in the 1990s, insurance companies became interested in encouraging the adoption of Stolen Vehicle Recovery (SVR) devices, which use geolocation technology to track cars. They encouraged the Motor Vehicle Security Association (VESA) to establish standards for provision of SVRs. As a result, VESA developed performance-based criteria for SVR companies. In order to qualify as a member, a firm had to have been operating in the market for at least one year, have installed at least 3,000 units, and have made 100 recoveries. At the same time, the insurance industry generally only gave discounts on insurance premiums to car owners who used VESA-approved SVR systems.

New entrants were unable to meet the criteria for VESA membership and approval, and car owners were incentivized to use only VESA-approved systems through insurance premium discounts. In 2010, the Competition Tribunal found that VESA and three incumbent vehicle tracking companies (making up over 90 percent of the market) were guilty of anticompetitive exclusionary practices.

Sources: De Bruyn and Gibson 2014; Mail&Guardian 2010; South Africa, Competition Tribunal, 2010, *Competition Commission v. Motor Vehicle Security Association (VESA) and Others,* Case No. 29/CR/May09, April 19, 2010 (https://www.saflii.org/za/cases/ZACT/2010/29.html).

Table 2. A typology of standards

	Mandatory	Voluntary
Public standards (developed by national or international public bodies)	• Set by regulators/governmental bodies. • *Examples:* SPS/TBT measures, labor standards.	• Set by regulators/governmental bodies. • *Examples:* Codex Alimentarius (run by FAO and WHO), UK voluntary standard for custom intermediaries, France's Label Rouge food standards.

Private standards (developed by non-state actors such as firms, business associations, NGOs)	• Typically set by quasi-private bodies such as the ISO.
	• Become mandatory through their adoption into legal or policy instruments, such as incorporation into procurement rules, certification processes, licensing criteria, and building codes.
	• *Examples:* Technical standards set by the ISO or by some private national standards bureaus.
		• Either:
		  • Set by private or quasi-private bodies; or
		  • Develop organically through the market position of particular firms (de facto standards).
		• Can be sector-wide or firm-specific (for example, in private retail standards or de facto standards in digital ecosystems).
		• Sometimes set through a market-driven process where there is competition. between different standards, such as with Forest Stewardship Council (FSC) versus Programme for the Endorsement of Forest Certification (PEFC).
		• *Examples:* Apple App Store (de facto standard), GlobalG.A.P., Fairtrade, B Corp, ISO/SDO regulations not incorporated into legal/policy instruments.

Source: Authors' own elaboration based partly on Büthe and Mattli 2011.
Note: Here the word "product" can also refer to a service. FAO = Food and Agriculture Organization; G.A.P.= good agricultural practices; ISO = International Organization for Standardization; NGO = nongovernmental organization; SPS = sanitary and phytosanitary; SDO = standards development organization; TBT = technical barriers to trade; UK = United Kingdom; WHO = World Health Organization.

The impact of these types of standards on competition is highly dependent on how they are set, including how influential market leaders and incumbents are in the process in comparison to smaller firms and potential entrants. Table 3 provides examples of situations where standards are more likely to hold risks for competition. This does not mean that a standard that is set in the ways outlined would necessarily be anticompetitive on balance but that there are risks that policy makers should be aware of and potentially address.

Key factors include whether the standard is mandatory or voluntary, whether the standards development process is heavily influenced by market leaders or incumbents, whether the issues and constraints of small players or new entrants are explicitly considered, and whether there is an incentive to set standards above the minimum levels. Private standards are typically set more stringently than minimum requirements[8] partly as a strategy to segment markets or erect barriers to entry. Public standards—if well set—are more likely to be reflective of minimum requirements. The key factor in understanding this is that the primary goal of private standards development organizations and other private standard-setting associations are commercial in nature. Thus, the standards they set are not always optimized for achieving social welfare objectives and, in some cases, can be misaligned with public policy goals.[9]

There are also trade-offs to be considered in setting standards. Despite concerns around the alignment of private standards to public policy goals and their excludability, they hold advantages over public standards in some areas. For example, they can be developed and updated more quickly, incorporating specific technical requirements and crossing national borders, and they encourage innovation and efficiency by being set more stringently. Other examples of trade-offs include the tailoring of standards to the local context, which can allow greater participation by local firms but may also lead to a lack of harmonization across countries. Moreover, voluntary standards are generally less likely to cause harm to competition, they may also be less effective at solving market failures. Finally, another factor that can affect outcomes for voluntary standards (both public and private) is whether the standard selection takes place through a top-down regulatory or quasi-regulatory process or whether widespread adoption of a standard followed a market-like process where it competes with other standards for other primacy. This is more likely to happen with voluntary private standards (for example, Forest Stewardship Council [FSC] standards "compete" with Programme for the Endorsement of Forest Certification [PEFC] standards in forestry), but could also happen to some extent with voluntary public standards (for example, the Label Rouge standard set by the French government is one of several standards for food quality that could be adopted by firms in France). In some settings, this may mean the standard is more likely to reflect competitive outcomes; in others, the standard that gains primacy may in fact reflect anticompetitive dynamics in markets.

Table 3. When are standards more likely to harm competition and what can policy makers do to alleviate competition issues?

Standards are more likely to harm competition when….	Examples of safeguards policy makers can use when conditions that could cause harm to competition are present	
	Public standards	**Private standards**
They are mandatory rather than voluntary.	• Assess whether nonbinding standards can achieve the same policy goals. If not, ensure that the design of mandatory standards accounts for other procompetition measures (as outlined in this table).	• Ensure that private standards incorporated into legal/policy instruments are not unnecessarily restrictive.
Market leaders and incumbents are heavily involved in developing the standard (including where there is public capture by incumbents).	• Safeguard against capture of the standards development process by large firms/incumbents. • Seek inputs from a range of firms and facilitate the provision of inputs from smaller firms and potential entrants.	• Ensure that private standards incorporated into legal/policy instruments are not unnecessarily restrictive and do not provide undue advantages to market leaders/incumbents.
They do not explicitly consider constraints faced by small players or new entrants.	• Explicitly include these constraints in the ex ante analysis of standards and seek inputs from a range of firms (including those not currently in the market).	• Support small firms to participate in standards development processes, such as through capacity building. • Develop codes of conduct for standards development bodies to encourage involvement of small firms. • Allow small firms to collaborate in their compliance efforts, such as through shared compliance infrastructure. • Develop competing/reference standards that are more friendly to small firms. • Create accessible processes for challenging standards that may unreasonably restrict competition.
They are set above minimum requirements or when there is an incentive to set the standard stringently.	• Clearly define objectives and base standards on technical analysis of standards requirements. • Implement a cost-benefit analysis when designing a standard. • Create tiered standards where appropriate with minimum and value tiers if needed. • Regularly review standards.	• Establish antitrust compliance and risk prevention mechanisms for standards development organizations. • Ensure government instruments do not adopt private standards without assessing whether they are set in the least distortive way. • Monitor the standards to ensure they are not used in a way that excludes players and assess whether there could be a case to investigate anticompetitive practices involving standards development bodies.

		• Create accessible processes for firms to challenge standards that may unreasonably restrict competition.
They are not tailored to the local context (taking into account the need to avoid fragmentation or a lack of harmonization across countries).	• Avoid directly transposing standards from developed countries to developing countries without considering the local context and constraints.	• Encourage participation of local firms in standards development organizations.
They relate to product specifications/processes rather than information provision, such as labelling requirements or marking requirements.	• Assess whether labelling/marking requirements can achieve the intended objectives in a way that is less distortive.	• Ensure that private standards incorporated into legal/policy instruments are based on the least restrictive design.
They relate to product specifications (including inputs or contents) or processes rather than performance.	• Assess whether performance requirements can achieve the intended objectives in a way that is less distortive.	• Ensure that private standards incorporated into legal/policy instruments are based on the least restrictive design.
Different standards are set that extract surplus from consumers in different market segments.	• Less likely in public standards. Conduct impact analysis of different types of potential standards before adoption.	• Educate consumers to understand when differentiation in standards reflects meaningful differences in value. • Monitor the market for potential issues arising from market segmentation and assess whether there could be a case to investigate anticompetitive practices. • Develop competing/reference standards that avoid market segmentation.
They are excessively complex or costly to implement.	• Conduct cost-benefit analysis of costs/process of compliance before implementing the standard. • Apply principles of proportionality to the standard;[a] offer flexibility in how to achieve compliance. • Publish guidance/implementation documents.	• Avoid incorporating standards that are excessively costly/complex into legal/policy instruments • Develop competing/reference public standards that are more cost-effective.
They contain provisions that directly influence price and that can facilitate coordination between competitors.	• Avoid requiring the exchange of commercially sensitive information in public standards.	• Monitor the standards to ensure they are not used to collude with competitors and assess whether there could be a case to investigate anticompetitive practices.

Source: Authors' own elaboration.

Note: The principle of proportionality means that any measure adopted by regulators must be appropriate, necessary, and not excessive in relation to the legitimate objective it seeks to achieve.

Implementation

While the design of standards is important, in some cases it is their implementation that distorts the level playing field. For example, while local manufacturers in Zambia's wire and cable sector are able to comply with the minimum required standards set by the Zambia Compulsory Standards Agency (ZAMEFA) (and other international standards), the greater challenge for local production appears to be the lack of enforcement of required standards on imported products. There have been reports of shipments of cables manufactured in China failing to meet conductivity and strength standards. ZAMEFA has reportedly found wire products with substandard insulation being sold in the local market. (Africa Rise 2024). Also in Zambia, a recent review confirmed that many mining companies do not comply with environmental standards (Wambwa, Mundike, and Chirango 2023), which could put those that do at a disadvantage in terms of costs. In Europe it has been found that one in four imported chemical products are noncompliant with EU regulations on limits for restricted substances and regulations for classification, labelling and packaging (CLP), indicating the need for more stringent enforcement of REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and CLP regulations at European points of entrance (ECHA 2020). These types of issues are likely to be even more prevalent in developing countries where enforcement capacity is a serious constraint. For example, inspector-to-worker ratios are three to ten times lower than in Europe, enabling violations of standards to go undetected.[10]

Well-functioning markets for conformity assessment and accreditation services are important to ensure compliance costs and lack of compliance do not create an unlevel playing field. In addition to economic factors such as high importation costs for testing equipment and a lack of domestic expertise, in several countries, the government appears to play a key—and sometimes—exclusive role in the segment. This is the case even where such services could be efficiently served by the private sector. Moreover, the presence of state-subsidized service providers can discourage private entry. For example, in Senegal where there have been delays in the release of new seed varieties to the market, seed operators are licensed by the Seed Division of the Ministry of Agriculture (Division des Semences, DISEM). Services for certification of seed are also carried out exclusively by DISEM even though this could also be provided by the private sector. Thus, DISEM is solely responsible for determining the entry of players to the market of certified seed. In Tajikistan, in the market for technical testing services, although there seems to be no restriction on private laboratories performing such services, most of the companies operating are still related to the regulator and the government, except for a limited number of private and better equipped independent firms that have been registered through the technical assistance from international donors. In India's information and communication technology (ICT) sector, there have been concerns raised that India's mandatory testing and certification of ICT equipment is restrictive as bordering countries are obliged to use specific government-approved labs and cannot use internationally accredited labs.[11] China has raised this as a trade concern at the World Trade Organization (WTO) several times.[12] Meanwhile, in Canada, the Canadian Council of Independent Labs (CCIL) has complained about the lack of a level playing field with respect to publicly subsidized labs (such as those operated by government-supported research institutes, universities, and municipalities). The private firms allege that, because they are subsidized, these public labs can offer services at low rates that are noncommercial.[13]

Case studies on the role of standards in markets and impact on competition dynamics

Case study 1: Cement standards represent an example of how product standards can have various effects on the market

The impact of standards on entry and market participation

Cement standards can create barriers to entry, especially when they are used strategically by incumbents. In 2014, the Standards Organisation of Nigeria (SON), a statutory body, adopted a standard that restricted the use of the widely produced 32.5 grade cement to plastering only and replaced the national standard for general purpose applications, including casting of columns, beams, slabs, and molding blocks, to 42.5 grade cement. While SON cited safety reasons for the restriction, 32.5 grade cement is commonly used around the world, has characteristics that are desirable for various uses, and can reach strengths similar to 42.5 cement depending on how the ratios used for concrete production. It is widely acknowledged that the move was influenced by a large politically connected firm, Dangote, that was the only producer of 42.5 grade cement and that launched a campaign against 32.5 grade three months before the standard was imposed (Kotzen 2024). The campaign was seen as a strategic move to exclude Dangote's major competitors, most notably Lafarge, from the market as 80 percent of Lafarge's production capacity was designed to produce 32.5 grade cement, while Dangote's production capacity was already calibrated to produce 42.5 grade cement (Okechukwu, Nnaemeka, and Ezeibe 2016). The mandatory nature of the standard significantly curtailed the ability of other firms to compete through both imports and local production. A 42.5 grade standard was also adopted in Liberia in 2013, after which Liberia went from having several active importers to being supplied only by Dangote. In Nigeria, brands that compete against Dangote—Lafarge, Ashaka, and Unicem—filed a suit against SON challenging the order (Global Cement 2014; Guenioui 2014).

The impact of standard design on innovation

Performance-based standards can be a key lever to move toward decarbonization in the cement/concrete sector. Traditional cement standards, which are often based on prescriptive specifications rather than performance outcomes, can inadvertently hinder innovation in the development and adoption of green building materials like low-carbon cements (Crudgington 2023). This has been cited as an issue in the decarbonization of cement in a number of countries, including emerging economies like Brazil and South Africa.[14] Traditional standards typically mandate specific material compositions and manufacturing processes rooted in the properties of conventional Portland cement. This creates an unlevel playing field for different technologies and leaves little flexibility for alternative formulations that reduce carbon emissions. As a result, novel low-carbon solutions—such as blended cements, alkali-activated materials, or geopolymers—struggle to gain market acceptance or regulatory approval, even if they perform as well as or better than traditional options. Moreover, traditional approaches do not provide flexibility in accommodating local differences in climate and soil conditions that make alternative formulations more or less viable in some locations. For example, in locations unlikely to experience tremors or extreme temperatures, more buildings could be built using low clinker or novel cements. Ideally, standards would allow the lowest-carbon cements to be matched to their most viable use-cases, with higher-carbon cements reserved only for those applications where they might still be needed.

Transitioning to performance-based standards that are technology neutral can help spur the uptake of new innovations. For example, Ecuador (2012), Colombia (2021), El Salvador (2014), and Guatemala (2018) have all transitioned to performance-based cement standards. The results have been positive, with

cement producers designing plants to operate with clinker substitutes without issues in outcomes. Guatemala has been an early adopter of innovations such as calcined clays partly because of the space offered for innovation by its standards (ECOS 2024).

One of the main challenges for performance-based standards is the need for rapid and accurate tests to predict the performance of novel concretes over their lifetime. This requires investment by standards bodies in developing faster testing methods, specifically for high-blend cements. It may also require a shift to more on-site testing of materials through field-based detection tools (Lehne and Preston 2018).

Performance-based cement standards also need to be complemented by equivalent standards for concrete, as well as by changes in building codes. For example, building codes referencing traditional standards effectively make conventional cement the default choice, because deviating requires special approvals that many construction firms are unwilling to pursue. This regulatory inertia and reliance on legacy standards slows the transition to more sustainable construction materials but also disincentivizes investment in research and development of cleaner alternatives.

Standards used to facilitate cartelization

An example of cement standards in Brazil demonstrates how standards can facilitate collusion. In Brazil, six cement companies were involved in a cartel that lasted from 2002 to 2006. One strategy used by the cartel was to exclude new competitors by lobbying to have the standards of the Brazilian Association of Technical Standards (ABNT) raised to impose barriers to entry for competitors—generally small and medium enterprises. For example, one standard stipulated minimum volumes, set specific characteristics of the cement used in concrete, and prohibited the use of additives in concrete. This put firms that were not integrated with cement plants at a disadvantage and, by prohibiting additives, prevented concrete plants from becoming grinding plants that could compete with the cement cartel members (Brazil, CADE 2015, updated 2025).

Case study 2: Food value chains are affected by both private and public standards

Private food standards set by large retailers have emerged as an important mode of market governance. This can have both procompetitive and anticompetitive implications. On one hand, these standards can help to ensure consistent quality, traceability, and sustainability practices across supply chains. They may also drive innovation as suppliers compete to meet higher standards. On the other hand, they act as entry barriers, particularly for smaller suppliers that lack the resources to meet stringent or varying requirements. The requirements they specify for quality, delivery, variety, processes, food safety, and quality systems help determine what types of producers and processors are able to gain access to food value chains and the activities they must carry out.[15] The problem is compounded when the standard is de facto mandatory because a majority of large buyers demand it. As a result, small producers run the risk of being excluded from high-value markets. This problem is particularly acute for developing countries due to the lack of infrastructure and public finance to help domestic producers adopt standards (Liu 2009). The introduction of private labels by retailers, based on their private standards, can also increase retailers' incentives and ability to abuse their buyer power with respect to branded suppliers. This is because branded products become a direct competitor, and retailers have the ability to destock or undercut these branded products (CCLP and IECL 2024; Ezrene 2012; Vander Stichele and Young (2009).

Private food standards are typically set above minimum requirements[16] and can be used to segment retail markets. In some cases, private standards may be used strategically by retailers to differentiate retail

offerings. This segmentation allows retailers to justify higher prices in some segments and reduces price competition.[17] Moreover, the replacement of Codex standards in some instances by GlobalG.A.P. standards (which was created by a consortium of large supermarkets) is generally thought to have resulted in disproportionate influence of a small number of global food retailers in international food markets (Halabi and Lin 2017). The costs for small producers of complying with GlobalG.A.P. are substantial. Indeed, a key concern around private standards is that the costs of processes of compliance and conformity assessment tend to be pushed down global agri-food value chains away from standards adopters and toward their suppliers**.** Graffham, Karehu, and MacGregor (2007) calculated that, considering the cost for Kenyan exporters to meet GlobalG.A.P. standard[18] in the run-up to its introduction for Kenyan exports in January 2005, its adoption was viable only if exporters were given an initial subsidy. Also in Kenya, Asfaw, Mithöfer, and Waibel (2010) compared farmer groups of different sizes finding that, even with substantial support from exporters and donors, the breakeven period for small farmer investments in GlobalG.A.P. compliance was three years, compared to one month for exporter-owned farms and twelve months for large contract farms. An empirical study of lychee producers in Madagascar found that adoption of GlobalG.A.P. standards did not affect the prices received by farmers but it did increase the quantity of sales, potentially because new infrastructure was built by exporters to meet new requirements (Subervie and Vagneron 2012).

Public mandatory standards can also restrict competition when they are not well designed. For examples, in 2000, the Zambian Ministry of Health introduced legislation requiring that all sugar destined for direct consumption in Zambia be fortified with specific quantities of Vitamin A. This fortification initiative was supported by Zambia Sugar, the dominant player in the sugar market. Such requirements do not exist in most countries. Therefore, in practical terms, this meant that sugar imports would be blocked from entering Zambia's market. Before the legislation was passed, cheaper sugar imported from Zimbabwe and Malawi held a 25 percent market share in Zambia. Following the legislation, without these imports, consumer prices for domestic sugar rose despite the fact that Zambia was a low-cost sugar producer. In 2012, for example, Zambia Sugar raised its price by 14 percent, squeezing the food budgets of Zambian consumers.

In several regions, a lack of harmonization of standards in seed markets across countries has been identified as a barrier to trade and competition. In response, several countries are adopting nonbinding standards for vegetable seeds to facilitate competition. Many countries now do not mandate seed certification but rely on alternative mechanisms such as minimum quality standards, quality declared seed systems, truth-in-labeling, or voluntary certification. These practices have been increasingly adopted in Africa to promote vegetable crop seed markets, including in Zimbabwe and Kenya. However, there are still reports that seed authorities continue to insist on certification (Kuhlmann et al. 2023). Regional communities in Eastern and Southern Africa—such as the Common Market for Eastern and Southern Africa (COMESA), the Southern African Development Community (SADC), and the East African Community (EAC)—are also undergoing a seed standards harmonization process to make it easier for farmers and agribusinesses to trade seeds across borders. One key issue that stands in the way of this harmonization is the high volume of trade of counterfeit seed (which are often labelled and packaged to look like certified seed). In Uganda, for example, the government estimated in 2018 that 30 percent to 40 percent of seeds sold were counterfeit.[19]

Case study 3: De facto standards

De facto standards arise organically through the market dominance of a particular player or through widespread adoption without formal designation. They become standard practice through their prevalence rather than official endorsement. This contrasts with other standard types that are formally established—for example, through standards bodies, regulatory authorities, or firm associations—and often receive explicit recognition through legal processes or organization-wide agreements. Examples include the QWERTY keyboard layout, the Microsoft office file formats or PDF formats, the USB interface for connecting peripherals to computers.

De facto standards are most likely to emerge in markets characterized by rapid technological innovation and network effects. For example, the adoption of de facto standards is more likely in compatibility-driven markets (such as software), markets where technological superiority is critical (such as search), and platform technologies (such as app stores) with network effects leading exponential growth in value with users.

De facto standards can reinforce market power and may enable anticompetitive outcomes where one or a few firms have proprietary control of those standards. When a single firm's proprietary technology becomes a de facto standard it can lead to lock-in of users (since users invest in and adapt to that standard) and discourage alternatives. For example, Apple's App Store is the de facto standard for mobile app distribution and significantly influences the toolkits developers use to build apps. App stores are critical for driving quality and innovation. While Apple's App Store creates consistency and quality assurance for consumers, it also establishes barriers to entry and switching costs that diminish competition in the ecosystem. For example, Apple's official development environment for apps, Xcode, is exclusively available on macOS. Moreover, all apps that are distributed through alternative non-Apple app stores on iOS must also go through Apple's process of notarization and approval, which can hinder the development of alternative app stores.[20] Restrictions over payment methods in the Apple app store have also been raised as an issue. Any app feature that involves a purchase must use Apple's purchase system, allowing Apple to collect a commission (typically 15 percent to 30 percent). App developers have also generally been prohibited from directing users to alternative payment methods or external websites, limiting consumer choice and competition (EC 2024).

Regulatory authorities in some regions are increasingly scrutinizing technology platforms where de facto standards have emerged. For example, under the United Kingdom's new regulatory regime for competition in digital markets,[21] the potential for a firm to play a major role in setting de facto standards is one of the conditions used to determine whether it has a position of strategic significance (which consequently determines whether the activities of the firm should be regulated) (United Kingdom, CMA 2024). Under recently introduced regulation in the Republic of Korea, Japan, and the European Union, Apple has been required to allow third-party payment options. Similar regulations are being considered in emerging markets like India and Brazil. The EU's Digital Markets Act also requires that Apple offer its users the choice of using alternative apps and must allow developers to direct users to external offers and websites. However, implementation of these recommendations by firms remains restrictive or includes high fees that deter actual competition (Crémer et al. 2024). Such regulations can also dampen innovation incentives. The balance of effects between innovation and competition must be carefully understood, considering the specific context and platform ecosystem in question before being adopted.

Case study 4: Standard Essential Patents

While it is recognized that standards development organizations are broadly procompetitive, it is also acknowledged that market power can be created through the standards development process when an industry-wide standard requires participants to use a particular firm's patented technology. These are known as standard essential patents (SEPs) and they promote innovation by ensuring protection for development and contributions to technology. The use of SEPs over other approaches (such as open standards) is particularly pertinent (1) in capital-intensive domains where firms require strong return on investment to promote innovation; and (2) where quality control is important because SEPs often undergo rigorous technical validation through standardization bodies. Nevertheless, the market power created for the holder of these SEPs can be abused when the standard is commercialized. For instance, it could refuse to license competitors or engage in patent holdups, where the firm refuses to license a patent unless very high royalties are paid by other firms using the standard. This can lead to higher input prices for other firms and reduced innovation. To protect against these risks and support the efficient dissemination of technologies, SEP holders are often required to provide a voluntary commitment at standards development organizations to offer licenses on Fair, Reasonable and Non-Discriminatory (FRAND) terms (Swanson and Baumol 2005).

In principle, competition law and SEPs/FRAND commitments operate in a complementary framework that balances intellectual property rights with competitive market principles. However, in practice, courts have faced ambiguity in defining what constitutes "fair, reasonable, and non-discriminatory" royalties because FRAND commitments are inherently flexible and context dependent**.** Disagreements persist over whether rates should reflect only the ex ante value of the technology before standardization rather than based on comparators that reflect the value of the standard following adoption (Dolmans 2021). Debates also exist over whether it is anticompetitive for SEP holders to seek injunctions blocking the sale of products by SEP users that have not concluded a licensing agreement with the SEP holder. While some jurisdictions (like the EU) restrict injunctions because they exclude rivals and are considered to harm competition, others permit them when negotiations fail.[22] In addition, although competition authorities rarely intervene in cases that purely involve unfair pricing, in theory, competition authorities can investigate whether SEP royalty rates are excessive and discriminatory—potentially reaching different decisions to the courts.

Several cases in India highlight the jurisdiction's evolving stance on SEP enforcement and FRAND licensing, with disagreement between the competition authority and courts, which are increasingly willing to issue injunctions and enforce licensing terms. In 2013–14, Ericsson launched SEP infringement lawsuits against two Indian mobile phone manufacturers, Micromax and Intex, seeking damages and injunctions for alleged infringement of eight SEPs related to 2G and 3G telecommunications standards. Simultaneously, Micromax and Intext filed complaints with the Competition Commission of India (CCI) against Ericsson, alleging abuse of dominant market position.[23] The firms argued that Ericsson was charging excessive royalties by using the entire product's sale price as the royalty base instead of the price of the smallest saleable component (such as the CDMA chip) and imposing non-disclosure agreements (NDAs) that allowed Ericsson to engage in discriminatory pricing by offering different rates and terms to different licensees. The CCI's preliminary investigation found merit in these claims, determining that Ericsson had a dominant market position in technology for mobile phones that implement GSM standards and was potentially engaging in discriminatory pricing. The CCI concluded that Ericsson's royalty offers appeared to be contrary to FRAND terms and ordered a further investigation into the matter. Ericsson challenged the CCI's orders through an appeal to the Delhi High Court in 2014.[24] The court ultimately ruled in July 2023 that the CCI lacks the power to investigate SEP licensing practices, determining that the Patent Act should prevail over the Competition Act. The courts also initially granted interim injunctions in Ericsson's

favor, but these were later modified to allow the firms to use the SEPs upon payment of interim royalties (Beruar 2024). Ericsson has also sued other low-cost mobile phone sellers/manufacturers for patent infringement including Intex, Lava, Gionee, Xia, and iBall (Chaudhari 2016).[25] In the case against Lava, the court upheld the calculation of royalty based on the end-product and not the smallest components and awarded damages in favor of Ericsson.

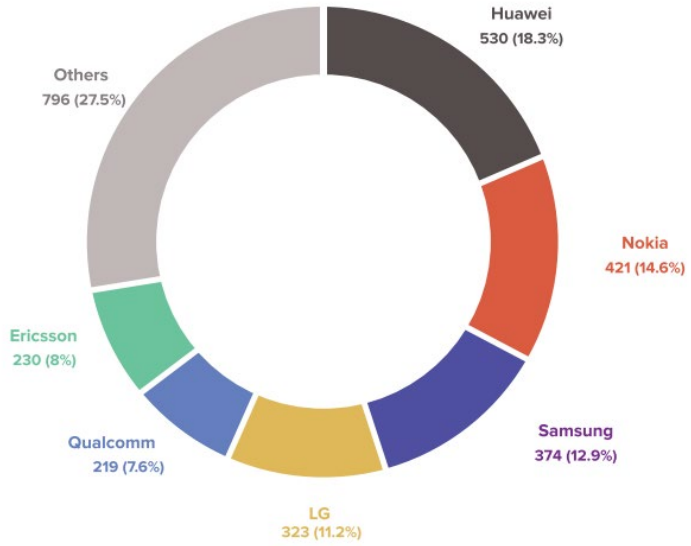
In China, SEPs have become a focus of antitrust enforcement and court action, especially in critical industries.[26] In a significant early case in 2015, China's National Development and Reform Commission concluded an antitrust investigation into Qualcomm, finding it engaged in anticompetitive conduct related to the licensing of CDMA, WCDMA, and LTE SEPs, leading to a record fine and mandated changes in Qualcomm's practices (Li 2016). In 2024, the State Administration for Market Regulation (SAMR) released guidelines to regulate antitrust risks associated with SEP licensing. The guidelines codify the FRAND principle, requiring SEP holders to make explicit FRAND commitments and engage in good-faith negotiations. These negotiations must include clear licensing offers from SEP holders, including a list of SEPs, claim charts, and royalty calculation methods. The guidelines also address antitrust risks associated with SEP patent pools (to prevent SEP holders from using patent pools to collude) and provide additional factors for determining excessive SEP pricing (Cheng et al. 2024; Fangda Partners 2024). Further, in 2024, SAMR issued a warning letter to Avanci, a patent pool, highlighting antitrust risk in its licensing of SEPs for automotive wireless communication (Jones Day 2024). The courts have also taken a proactive approach to adjudicating SEP disputes. In 2023, a Chinese court made a determination on FRAND rates for 5G-relevant SEPs owned by Nokia in favor of Oppo, a Chinese licensee (Bonadioi and Pandya 2023). In the same year, the Supreme People's Court reversed a lower court decision that the Japanese firm, Hitachi Metals, had abused its dominance in the market for SEPs for the production of a rare earth metal.[27]

In Türkiye, the competition authority issued its first SEP-related decision in 2019 after Vestel, a Turkish electronics manufacturer, complained that Philips had abused its dominance by not offering Vestel a license for HEVC (video compression) standards on a FRAND basis.[28] The competition authority ruled that certain provisions in the TV Patent License and Settlement Agreement signed between Vestel and Philips after a series of SEP litigations in Germany were anticompetitive, including excessive information requests and no challenge of validity clauses (which prevent the licensee from disputing the validity of the SEP during the contract term). The Turkish competition authority determined that Philips failed to provide licenses under FRAND conditions by not engaging a third independent party to determine license fees and by lacking transparency in fee determination. This landmark decision established important guidelines for evaluating antitrust issues related to SEPs under Turkish law.[29]

Globally, a relatively small number of companies based in high-income economies are the major technology contributors to most technological standards. Figure 3 shows that six firms hold over 70 percent of core SEPs for 5G that are protected by active, enforceable patents across multiple jurisdictions. All the firms except one (Huawei) are headquartered in high-income countries. For emerging economies, SEPs represent a complex landscape of opportunities and challenges. SEPs can provide access to advanced technologies that might otherwise be prohibitively expensive to develop internally. However, complex licensing processes and unequal bargaining power between emerging economy licensees and large SEP holders could pose a barrier to access and may disincentivize the uptake of SEPs by developers and manufacturers in emerging markets.[30] Smaller companies in emerging markets often lack the resources to effectively negotiate with established multinational firms or to build patent portfolios to use as leverage in negotiations. While in many cases large multinationals do not currently seek enforcement against infringement of their patents by small firms in emerging markets, as those markets and firms grow it will

become more likely that such cases will be brought forward. This has already occurred in the case of India discussed earlier.

Figure 3. More than 70 percent of core standard essential patents for 5G belong to six firms



Source: GreyB 2024.
Note: 5G is fifth generation of cellular network technology and has been deployed since 2019.

One way that emerging market firms can counterbalance SEP challenges over the longer term is by investing in their own patents in order to negotiate cross-licenses or use their intellectual property (IP) as leverage in negotiations. In the shorter term, emerging market firms wishing to license SEPs can develop capacity to negotiate and assess licensing offers, seek patent pools with lower transaction costs, and potentially leveraging licensing negotiation groups. In some cases, there may be a role for authorities to implement measures that promote more equitable SEP licensing practices to ensure that critical technological standards serve as a catalyst for innovation rather than a barrier to entry for smaller companies. For instance, in 2023 the European Commission proposed (but subsequently dropped) a new framework for transparent licensing of SEPs. Among the various provisions in the proposal was the establishment of a Competence Centre to administer a SEP registry, essentiality checks, a FRAND determination procedure, and support services for small and medium enterprises (SMEs). SME support measures included free advisory services; reduced fees for registration of SEPs, for essentiality checks, and for access to the SEP register; as well as promoting more favorable FRAND terms for SMEs.[31] In Singapore and Malaysia, the competition authorities have issued guidelines indicating that injunctions sought by SEP holders (to prevent a firm from using its SEP) can raise competition concerns, especially if the SEP holder has committed to FRAND terms.[32] In Türkiye, the competition authority has published guidelines to assess compatibility with the competition law of licensing of closed standards under technology pools (where firms agree to cross-license one another to create a de facto industry standard and undertake not to license third parties).[33]

Case study 5: Sustainability-related standards

Some sustainability-related standards may raise red flags under the competition law given that they constitute concerted practices. Many sustainability agreements between firms are agreements on standards for the sustainability performance of products, inputs, or processes. Examples include coordination on the use of a particular packaging material to facilitate recycling, agreement on minimum energy efficiency standards for products, standards for information exchange to promote joint capacity utilization and thus improve energy efficiency, and collective commitments to discontinue unsustainable products or inputs.

However, competition authorities increasingly recognize the benefits of collaboration for sustainability objectives. Competition policies can support standards for environmental sustainability without compromising market competition by providing a framework for assessing and potentially exempting beneficial sustainability standards while preventing anticompetitive practices in the guise of actions to promote sustainability. In many jurisdictions, the competition law provides that the conduct will be exempted where the efficiencies outweigh the harm to competition. These efficiencies must be clearly defined in the regulatory framework and typically must provide a substantial contribution to sustainability. Additional guidance has therefore been published in several countries such as Japan,[34] Singapore,[35] New Zealand,[36] the Netherlands,[37] Austria,[38] and the United Kingdom[39] on the application of the competition law with respect to sustainability agreements. This approach has been largely welcomed as providing greater clarity for businesses seeking to engage in green initiatives. Developing countries could consider adopting similar guidance to provide legal certainty and transparency to firms. Such guidelines may set out:

- Circumstances in which sustainability arrangements are unlikely to restrict competition appreciably and therefore fall outside the scope of the competition law; and
- Conditions where benefits are likely to offset the restrictions on competition and therefore meet the conditions for an exemption. Standard-setters should also consider whether the standard is indispensable for the realization of the sustainability goals and whether its adoption could lead to opportunities for the elimination of competition.

There are examples of such prosustainability exemptions in emerging economies. In Brazil in 2023, the Administrative Council for Economic Defense (CADE) approved a joint venture between agricultural commodities traders. The joint venture aims to develop and operate software to standardize sustainability measurement in the food and agricultural supply chain.[40] The decision relied on safeguards typically implemented and required by CADE to mitigate risks associated with the sharing of sensitive information. As part of the approval the firms have committed to open platform access to all participants in the global food chain on fair, transparent, and commercially viable terms, without preference for the joint venture companies. The use of the platform for exchange of commercially sensitive information is also prohibited. In Türkiye, the Soaps and Detergents Industry Association received approval from the competition authority to launch a coordinated effort to develop and promote compact detergent products, which are more eco-friendly. This included joint advertising and a mutual commitment by major producers to produce only compact detergent. The project was open to all producers, distributors, and importers of detergent regardless of their size or membership in the Association. In its assessment, the competition authority found that similar efforts by individual firms had failed to obtain sufficient consumer awareness for widespread adoption. Therefore, a joint approach was deemed necessary to move consumers toward more sustainable compact products (OECD 2010).

Minimizing the negative effects of standards on competition

Policy makers and standards-setters can pursue several avenues to promote procompetitive standards and implementation.

- *Regulatory impact assessment of standards.* Regulatory impact assessment (RIA) frameworks can be developed to be applied to public standards (and private standards that governments are considering incorporating into regulation). This can help incorporate a risk-based approach to the design of standards and ensure that standards are designed to minimize risks to competition. When properly implemented, RIA frameworks require regulators to systematically analyze the competitive implications of proposed public standards, identifying potential barriers to market entry, unnecessary compliance burdens on smaller entities, or provisions that could inadvertently favor incumbents. Effective assessments can include qualitative and quantitative analysis of competition effects and should evaluate whether the standard is proportionate, whether the benefits outweigh potential competitive harms, and whether there are alternative approaches that are less distortive to competition.

  Such a framework could draw on the factors that increase the risks of harm discussed in the first section of this study. For example, consideration can be given to the types of requirements included in the standard and whether the same objectives can be achieved with less restrictive requirements (for example, whether standards on information provision may be sufficient, rather than requirements for product characteristics; whether information-sharing requirements include commercially sensitive information), how the standard has been set (such as ensuring that specificities and constraints faced by small firms and new entrants have been considered), and whether there is sufficiently developed quality infrastructure in place to ensure that the standard can be implemented in a way that maintains a level playing field. Different RIA frameworks vary considerably in scope and depth. Some already incorporate comprehensive competition analysis, while others treat competition impacts as one of many factors and do not include specific guidance on conducting a competition assessment. Thus, the effort required to ensure that RIA frameworks assess the impact of standards on competition will differ by jurisdiction.

- *Codes of conduct in retail value chains.* Such codes can counterbalance some of the issues small suppliers face due to the proliferation of private food/retail standards. Codes of conduct can include commitments on inclusion and fairness including promoting non-discrimination, building capacity, supporting progressive compliance, sharing investment in compliance, and addressing issues like unfair delisting and unilateral contract changes, and principles on transparency. Such codes of conduct are typically voluntary. While this can encourage their development and increase flexibility, it also means that strong accountability mechanisms and incentives systems may be needed to encourage effective implementation.

- *Regulation of de facto standards in digital ecosystems.* In some jurisdictions, regulators are beginning to regulate aspects of de facto standards in digital markets. For example, regulations that seek to address competition issues in digital markets in the United Kingdom, the European Union, Japan, and the Republic of Korea include provisions that oblige platforms that have been identified as holding risks for competition to ensure interoperability with third-party services and mandate fair access to technical interfaces. Many of these regulations include specific obligations for app store providers given that they act as a gateway for developers to access users and have a direct impact on innovation. For example, in Japan, app store providers are not allowed to prevent developers from using third-

party payment systems, providing products and services through external websites, and using third-party browsers.

Careful consideration is required in adopting this type of regulation because these types of provisions can have negative impacts on incentives for platforms to innovate and on compliance costs. In addition, because implementation is still nascent, these approaches are untested and "international best practice" is yet to be developed. The jurisdictions currently adopting such regulation are largely high-income jurisdictions where some digital markets have already tipped toward a few large platforms. While some emerging markets with more developed digital platform ecosystems are considering a similar approach (including India and Brazil), a more cautious approach may be necessary when the platform life cycle is nascent, and where markets are more contestable (often in lower-income settings) (Nyman and Begazo 2025).

- *International standards as the basis for technical standards.* Encouraging governments to reference international standards in technical regulation can reduce discrimination, reduce the risk of domestic protections being disguised technical regulations, and thus facilitate trade and increased competition. This aligns with the WTO's approach of requiring member countries to use relevant international standards as a basis for their technical regulations whenever possible—and providing justifications for deviations from this principle—under the Technical Barriers to Trade Agreement.

  This approach could be incorporated into RIA frameworks, especially as consideration of alignment with international standards should be captured in the RIA assessment on competition and trade effects. It could also be incorporated in peer review processes among regional economic communities. Moreover, capacity-building programs could help regulators in developing countries develop the expertise needed to effectively reference and implement international standards, as well as participate in international standards development.

  Although international standards promote regulatory convergence, which can reduce compliance costs for businesses operating across multiple markets, there may be some situations where there is a need to tailor standards to the local context. For example, where local manufacturing capabilities and technological maturity cannot immediately meet high-end requirements, there may be a need for tiering of standards or a transition period to allow for the participation of local firms.

- *Ensuring well-functioning markets in conformity and accreditation services.* Governments can foster competition in conformity assessment and accreditation services by allowing private sector participation in cases where this is prohibited, and removing exclusive rights for firms, allowing multiple qualified providers to operate in the market. Accreditation requirements should focus primarily on technical competence rather than excessive procedural demands that could disadvantage new market entrants. Ensuring a level playing field between private and public sector players is also crucial, with careful attention required to prevent subsidies or preferential treatment from creating undue competitive advantages for certain assessment bodies, particularly government-affiliated ones that may benefit from direct or indirect financial support. Regulatory frameworks should be designed to recognize results from any qualified assessment body that meets established competency requirements regardless of origin. Active participation in international mutual recognition arrangements or standard harmonization efforts can help eliminate duplicative testing requirements and reduce barriers to trade. To prevent conflicts of interest, government bodies that regulate conformity assessment systems should not also provide those services commercially.

- *Improved market surveillance.* Investment in effective market surveillance systems can be used to discourage noncompliance or misleading information by some firms, thereby creating a more level playing field. New technologies and innovations for monitoring could be leveraged to increase efficiency and transparency in market monitoring.

Minimizing capture of the standards-setting process

Several steps can be taken to minimize the capture of the process by which standards are developed.

- *Inclusive composition of standards development organizations.* Promoting representation from consumer groups, smaller businesses, new entrants, and stakeholders from developing countries can support the development and review of more inclusive standards. This can be encouraged through transparent and inclusive criteria for membership, subsidized or tiered membership fees, appointment of representatives of these groups to advisory panels, and technical assistance to members of underrepresented groups to enable meaningful participation.

- *Governance of public standard setting procedures.* Governments can also actively seek and facilitate inputs from underrepresented groups such as smaller businesses, new entrants, and consumer groups by ensuring that mechanisms for engagement allow for participation by these groups. For example, small firms could be supported to attend consultations on standards with government (typically it is larger firms that participate in consultations, partly due to the cost of attending). Consultation proceedings and discussions can be published online to increase transparency. RIA checklists can include questions on the inclusion of small firms or potential entrants in the consultation process.

- *Transparent processes to periodically update standards.* Governments can commit to periodically reviewing standards to assess how successful they have been in achieving their objectives and understand any negative impacts on market dynamics. This review should assess whether any changes are required to the process of designing standards to improve its impacts. Inputs should be sought from a range of stakeholders (refer to previous recommendation). Data and insights from inspections, conformity assessment, and market surveillance could also be assessed.

- *Standards development organizations' guidance and rules on SEPs.* Standards development organizations can issue guidance on SEP licensing fees that are tailored to developing countries. For example, they could specify that lower prices for developing countries would not necessarily be discriminatory or outline policies for reduced-rate royalties for certain types of licensees. SEP holders could be asked to propose different fees for different types of licensees in advance (although, on the downside, it should be noted that this could result in patent holders attempting to influence the votes of members of a standards development organization by offering them attractive fees). Standards development organizations should also require the disclosure of the maximum fees and most restrictive licensing terms that patent holders would request for a given patent if it were to become part of a standard so that members can compare both the financial and technical merits of competing technologies before selecting a standard (OECD 2011).

Ensuring compatibility between standard setting and competition law

Several actions can be pursued to ensure compatibility.

- *Exemptions for development of standards for strategic initiatives such as sustainability.* Guidelines can be published by competition authorities clarifying when exemptions to competition law can be granted for standardization agreements that support initiatives such as promoting sustainability, R&D, and technology transfer.[41] This supports the pro-efficiency effects of standards by providing certainty for firms wishing to develop and engage in such standards that might otherwise be considered to violate provisions of the competition law. Guidelines should include guidance on types of agreements that are eligible, assessment methodologies for understanding procompetitive and anticompetitive effects, and other specific conditions such as the indispensability of the standard in achieving objectives. Box 3 provides key elements that can be included in competition law exemption criteria for standardization agreements in the example of sustainability objectives.

Box 1. Examples of key criteria for exemptions from competition law for standardization agreements with respect to sustainability objectives

- Defining what is meant by environmental sustainability benefits to include, for example, encouraging climate neutrality or climate protection or transitioning to a circular economy.
- Clarifying that standardization agreements between undertakings may be justified where:
    - the *benefits contribute to a sustainable economy*;
    - the contribution is *substantial,* such that it can be assumed that consumers enjoy a fair share of the benefits;
    - the restrictions imposed by the agreement are *indispensable* for the realization of efficiency gains; and
    - the cooperation *does not eliminate competition* with respect to a substantial proportion of the goods or services in question.

- Explaining that the cooperation may contribute to an improvement either in the form of a *monetary gain* (such as cost saving) or *nonmonetary gain* (such as reduction of harm to the environment or reduction of supply chain disruptions to limit the time it takes to bring sustainable products to the market).
- Clarifying that the efficiency gains will be "substantial" where the *benefits to* sustainability *at least compensate for the negative impact on competition* derived from the cooperation. An analysis of the positive and negative effects of the agreement is required, which may involve qualitative and quantitative aspects.
- Ensuring that the *efficiency gains are substantiated* such that they are demonstrated in an objective, verifiable and concrete manner and are certain or achievable in the foreseeable future.
- Clarify that concerns are unlikely to rise where the cooperation *does not restrain the key dimensions of competition* (such as price), *restrain new entry,* or *exclude existing players* in the relevant market.

Source: Miralles and Ngoga 2024.

- *Publishing competition law guidelines on SEPs.* Competition authorities can publish competition law guidelines regarding SEPs to provide a clear framework for the enforcement of antitrust rules in relation to SEPs. Such guidelines can clarify—among others—possible preventative measures (such as requiring written reports on the implementation of practice changes by SEP holders), what constitutes unreasonable conditions in licensing terms, treatment of possible excessive pricing with regard to SEP license fees, assessment of dominant position of licensors, and under what conditions injunctions applied by the SEP holder may be considered anticompetitive.

- *Ensuring* standards development organizations *do not facilitate breach of antitrust laws.* Competition authorities can publish guidelines relating to the processes of standards development organizations or conduct advocacy initiatives with standards development organizations to increase awareness of the types of information sharing that can be considered an anticompetitive practice. They can also clarify in which contexts discussions over pricing in standards development organizations would be prohibited under the competition law, as well as clarifying that exclusion of specific undertakings from the standard-setting or implementation stages would be considered anticompetitive. Box 4 outlines guidance on ensuring that standard-setting processes comply with the competition law from the European Union and the United States.

Box 4. Guidance on ensuring standard-development processes comply with the competition law

When setting up a new standard, businesses, trade associations, and/or standards development organizations should follow these steps to comply with competition law:

- Allow stakeholders to inform themselves effectively of upcoming, ongoing, and finalized standardization work in sufficient time at each stage of development of the standard—for example, through the publication of regular updates in dedicated journals.
- Transparency: Standards development organizations should have procedures that guarantee that all competitors in the markets affected by the standard can participate in the standard-setting process and join the agreement.
- Ensure access to the standard is on fair, reasonable and non-discriminatory (FRAND) terms for all businesses that comply with it.
- If the standard-setting involves intellectual property rights (IPR), participants must disclose in good faith their IPR that might be essential to the implementation of the standard. They must also offer to license their essential IPR to all third parties on FRAND terms. This should be provided for in an IPR policy from the standards development organization.
- Ensure that the members of a standards development organization remain free to develop alternative standards (including higher standards) or products that do not comply with the agreed standard.

When setting standards, businesses, trade associations, and standards development organizations should not:

- Exchange or disclose commercially sensitive information that goes beyond what is necessary for setting the standard.
- Impose obligations (either directly or indirectly) to comply with the standard, label, or code of conduct on businesses that do not wish to participate.
- Make it difficult for businesses to develop alternative standards (including higher standards) or products that do not comply with the agreed standard.

- Use quality norms to prevent a technology or a competitor from entering the market. Examples include setting a standard and putting pressure on third parties to prevent them from marketing products that do not comply with that standard, or colluding to exclude a new technology from an existing standard.

Sources: Adapted from the EU's Horizontal Competition Guidelines (EC 2011) and the United Kingdom CMA Guidance (UK CMA 2021).

Notes

[1] Refer to USAID (2019).
[2] Refer, for example, to Asprilla et al. (2019); Fontagné et al. (2015).
[3] Refer to Blumenfeld and Lipstein (2008).
[4] These effects are not mutually exclusive. A particular standard can have multiple effects.
[5] Refer, for example, to Alfano (2014).
[6] Patent hold up typically occurs when the owner of a patent that has become part of an industry standard uses its leverage to demand higher fees or better licensing terms. The patent holder may, for example, threaten to sue or seek injunctions to block sales if the user does not agree to their terms and may be able to wrest a settlement since it is too late for the user to change course.
[7] As an obvious example, any standard can unnecessarily raise barriers to entry if it is set more stringently than the minimum required to achieve the objectives.
[8] Refer, for example, to Vandemoortele and Deconinck (2014).
[9] Bunduchi, Williams, and Graham (2004) discuss concerns regarding the privatization of the development of "public goods" standards. Given the ability to make some standards excludable.
[10] Betcherman (2021); refer also to the ILOSTAT database showing inspectors per 10,000 employed persons, https://ilostat.ilo.org/topics/safety-and-health-at-work/.
[11] Refer to TÜV Rhineland, TEC Regulatory Testing and Approvals, https://www.tuv.com/united-kingdom/en/tec-india.html#:~:text=The%20Telecommunication%20Engineering%20Centre%20(TEC,national%20and%20international%20regulatory%20standards; Telecommunication Engineering Centre, https://www.tec.gov.in/pdf/MTCTE/Phase-V%20Product%20ILAC%20Extension.pdf; MPR, India Certification, https://www.certification-india.com/en/tec/what-is-tec/#:~:text=Telecommunication%20Engineering%20Center%20(TEC)%20is,Telecommunication%20Equipment%20(MTCTE)%20regulations,
[12] Refer to WTO (2022, 2024).
[13] Visit Canadian Council of Independent Laboratories, "Unfair Competition form Government Subsidized Labs." https://www.ccil.com/unfair-competition-from-government-subsidized-labs/.
[14] Lowitt (2020); Visedo and Pecchio (2019).
[15] Refer to Dolan and Humphrey (2010).
[16] Gorton et al. (2011); Henson and Humphry (2009).
[17] Busch and Bain (2004) indicate that retailers prefer to minimize price competition and to compete on the basis of other qualities. However, the rise of discount retailers like Lidl and Aldi, whose product range is primarily private label, has shown that it can actually intensify competition between retailers in some cases.
[18] Then known as EUREPGAP.
[19] Refer to Uganda's National Seed Policy (Uganda, Ministry of Agriculture, Animal Industry, and Fisheries, 2023).
[20] Installing Apps through Alternative App Distribution in the European Union, https://support.apple.com/en-

afri/117767#:~:text=All%20apps%20available%20through%20alternative,distributed%20through%20alternative%20app%20distribution.

[21] Digital Markets, Competition and Consumers Act 2024.

[22] In general, common law countries such as the United States and the United Kingdom primarily lean on patent law (which focuses on protecting the interests of patentees), whereas European jurisdictions generally adopt competition law (which focuses on addressing the potential anticompetitive consequences of SEP injunctions) as the guiding framework for determining whether injunctive relief is appropriate.

[23] India, Competition Commission of India. 2014. *Micromax and Intex v. Ericsson.* Case No. 50/2013 and Case No. 76/2013, Preliminary order.

[24] <insert this information here or in the appropriate spot>India, Delhi High Court. *Ericsson v. Micromax and Intex.* Orders in SEP litigation, 2013–2014

[25] iBall also filed a complaint to the competition authority in 201,5 but the firms ultimately reached a settlement and iBall withdrew their complaint.

[26] China, Supreme People's Court of China. *Huawei v. InterDigital; Nokia v. Oppo.* Decisions on FRAND/SEP Licensing, 2015–2023

[27] Refer to Zhan and Song (2023).

[28] Türkiye, Turkish Competition Authority. 2019. *Vestel v. Philips (SEP Licensing).* Decision No. 19-08/115-51.

[29] Refer to Karakulak and Kurtoğlu (2022); text=TV%20Patent%20License%20and%20Settlement%20Agreement%20signed,a%20series%20of%20SEP%20litigations%20in%20Germany.

[30] Contreras (2016); Myers and Pepe (2024).

[31] This proposal was ultimately dropped due to a lack of agreement on the reforms and questions over its implementation. For example, while the reform called for aggregate royalty rates to be published, licensing agreements are typically confidential, and SEP holders are often reluctant to share such information. https://single-market-economy.ec.europa.eu/industry/strategy/intellectual-property/patent-protection-eu/standard-essential-patents_en; DeVile (2025).

[32] Refer to Rouse (2025). Southeast Asia is increasingly seen as a significant region for SEP litigation as part of SEP licensing negotiation, particularly countries like Indonesia, the Philippines Thailand, and Viet Nam.

[33] Türkiye, Guidelines on Application of Articles 4 and 5 of the Act No. 4054 on the Protection of Competition to Technology Transfer Agreements adopted by the Competition Board. Such licensing agreements will be assessed under principles concerning technology pools in paragraphs 182–207 of the Guidelines.

[34] Japan, Anti-Monopoly Act Approach to the Activities of Business Operators, etc. towards the Realisation of a "Green Society," Japan Fair Trade Commission, 2023.

[35] Singapore, CCCS Draft Guidance Note on Business Collaborations Pursuing Environmental Sustainability Objectives, July 2023.

[36] New Zealand, Collaboration and Sustainability Guidelines, Commerce Commission, November 2023.

[37] Netherlands, Policy Rule, ACM's Oversight of Sustainability Agreements, Competition and Sustainability, 2023.

[38] Austria, Guidelines on the Application of Sec 2, para 1 Cartel Act to Sustainability Cooperations, September 2022, Austrian Federal Competition Authority (AFCA).

[39] United Kingdom, Green Agreements Guidance, Competition & Markets Authority (CMA) 185, October 2023.

[40] Refer to Brazil, CADE (2023); Fernandes (2023).

[41] Block exemption rules could also be adopted or amended to encompass standardization agreements that help achieve strategic aims (these are agreements that are block exempted because they are considered to be procompetitive provided they meet certain predefined criteria).

References

5G Americas. 2024. *Open RAN in Latin America and the Caribbean.* A 5G Americas White Paper. 5G Americas.

Africa RISE. 2024. *Zambia Copper Wire and Cable Market Assessment.* Africa RISE.

Alfano, Jessica. 2014. “Can We (Anti)Trust LEED? An Analysis of the Antitrust Implications for the Green Building Movement.” *Boston College Environmental Affairs Law Review* 41 (2): Article 5. http://lawdigitalcommons.bc.edu/ealr/ vol41/iss2/5.

Asfaw, Solomon, Dagmar Mithöfer, and Hermann Waibel. 2010. "What impact are EU supermarket standards having on developing countries' export of high-value horticultural products? Evidence from Kenya." *Journal of International Food & Agribusiness Marketing* 22, no. 3-4 (2010): 252-276.Asprilla, Alan, Nicolas Berman, Olivier Cadot, and Mélise Jaud. 2019. “Trade Policy and Market Power: Firm-Level Evidence.” *International Economic Review* 60 (4): 1647–73.

Beruar, Rahul. 2024. “India: SEPs and FRAND–Litigation, Policy and Latest Developments.” *Global Competition Review* October 22, 2024. https://globalcompetitionreview.com/hub/sepfrand-hub/2024/article/india-seps-and-frand-litigation-policy-and-latest-developments.

Betcherman, Gordon. 2021. “The Challenges Regulating Labor Markets in Developing Countries.” Jobs and Development (blog), World Bank, August 26, 2021. https://blogs.worldbank.org/en/jobs/challenges-regulating-labor-market-developing-countries.

Blind, Knut, Sören S. Petersen, and Cesare A. F. Riillo. 2017. “The Impact of Standardization and Standards on Innovation.” *Research Policy* 46 (1): 38–49.

Blumenfeld, Jeffrey, and Robert Lipstein. 2008. “Antitrust and SSO Developments.” Presentation for the 4th Annual Advanced Patent Law Institute at USPTO. Crowell & Morning. https://www.crowell.com/a/web/hcsNvK1UGRHVcrgg7ZFF4V/4TtkVc/antitrust-and-sso-developments_presentation.pdf.

Bonadioi, Enrico, and Dyuti Pandya. 2023. “Global FRAND Rates in China.” Kluwer Patent (blog), December 21, 2023. https://patentblog.kluweriplaw.com/2023/12/21/global-frand-rates-in-china/.

Brazil, CADE (Conselho Administrativo de Defesa Econômica/Administrative Council for European Defense). 2015, updated 2025. “Cade Fines Cement Cartel R$3.1 Billion.” January 1, 2015, updated September 15, 2025. https://www.gov.br/cade/pt-br/assuntos/noticias/cade-multa-em-r-3-1-bilhoes-o-cartel-do-cimento#:~:text=O%20Conselho%20Administrativo%20de%20Defesa,R%24%203%2C1%20bilhões.

Brazil, CADE (Conselho Administrativo de Defesa Econômica/Administrative Council for European Defense). 2023. “CADE Clears Joint Venture for the Development of Sustainability Measurement Software.” News, July 4, 2023. https://www.gov.br/cade/en/matters/news/cade-clears-joint-venture-for-the-development-of-sustainability-measurement-software.

Bunduchi, Raluca, Robin Williams, and Ian Graham. 2004. “Standardisation in the Digital Economy.” University of York. Paper presented at the “Standards, Democracy and the Public Interest” workshop, August 25, 2004, Paris. https://www.york.ac.uk/res/e-society/projects/24/Bunduchistandardisationworkshop2004.pdf.

Busch, Lawrence, and Carmen Bain. 2004. “New! Improved? The Transformation of the Global Agrifood system.” *Rural Sociology* 69 (3): 321–46.

Büthe, Tim, and Walter Mattli. 2011. *The New Global Rulers: The Privatization of Regulation in the World Economy.* Princeton, NJ: Princeton University Press.

Casarin, Ariel A., Magdelena Cornejo, and María Eugenia Delfino. 2020. “Market Power Absent Merger Review: Brewing in Perú.” *Review of Industrial Organization* 56: 535–56. https://doi.org/10.1007/s11151-019-09703-8.

CCLP (Centre for Competition Law and Policy) and IECL (Institute of European and Comparative Law). 2024. *Trends in Retail Competition: Private Labels, Brands and Competition Policy.* Report on the Nineteenth Annual Symposium on Competition amongst Retailers and Suppliers. University of Oxford. https://www.law.ox.ac.uk/sites/default/files/inline-files/Oxford%20Symposium%20Report%202024.pdf.

Chaudhari, Nehaa. 2016. “CCI Allowed to Probe Ericsson: FAQs on Ericsson’s Disputes with Micromax and Intex.” Centre for Internet & Society (blog), April 30, 2016. https://cis-india.org/a2k/blogs/the-quint-nehaa-chaudhari-april-30-2016-cci-allowed-to-probe-ericsson.

Cheng, Liu, Xu Jing, Jin Xiaotian, Jiang Hanxue, and Wang Haobo. 2024. “SAMR Releases Antitrust Guidelines for SEPs.” King & Wood Mallesons. https://www.kwm.com/cn/en/insights/latest-thinking/samr-releases-antitrust-guidelines-for-seps.html.

Contreras, Jorge L. 2016. “Patents, Standards and Borders: Addressing National Disparities among Holders of Standard-Essential Patents.” East-West Center Workshop on Mega-Regionalism - New Challenges for Trade and Innovation, 2016, Available at SSRN: https://ssrn.com/abstract=2726237 or http://dx.doi.org/10.2139/ssrn.2726237

Crémer, Jacques, Paul Heidhues, Monika Schnitzer, and Fiona Scott Morton. 2024. “Apple’s Exclusionary App Store Scheme: An Existential Moment for the Digital Markets Act.” VOXEU column, March 6, 2024. https://cepr.org/voxeu/columns/apples-exclusionary-app-store-scheme-existential-moment-digital-markets-act.

Crudgington, Andrew. 2023. “Could Standards Be Slowing Down Innovation in the Construction Industry?” News, September 28, 2023, BBA (British Board of Agrément). https://www.bbacerts.co.uk/news-and-media/news/could-standards-be-slowing-down-innovation-in-the-construction-industry/.

Das, Satya P., and Shabtai Donnenfeld. 1989. “Trade and Standards.” *Journal of International Economics* 26 (3–4): 299–318.

De Bruyn, Lorna-Lee, and Christopher Gibson. 2014. “Regulatory Standards as a Means of Creating a Barrier to Entry, The Case of the Competition Commission and Netstar Vehicle Tracking.” https://www.compcom.co.za/wp-content/uploads/2014/09/REGULATORY-STANDARDS.BARRIERS-TO-ENRTY-SUBMISSION.pdf.

DeVile, Jonathan. 2025. “European Commission Drops the EU Regulation on Standard Essential Patents.” IP Cases & Articles, February 13, 2025, D Young & Co Knowledge Bank. https://www.dyoung.com/en/knowledgebank/articles/european-commission-drops-sep-eu-regulation.

Disdier, Anne-célia, Carl Gaigné, and Cristina Herghelegiu. 2023. "Do standards improve the quality of traded products?." *Canadian Journal of Economics/Revue canadienne d'économique* 56, no. 4: 1238-1290.

Dolan, C., and John Humphrey. 2010. “Governance and Trade in Fresh Vegetables: The Impact of UK Supermarkets on the African Horticulture Industry.” *Journal of Development Studies* 37 (2): 147–76. https://www.tandfonline.com/doi/abs/10.1080/713600072.

Dolmans, Maurits. 2021. “FRAND Licensing Commitments–Back to First Principles.”

https://awards.concurrences.com/IMG/pdf/frand_-_back_to_first_principles_dec_2021_v4_.pdf?75111/8bd28345a756a3b899f91b26516dfeefda584ad8745e86e4e71d7520ef8b25c0.

EC (European Commission). 2011. "Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements." https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011XC0114(04)&from=EN.

EC (European Commission). 2024. "Commission Sends Preliminary Findings to Apple and Opens Additional Non-compliance Investigation against Apple under the Digital Markets Act." Press Release, June 23, 2024. https://ec.europa.eu/commission/presscorner/detail/en/ip_24_3433.

ECHA (European Chemicals Agency). 2020. "1 in 4 Imported Products Found to Be Non-Compliant with REACH and CLP." News, September 24, 2020, ECHA/NR/20/30. https://echa.europa.eu/-/1-in-4-imported-products-found-to-be-non-compliant-with-reach-and-clp.

ECOS (Environmental Coalition on Standards). 2024. *Moving to Performance-based Cement and Concrete Standards in Europe: What Lessons Can We Learn from Other Countries?* February 2024. Brussels: ECOS. https://ecostandard.org/wp-content/uploads/2024/02/2024-02_ECOS_PP_international-perspective-cement-concrete-standards.pdf.

Ezrene, Sera. 2012. "Buyer Power in the Context of Private Label in the EU: Accompanied with a Special Reference to the UK's Approach." In Global Antitrust Review 2012, 106–37. https://www.qmul.ac.uk/icc/media/icc/gar/gar2012/GAR-2012_3_Sera-Erzene.pdf.

Fangda Partners. 2024. "Key Takeaways of China's New Antitrust Guidelines for Standard Essential Patents." November 13, 2024. https://awards.concurrences.com/IMG/pdf/key-takeaways-of-chinas-new-antitrust-guidelines-for-standard-essential-patents.pdf?132139/3365f5a849a53d57b1ed7ca02da7081ae1b2e195d11a262fd96b21a8098afbd0, 2024.

Fernandes, Victor Oliveira. 2023. "Brazil's CADE Demonstrates How Antitrust Authorities Can Pursue Sustainability Goals. Promarket, August 2, 2023. https://www.promarket.org/2023/08/02/brazils-cade-demonstrates-how-antitrust-authorities-can-pursue-sustainability-goals/.

Fisher, Ronald, and Pablo Serra. 2000. "Standards and Protection." *Journal of Industrial Economics* 48 (2): 199–223.

Fontagné, Lionel, Gianluca Orefice, Roberta Piermartini, and Nadia Rocha. 2015. "Product Standards and Margins of Trade: Firm-Level Evidence." *Journal of International Economics* 97 (1): 29–44.

Gaigné, Carl, and Bruno Larue. 2016. "On the Impact of Public Quality Standards on Trade and Welfare." *European Review of Agricultural Economics* 43 (1): 15–45.

Global Cement. 2014. "Cement Producers Take Legal Action against Standards Organization of Nigeria." News, June 3, 2014. https://www.globalcement.com/news/item/2550-cement-producers-take-legal-action-against-standards-organisation-of-nigeria.

Gorton, Matthew, Vlade Zarić, Philip Lowe, and Steve Quarrie. 2011. "Public and Private Agri-Environmental Regulation in Post-Socialist Economies: Evidence from the Serbian Fresh Fruit and Vegetable Sector." *Journal of Rural Studies* 27 (2): 144–52.

Graffham, Andrew, Emma Karehu, and John MacGregor. 2007. "Impact of EurepGAP on Small-Scale Vegetable Growers in Kenya." Fresh Perspectives, Volume 4, International Institute for Environment and Development (IIED), London.

GreyB. 2024. "Who Owns Core 5G Patents? Essentiality Check on 5G Declared Patents." GreyB. https://www.greyb.com/blog/5g-patents/.

Guenioui, Katherine. 2014. “Court Ruling Urges SON to Stay Action on New Cement Standards in Nigeria. World Cement, September 26, 2014. https://www.worldcement.com/africa-middle-east/26092014/court-ruling-urges-son-to-stay-action-on-new-cement-standards-in-nigeria-557/.

Halabi, Sam F., and Ching-Fu Lin. 2017. “Assessing the Relative Influence and Efficacy of Public and Private Food Safety Regulation Regimes: Comparing Codex and Global GAP Standards.” *Food & Drug Law Journal* 72 (262): 262–94. https://scholarship.law.missouri.edu/cgi/viewcontent.cgi?article=1655&context=facpubs.

Henson, Spencer, and John Humphry. 2009. “The Impacts of Private Food Safety Standards on the Food Chain and on Public Standard-Setting Processes.” Paper prepared for FAO/WHO. https://openknowledge.fao.org/items/ef4a144c-4d81-4d91-8867-45ade2614fea.

ILOSTAT. Various years. Statistics on Safety and Health at Work (database). International Labour Organization.

Joint FAO/WHO Food Standards Program, Codex Alimentarius Commission. 2009. “The Impacts of Private Food Safety Standards on the Food Chain and on Public Standard-Setting Processes.” Thirty-second session, Rome, 29 June–4 July 2009. United Nations Food and Agriculture Organization (FAO) and World Health Organization (WHO).

Jones Day. 2024. “Chinese Antitrust Enforcement Agency Issues Warning Letter to Patent Pool.” Insights, July 2, 2024. https://www.jonesday.com/en/insights/2024/07/chinese-antitrust-enforcement-agency-issues-warning-letter-to-patent-pool.

Karakulak, Özge Atılgan, and Beste Turan Kurtoğlu. 2022. “Recent Developments & Turkey’s Position on SEPs: Navigating The Technology-Driven World.” Updates, Patents and Utility Models, March 16, 2022, Gün + Partners. https://gun.av.tr/insights/articles/ recent-developments-turkey-s-position-on-seps-navigating-the-technology-driven-world#:~

Kotzen, Bronwynn. 2024. “Standard Substitution and the Politics of Cementing Equivalence.” Society for Cultural Anthropology, November 12, 2024. https://culanth.org/fieldsights/standard-substitution-and-the-politics-of-cementing-equivalence.

Kuhlmann, K. A., T. Francis, I. Thomas, and P. Schreinemachers. 2023. “Laws and Regulations Enabling and Restricting Africa’s Vegetable Seed Sector.” *International Journal of Agricultural Sustainability* 21 (1): 2210005. https://www.tandfonline.com/doi/full/10.1080/14735903.2023.2210005#abstract.

Lehne, Johanna, and Felix Preston. 2018. *Making Concrete Change: Innovation in Low-carbon Cement and Concrete.* Chatham House Report.

https://www.chathamhouse.org/2018/06/making-concrete-change-innovation-low-carbon-cement-and-concrete Li, Yang Bing. 2016. “Antitrust Correction for Qualcomm’s SEPs Package Licensing and Its Flexibility in China.” *International Review of Intellectual Property and Competition Law* 47: 336–51.

Liu, Psacal. 2009. “Private Standards in International Trade: Issues and Opportunities.” Paper presented at the WTO Workshop on Environment-Related Private Standards, Certification and Labeling Requirements, July 9, 2009, Geneva. Food and Agriculture Organization (FAO). https://www.fao.org/fileadmin/templates/est/AG_MARKET_ANALYSIS/Standards/Private_standards Trade_Liu_WTO_wkshp.pdf.

Lowitt, Sandy. 2020. Towards The Decarbonisation of the South African Cement Industry: Opportunities And Challenges. Trade & Industrial Policy Strategies (TIPS), July 2020.

Macedoni, Luca, and Ariel Weinberger. 2022. "Quality heterogeneity and misallocation: The welfare benefits of raising your standards." *Journal of International Economics* 134 (2022): 103544.

Mail&Guardian. 2010. “Tracking Companies Guilty of Anti-competitive Behaviour.” Article, April 19, 2010. https://mg.co.za/article/2010-04-19-competition-tribunal-finds-tracking-companies-anticompetitive/.

Marette, Stéphan. 2018. “Standards, Protection and Market Power.” *World Trade Review* 17 (2): 313–35.

Maskus, Keith, Tsunehiro Otsuki, and John Wilson. 2013. “Do Standards Promote Trade and Competition? Evidence from Firm-Level Data in Developing Countries.” *World Bank Economic Review* 27 (2): 354–79.

Miralles, Graciella, and Emma Ngoga. 2025. *Competition Policy for Sustainability: Enforcement Options for Policymakers.* Washington, DC: World Bank Group. Unpublished.

Myers, Phil, and Steven Pepe. 2024. “Why It Is Patently Wrong to Underestimate SEPs’ Importance in Emerging Markets.” *Managing IP*, November 21, 2024. https://www.managingip.com/article/2e1lps01yab8vdogzp9mo/sponsored-content/why-it-is-patently-wrong-to-underestimate-seps-importan ce-in-emerging-markets.

Nigerian Communications Commission. 2019. Draft Guidelines on the Use of Television White Spaces, 2019

Nyman, Sara, and Tania Begazo. 2025. “Competition Policy in the Digital Economy: New Rules Shaping Competition in Digital Platform Markets.” Unpublished.

OECD (Organisation for Economic Co-operation and Development). 2011. “Standard Setting: Key findings, summary and notes.” OECD Roundtables on Competition Policy Papers. 8 March 2011. https://www.oecd.org/en/publications/standard-setting_8b423811-en.html

Okechukwu Innocent, Eme, Chukwuma Nnaemeka, and Christian Ezeibe. 2016. “Cement Classification in Nigeria: The Prospects for the New Standardisation Policy.” *Specialty Journal of Politics and Law* 1 (1): 1–13. https://sciarena.com/article/cement-classification-in-nigeria-the-prospects-for-the-new-standardisation-policy.

Rattel, Facundo, Kalvin Bahia, and Winnie Wambugu. 2024. *The Impact of Mobile Money Interoperability on Financial Inclusion: Evidence from Five Country Case Studies.* GSMA.

Rouse. 2025. “Interpreting FRAND in Southeast Asia–New SEP Battle Grounds.” Insights, February 4, 2025, Rouse. https://rouse.com/insights/news/2025/standard-essential-patents-in-southeast-asia-interpretation-of-frand-commitments-in-new-sep-battle-grounds.

Subervie, Julie, and Isabelle Vagneron. 2012. “Adoption of Sustainable Farming Practices: Evidence from Madagascar’s Lychee Producers.” *World Development* 40 (62): 1185–98.

Swanson, Daniel G., and William J. Baumol. 2005. “Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power. *Antitrust Law Journal* 73 (1): 1–58.

Uganda, Ministry of Agriculture, Animal Industry, and Fisheries. 2023. National Seed Policy, October 2018. https://www.agriculture.go.ug/wp-content/uploads/2023/01/National-Seed-Policy.pdf.

United Kingdom, CMA (Competition & Markets Authority). 2021. “Guidance: Environmental Sustainability Agreements and Competition Law.” Published 27 January 2021. https://www.gov.uk/government/publications/environmental-sustainability-agreements-and-competition-law/sustainability-agreements-and-competition-law#use-a-fair-standard-setting-process.

United Kingdom, CMA (Competition & Markets Authority). 2024. *Digital Markets Competition Regime Guidance,* 19 December 2024. https://assets.publishing.service.gov.uk/media/6762f4f6cdb5e64b69e307de/Digital_Markets_Competition_Regime_Guidance.pdf.

USAID. 2019. “Unlocking Africa’s Mini-Grid Market: Draft Final Report”. November 2019 http://mmeipa.africa-eu-energy-partnership.org/sites/default/files/2020-12/11976STC-TTIIET%20%28II%29%20_E.pdf

Vandemoortele, Thijs, and Koen Deconinck. 2014. “When Are Private Standards More Stringent than Public Standards?” *American Journal of Agricultural Economics* 96 (1): 154–71. https://onlinelibrary.wiley.com/doi/10.1093/ajae/aat064#:~:text=The%20authors%20show%20that%20such%20strategic%20differentiation,may%20also%20serve%20to%20preempt%20government%20regulations.

Vander Stichele, Myriam, and Bob Young. 2009. “The Abuse of Supermarket Buyer Power in the EU Food Retail Sector: Preliminary Survey of Evidence.” AAI (Agribusiness Accountability Initiative), Amsterdam. https://www.somo.nl/wp-content/uploads/2009/03/The-Abuse-of-Supermarket-Buyers-Power-in-the-EU-Food-Sector.pdf.

Visedo, Gonzalo, and Marcelo Pecchio. 2019. *Cement Technology Roadmap–Carbon Emissions Reduction Potential in the Brazilian Cement Industry by 2050*. Rio de Janeiro: SNIC. http://snic.org.br/assets/pdf/roadmap/cement-technology-roadmap-brazil.pdf.

Wambwa, Davies, Jhonnah Mundike, and Brian Chirambo. 2023. “Environmental Protection Fund Audits in Zambia: A Strategy for Ensuring Regulatory Compliance in Zambia's Mining Sector.” *Extractive Industries and Society* 16 (December): 101353.

Wen, Wen, Chris Forman, and Sirkka L. Jarvenpaa. 2022. “The Effects of Technology Standards on Complementor Innovations: Evidence from the IETF.” *Research Policy* 51 (6): 104518.

WTO (World Trade Organization). 2022. Committee on Technical Barriers to Trade, Minutes of the Meeting of 13–15 July 2022. G/TBT/M/87, 30 September 2022. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/TBT/M87.pdf&Open=True

WTO (World Trade Organization). 2024. Committee on Technical Barriers to Trade, Minutes of the Meeting of 13–15 March 2024. G/TBT/M/92, 24 May 2024. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/TBT/M92.pdf&Open=True

Yu, Hui, and Zohra Bouamra-Mechemache. 2016. “Private Standards, Price Formation and Market Power in Food Chains.” *European Review of Agricultural Economics* 43 (1): 31–54.

Zhan, Hao, and Ying Song. 2023. “The Chinese Supreme People’s Court Overturns the Judgment of the Court of First Instance, Holding that the Conduct of a Specialty Steel Manufacturer Did Not Constitute an Abuse of Market Dominance (Hitachi Metals).” *e-Competitions* December 14, 2023, Article N° 117739. https://www.concurrences.com/en/bulletin/news-issues/december-2023/the-chinese-supreme-people-s-court-overturns-the-judgement-of-the-court-of?utm_idc_source=newsletter.