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# Introduction: The LCR Phenomenon

In the wake of the Great Recession of 2008–09, economists feared that protectionist policies might sweep the globe, echoing the wave of tariff escalation launched by the Smoot-Hawley tariff in the Great Depression of the 1930s. This time around, however, officials were far more restrained, largely avoiding traditional forms of protection (tariffs and quotas), and instead favoring opaque behind-the-border nontariff barriers (NTBs). These barriers to trade take many different forms, including difficult customs procedures, unreasonable standards (such as arbitrary packaging and labeling requirements), and direct government subsidies.

This Policy Analysis seeks to illuminate the use of local content requirements (LCRs), a form of NTB that has enjoyed growing popularity in the aftermath of the Great Recession. The line dividing LCRs from other forms of protection is not clear cut. All forms of protection discriminate against foreign goods, services, or investment and thereby favor their domestic counterparts. But LCRs have distinctive characteristics. The domestic preference is not expressed in terms of tariff lines but rather in terms of projects or firms.

To illustrate, ad valorem tariffs are expressed as a percentage duty on import value for each 8-digit Harmonized System (HS) line; sanitary and phytosanitary standards and technical barriers to trade are enumerated for very specific products. By contrast, LCRs are often expressed as a percentage of a project that must be supplied by local firms (akin to a quota) or as a subsidy available only to local firms. The closest LCRs to ad valorem tariffs are those that confer a price preference on domestic suppliers (e.g., 25 percent by comparison with the best foreign bid). LCRs are also expressed in terms of the domestic nationality of firms that are allowed to import certain items

or invest in certain firms or sectors of the economy, which might be called a local ownership requirement. Unlike tariffs and quotas, LCRs are seldom announced in the national tariff schedule. Instead they are the object of separate legislation, for example, as part of a public expenditure program (such as road and port construction) or a financing program (such as official export loans). In this dimension, LCRs are similar to sanitary and phytosanitary standards and technical barriers to trade.

Regional parallels to national LCRs are present in nearly all free trade agreements (FTAs)—namely, rules of origin for trade in goods (and sometimes services). Rules of origin are also a prominent feature of the Generalized System of Preferences (GSP), under which advanced countries permit duty-free entry of limited quantities of goods from developing countries. Rules of origin are designed to ensure that a large percentage of the duty-free (or quota-free) value in goods or services circulated between regional partners (or arriving from developing countries) originates within the preferential trade area. The global costs of restrictive rules of origin very likely exceed the costs of LCRs, especially as the number of FTAs notified to the World Trade Organization (WTO) now exceeds 350, and 9 countries in the Organization for Economic Cooperation and Development (OECD)—counting the European Union as one country—have implemented GSP schemes. A rich body of literature exists on rules of origin; we leave their analysis to other scholars.

Historically, LCRs have been used in different contexts. Since 2008, the dominant motivation has been the simple but powerful appeal to create jobs at home rather than abroad. In an earlier era, the same appeal proved irresistible: The United States enacted its first Buy American statute in 1933, shortly after Congress passed the infamous Smoot-Hawley tariff of 1930. When the subprime financial crisis struck the US economy in 2008, sending shock waves across the world, many countries imposed LCRs. Congress tacked a Buy America provision on the American Recovery and Reinvestment Act (ARRA) of 2009 (the giant \$787 billion fiscal stimulus bill), and other countries did likewise.

In these cases, government procurement and government-financed projects served as LCR transmission mechanisms. But high unemployment and stimulus spending are not the only LCR drivers. Infant industry arguments are often deployed to favor local firms, especially by developing countries entering high-tech sectors such as information technology and renewable energy.

A related motivation is the desire to ensure that local firms get a slice of the purchases arising from major investments and new business created by large foreign or domestic firms. In good times and bad, public procurement serves as a natural target for LCRs—in fact, LCRs are the norm rather than the exception in public procurement. The original Buy American Act of 1933 and its offspring were amended from time to time but never repealed. Regulated industries, such as airlines, broadcast networks, utilities, and telecommunications companies, as well as elastically defined “important” firms or “strategic” industries, are often subject to domestic ownership requirements. When

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state-owned enterprises are privatized, only domestic firms and citizens are eligible to buy them; when an “important” firm, such as Unocal or the Potash Company of Saskatchewan, becomes a takeover target, foreign multinational corporations may be blocked from bidding on them—the fate of China National Offshore Oil Corporation (CNOOC) and BHP Billiton.

## Characteristics of LCRs

In one respect, classic LCRs bear a strong resemblance to import quotas: They use quantity rather than price signals to influence market outcomes. One big difference is that import quotas limit the quantity that can be purchased from foreign suppliers, whereas classic LCRs mandate the share that must be purchased from domestic suppliers. Another big difference is that when LCRs are tied to government-supported spending in a crisis, the political appeal of instantaneous job creation is powerful. Like quotas, LCRs are “off-budget,” and although they impose an economic cost on society at large, they do not entail a fiscal cost—another attractive feature from a political vantage point.

In contrast to price preferences for domestic firms (a less frequent but also classic LCR), as well as tariffs and subsidies, quantity signals have marketing advantages, beloved by LCR advocates. The cost imposed on purchasers (whether households or firms) is opaque at best, often totally hidden. International obligations, agreed to in the WTO and regional trade agreements, may not be clear cut with respect to quantitative LCRs. Quantitative requirements tied to government-supported spending do not violate the WTO Government Procurement Agreement (or a regional counterpart) unless the country has specifically committed to liberalize the activity in question. LCRs tied to services seldom conflict with obligations scheduled in the General Agreement on Trade in Services (GATS), because for the most part those commitments are narrowly limited to preexisting market access enjoyed by foreign service providers.

In the wake of the Great Recession, countries considered or implemented more than 100 new LCRs. Several of them depart from the classic format of mandated purchases or price preferences for domestic suppliers and instead mix price and quantity signals. The LCR forms observed since January 2008 include the following:

- classic mandatory LCR percentages for goods or services,
- tax, tariff, and price concessions conditioned on local procurement,
- import licensing procedures tailored to encourage domestic purchases of certain products,
- certain lines of business that can be conducted only by domestic firms, and
- data that must be stored and analyzed locally or products that must be tested locally.

Table 1.1 identifies advanced and developing countries that have imposed LCRs since January 2008 and compares them with the average for all advanced or developing countries. The number of LCR cases since 2008 is an important indicator of how often policymakers invoke LCRs to address economic problems (unemployment, strategic sector development, etc.). However, the number of cases in any given country does not necessarily indicate their significance. For example, although Mongolia has only one recorded LCR since 2008, it could restrict foreign investment in mining and therefore has the potential to affect projects that far exceed the annual GDP of the entire country.

Table 1.1 shows that LCR-using countries have larger than average GDPs (not surprisingly) and consequently are less reliant on foreign trade and investment as a share of GDP. Because these countries are somewhat less engaged in the global economy than their peers, and have a wider array of local suppliers, they may be less mindful of the costs associated with LCR policies, and the costs are probably much lower than they would be in a smaller country.

Reflective of the spread and magnitude of LCRs is the Latin American Local Content Forum 2012, held July 23–25, 2012, in Rio de Janeiro. The advertisement for the forum read as follows:

With 12.86 billion barrels of oil to extract off the coast of Rio de Janeiro, what is the best way forward to get this done on time and budget, while building a competitive workforce and supply chain?

Discover all you need to know to meet your certification requirements, develop fool-proof systems and processes to measure and manage local content across your supply chain and discover how the regulatory updates to investment reporting and certification will impact you.

The Latin American Local Content Forum in November 2011 brought together over 100 [of] Latin America's regulators, NOCs [national oil companies], IOCs [international oil companies] and domestic and international suppliers to take part in key discussions on the future of Local Content in Latin America—where it is and where it is heading.

Getting to the heart of the regulatory, certification, and systems and processes challenges when trying to comply with Local Content will be central to the program in 2012.

## **Why LCRs Are Bad Policy**

LCRs enacted in the aftermath of the Great Recession have two great attractions: They provide instant jobs to unemployed workers, and they give immediate gratification to the sponsoring politician. Other policies can provide more jobs at lower cost, and with less damage to the system, but they require discipline and deliver results only over the long term.

Of course, LCRs are not enacted solely as palliatives for unemployment. Their supporters find numerous justifications, running from the infant industry argument to national ownership sentiments.

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**Table 1.1 Comparative statistics for countries that impose LCRs, 2008 to present**

Country	Number of LCR cases since 2008	GDP, 2010 (billions of US dollars)	Total two-way goods and services trade, 2010		Inward FDI stock, 2010 (billions of US dollars at current exchange rates)	Inward FDI stock, 2010 (percent of GDP)
			Billions of US dollars at current prices	Percent of GDP		
<b>Advanced economies<sup>a</sup></b>						
Australia	7	1,132	511	45	508	45
Canada	5	1,577	948	60	561	36
France	2	2,560	1,409	55	1,008	39
Greece	1	301	143	48	34	11
Korea	2	1,014	1,073	106	127	13
Switzerland	2	528	493	93	539	102
United States	14	14,587	4,137	28	3,451	24
Average of advanced economies with LCR cases	5	3,100	1,245	62	890	38
Average of all other advanced economies	0	905	650	72	321	84
<b>Developing and other economies</b>						
Argentina	8	369	151	41	87	24
Azerbaijan	1	52	39	75	10	19
Botswana	1	15	12	78	1	9
Brazil	15	2,088	483	23	473	23
China	10	5,927	3,335	56	579	10
Egypt	1	219	116	53	73	34
India	9	1,727	809	47	198	11

*(table continues next page)*

**Table 1.1 Comparative statistics for countries that impose LCRs, 2008 to present** *(continued)*

Country	Number of LCR cases since 2008	GDP, 2010 (billions of US dollars)	Total two-way goods and services trade, 2010		Inward FDI stock, 2010 (billions of US dollars at current exchange rates)	Inward FDI stock, 2010 (percent of GDP)
			Billions of US dollars at current prices	Percent of GDP		
Indonesia	12	707	335	47	122	17
Kazakhstan	5	149	105	70	81	55
Kenya	2	32	22	68	2	7
Mexico	1	1,036	645	62	327	32
Mongolia	1	6	7	117	4	67
Nigeria	2	203	151	75	60	30
Paraguay	1	18	17	91	3	17
Russia	5	1,480	766	52	423	29
Saudi Arabia	1	435	419	96	170	39
South Africa	3	364	207	57	132	36
Tanzania	1	23	16	70	8	35
Turkey	2	734	82	11	182	25
Uganda	1	17	9	53	6	34
Ukraine	2	138	141	102	58	42
Average of developing economies with LCR cases	4	749	375	64	143	28
Average of all other developing economies	0	44	47	105	18	40

a. IMF designations for “advanced economies,” available at [www.imf.org/external/pubs/ft/weo/2008/02/weodata/groups.htm#ae](http://www.imf.org/external/pubs/ft/weo/2008/02/weodata/groups.htm#ae).

Sources: Number of LCR measures drawn from table A.1 in appendix A; GDP and trade data from World Bank, World Development Indicators database, <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>, and World Trade Organization statistics database, <http://stat.wto.org/Home/WSDBHome.aspx>; foreign direct investment data (FDI) data from UNCTADStat database, <http://unctadstat.unctad.org/>.

In an early paper, Gene M. Grossman (1981) identifies some of the weaknesses of LCRs. Other problems have become apparent as LCRs have become more widespread:

- The extent of assistance to the local activity is highly variable. Some LCRs are mere window dressing, with no protective effect, because local firms are already the low-cost supplier. Others have a tariff equivalent impact of 100 percent or more, because few local suppliers can supply the requisite good or service. Government officials often have no clue as to the effectiveness of the LCR.
- LCRs are particularly nontransparent. In nearly all instances, no cost entry shows up in budget accounts. The price impact on downstream producers may be all but impossible to calculate, especially for people not intimately familiar with the industry. Consequently, it is difficult or impossible for responsible legislators and officials to assess the cost and benefits of LCRs.
- In some circumstances, LCRs create unnecessary delays and raise costs. This is particularly true of LCRs applied to major infrastructure projects, such as renewable energy, waterworks, roads, ports, and telecommunications.
- LCRs are susceptible to corruption and playing favorites, especially when local producers and investors are few in number. All government policies are vulnerable to corruption and favoritism, but in the realm of trade and investment policy, LCRs seem particularly susceptible.
- LCRs seldom contain a “sunset” provision, and, with the exception of the WTO Government Procurement Agreement and parallel provisions in some regional trade agreements, many of them are never subject to removal through international negotiations.

## **Motives behind and Effects of LCRs**

An extensive literature analyzes the impact of LCRs on domestic production, trade, and investment, with an eye toward price and welfare effects. As a non-tariff barrier, LCRs distort the input decisions of producers and increase the costs for importers (Deardorff and Stern 1997). But measuring their net effects is seldom straightforward. Research suggests that the impacts depend on market conditions. Moreover, LCRs can not only lead to inefficient outcomes but also fail to achieve policy objectives—whether to increase industrywide domestic value added, promote competitive indigenous industries, or shield domestic suppliers through procurement favoritism. As a result, the impact of LCRs, like many other performance requirements, is “at best uncertain, and at worst negative” (Balasubramanyam 2001).

The seminal analysis by Grossman (1981) assesses the effects of LCRs on resource reallocation using a partial equilibrium model and assuming perfect

competition.<sup>1</sup> It shows that, unlike tariffs, LCRs offer a degree of protection that is “variable and difficult to predict.” Grossman (1981) shows that specific price effects of LCRs depend largely on factor use, input substitution, and market structure. He concludes that LCRs may not succeed in achieving the objectives of policymakers. Indeed, he writes, LCRs implemented to increase domestic value added in an industry can easily have the opposite effect. Although LCRs increase the demand for domestic intermediate goods, this boost to domestic value added can be partially or fully offset by a concomitant decrease in final goods production, because the price of final goods will rise. In turn, this effect leads purchasing firms to substitute other inputs, such as labor, for higher-cost intermediates. On balance, whether domestic value added rises or falls following the imposition of LCRs depends on input substitution and the price elasticity of final demand. Furthermore, in the case of monopolistic firms, LCRs allow domestic producers of intermediates to exercise monopoly power (reduce output and raise prices). Thus, LCRs may even fail to induce domestic production of intermediates—a necessary prerequisite for “dynamic gains from learning.” This possibility undercuts the common infant industry justification for LCRs.

Michael Mussa (1984) analyzes the impact of LCRs when inputs are imperfect substitutes and the industry has monopolistic characteristics. His analysis confirms that LCRs distort production and diminish incentives for technical efficiency. But, he argues, as an alternative to tariffs, LCRs could serve as a second-best policy instrument, because they avoid the consumption distortion created by a tariff.<sup>2</sup>

Kala Krishna and Motoshige Itoh (1988) consider LCRs in an oligopolistic industry. They conclude that they decrease the profits of suppliers of domestic intermediate goods when inputs are complements in demand but increase them when inputs are substitutes.

A common finding from the academic literature is that the impact of LCRs depends critically on assumptions about industry structure: Although LCRs unambiguously distort production and reduce welfare in perfectly competitive markets, other outcomes are more likely in imperfectly competitive markets.<sup>3</sup> In the case of oligopolistic industries, LCRs shift rents and producer surplus to the host country of foreign direct investment (FDI). In the most

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1. The analysis considers local content schemes in both physical terms (i.e., the proportion of domestic intermediate goods required in final goods production) and value-added terms (i.e., the minimum value of domestic intermediate goods required in the final good), as well as content preference programs (e.g., preferential rules of origin for developing countries).

2. However, Mussa (1984, 13) concludes that “diminished incentives for improvements in technical efficiency that save on domestic inputs provides a serious argument against the use of content protection to provide temporary protection for infant industries or mature industries that need to regain international competitiveness.”

3. These differences stem from the contest between the neoclassical framework of perfect competition and the strategic trade framework of oligopoly and imperfect competition. For an overview of both theoretical and empirical studies on LCR outcomes (and other performance requirements) that build on these two schools of thought, see UNCTC (1991).

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effective cases, LCRs shift rents and surplus to firms that can take advantage of “increasing returns to scale” and “dynamic gains from learning” (UNCTC 1991).<sup>4</sup> In particular, the potential benefit from spillover effects has been central to the debate over the merits of LCRs, and other trade-related investment measures (TRIMs), as tools for development.

LCRs fit into the broad category of performance requirements within TRIMs, namely, “trade policy measures that affect the volume, sectoral composition and geographical distribution of foreign direct investment” (WTO and UNCTAD 2002).<sup>5</sup> Imposing LCRs on foreign investors is often framed as a means of building competitive indigenous industries by enhancing “industrial deepening” and “supplier creation” as well as creating “backward linkages” (Moran 1998, 41). However, LCRs are seldom the first-best tools for such objectives, for three reasons:

- LCRs are often redundant, in that they require firms to undertake operations they would have undertaken in the absence of LCRs (e.g., seeking local suppliers).
- LCRs should enable domestic producers to capture economies of scale and thereby penetrate global markets, but in most cases they merely insulate high-cost operations from competition and generate lags in the introduction of new technology.
- LCRs can raise production costs and deter inflows of “market-seeking and efficiency-seeking” FDI (UNCTC 1999, WTO and UNCTAD 2002). Indeed, empirical studies from the 1970s and 1980s that focus on industries in both developed and developing countries in which LCRs were concentrated (e.g., electrical, automobiles, chemicals, mining and petroleum) often find such outcomes.<sup>6</sup>

Following a general review of the evidence, Theodore H. Moran (1998, 43) concludes:

Attempts to “improve” the functioning of markets by imposing domestic content requirements on foreign firms generate technical, economic, managerial, and political-economic problems for the investors and for the host country. These problems interact in a perverse manner and tend to reinforce each other toward inefficiency and stasis rather than lead to some new level of dynamic learning, enhanced efficiency, or accelerated growth.

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4. Martin Richardson (1993), for example, uses general equilibrium modeling to show that effective LCRs can induce foreign firms to increase their domestic production of inputs and increase capital inflows to the host country. Sajal Lahiri and Yoshiyasu Ono (1998) use partial equilibrium modeling to assess the optimal policy combination of imposing a profit tax and LCR to compete for inward FDI. They argue that LCRs can have positive effects on employment and the price level depending on both the number and relative efficiency of domestic firms.

5. The United Nations Conference on Trade and Development (UNCTAD) uses this definition of TRIMs; there is no commonly accepted definition in the literature.

6. For a summary of empirical studies, see Moran (1998) and WTO and UNCTAD (2002).

In the case of LCRs in renewable sectors, creating green jobs and building a competitive industry are not the only objectives. In addition, countries seek social and environmental objectives relating to the twin challenges of energy security and climate change (IEA and World Bank 2013). Indeed, both energy security and the promise of green jobs have inspired the use of LCRs to support renewable energy generating capacity, particularly since 2008 (table 1.2).<sup>7</sup> Underlying the use of LCRs is the “political reality that high financial support for renewable programmes might not be publicly supported if there were no local benefits attached” (Kuntze and Moerenhout 2013, 34).

Recent research explores the effectiveness of LCRs in achieving economic and environmental objectives. Nic Rivers and Randy Wigle (2011) used partial equilibrium analysis to assess the economic impact of tying support for renewably generated electricity to LCRs in the case of wind power. They find that LCRs can reduce the production of renewable electricity, as well as the overall level of employment in the renewable energy industry in the short run. Joanna I. Lewis and Ryan H. Wiser (2007, 1846) evaluate the conditions for achieving successful localization in wind power and conclude that “policy incentives may need to be designed and targeted differently depending on the specific goals for localization.” The research consensus holds that LCRs must be “linked with other policies that support and catalyze learning” (Johnson 2013, 12). LCRs that are used as “indefinite protection subsidies” that preclude exposure to domestic and international competition will often result in insufficient incentives to invest in research and development (R&D) and innovation (Kuntze and Moerenhout 2013, 19). These authors offer a framework for determining the economic effectiveness of LCRs in renewable energy. The determinants include the size of the local market; the restrictiveness of LCRs; accompanying support measures, such as financial incentives; and innovation potential and technology knowledge. From their review of the evidence, they conclude that LCRs have increased domestic output under certain conditions, but they cannot say that LCRs added to innovative capacity. They conclude that countries “often fail to combine proper incentives and policies” (p. 31).<sup>8</sup>

LCRs are perhaps most commonly embedded in government procurement policies. Like TRIMs, these policies are based on industrial objectives, but they may also reflect national security concerns or socioeconomic objectives (e.g., protection of minority-owned or small and medium enterprises)

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7. The increasing incidence of LCRs in renewables spurred both a rise in allegations of WTO violations and the use of trade defense instruments (TDIs) against imported renewable components. Jonas Kasteng (2013, 3) reports that the European Union’s use of TDIs directed toward renewable energy sources such as solar and biofuels affected nearly €14 billion of imports, almost 75 percent of all TDI measures currently in place.

8. The build-up of China’s domestic wind industry has generally been seen as a success story for the infant industry argument and the transfer of technology through the use of LCRs combined with other policy measures. Its success has been attributed to the fact that many of the “effectiveness conditions” outlined here were met (see Kuntze and Moerenhout 2013).

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**Table 1.2 Incidence of LCRs in renewable energy**

<b>Country/province and technology</b>	<b>LCR percent (start year), LCR percent (2012)<sup>a</sup></b>	<b>Vertical cooperation and financial support</b>
China (wind)	20 (1996), 70 (2009)	Joint venture, Clean Development Mechanism, state tariffs, national tender requirement
Ontario (wind)	25 (2009), 50 (2012)	Feed-in tariff conditionality
Quebec (wind)	40 (2003), 60 (2012)	Tender requirement
Spain (wind)	70 (2012)	Market entry requirement (provincial), noncoupled feed-in tariff (national)
Turkey (wind)	Variable (2011)	Additional feed-in tariff / local content used
Brazil (wind)	60 (2002), 60 (2012)	Condition for subsidized Brazilian Development Bank loans
South Africa (wind)	35 (2011), >35 (2012)	Tender requirement
Ontario (solar)	50 (2009), 60 (2012)	Feed-in tariff conditionality
Italy (solar)	Variable (2011)	5 to 10 percent bonus / local content used
France (solar)	60 (2012)	10 percent bonus on Électricité de France repurchasing price
Turkey (solar)	Variable (2011)	Additional feed-in tariff / local content used
India (solar)	30 (2011), 30 (2011)	Feed-in tariff conditionality

a. LCR percent provided in 2012 or the latest year applicable.

Source: Kuntze and Moerenhout (2013, table 5).

(Evenett and Hoekman 2002).<sup>9</sup> LCRs and other discriminatory policies against foreign competitors introduced in the context of post-2008 stimulus packages were drivers of an overall decrease in the openness of government procurement markets. Patrick Messerlin (2013) calculates the “import penetration” ratios, the share of public imports to total demand for public goods and services. He shows that between 2008 and 2009, most countries saw their ratios decrease by more than 10 percent (table 1.3).

Robert Baldwin and J. David Richardson (1972) use a partial equilibrium model to analyze the impact of LCRs and discriminatory procurement policies on welfare and market access. They argue that government demand relative to domestic supply crucially affects outcomes: Only when government demand is greater than domestic supply will a procurement ban on foreign suppliers raise prices paid by the government and thus domestic output, causing a reduction in imports and welfare.

Simon J. Evenett and Bernard M. Hoekman (2002) extend this analysis and confirm that government demand is often too weak to affect market outcomes,

9. Studies that analyze these objectives show that procurement discrimination results in inefficient outcomes. Other studies find there may be an efficiency rationale in imperfectly competitive markets (McAfee and McMillan 1989, Branco 1994). For a concise overview of the literature, see Evenett and Hoekman (2002, 3–5).

**Table 1.3 Import penetration ratios for public procurement in selected countries, 1995–2009**

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	5.1	5.0	5.4	5.4	5.9	5.9	5.8	6.1	5.9	5.9	6.0	5.9	6.2	5.7	5.3
Brazil	2.1	2.0	2.1	2.1	2.7	3.1	3.5	3.5	3.3	3.3	3.1	2.9	3.0	3.3	2.8
Canada	4.2	4.3	4.6	4.9	5.1	5.1	5.0	4.9	4.7	4.7	4.9	4.6	4.6	4.8	4.8
China	3.8	3.1	3.3	2.8	3.0	3.4	3.3	3.6	5.5	5.5	5.6	5.7	5.2	7.9	6.1
EU-27 <sup>a</sup>	2.6	2.7	2.8	2.7	2.8	3.6	3.7	3.5	3.7	3.7	4.2	4.6	4.5	5.3	4.5
EU-2 <sup>b</sup>	2.2	2.2	2.4	2.3	2.3	2.8	3.1	2.9	2.8	3.0	3.4	3.8	3.9	4.3	3.5
India	4.2	4.4	4.0	4.4	4.5	4.4	4.0	3.5	4.6	4.6	5.8	6.3	6.3	6.2	5.7
Indonesia	7.9	7.8	7.9	13.9	9.3	11.4	11.6	9.5	9.9	9.9	10.6	8.9	8.8	8.8	6.1
Japan	1.9	2.2	2.3	2.1	2.0	2.3	2.3	2.4	2.8	2.8	3.2	3.8	4.2	5.3	3.5
Korea	7.5	7.5	8.4	8.1	7.7	9.6	9.3	8.9	9.7	9.7	9.9	9.9	10.2	13.9	11.2
Mexico	4.8	4.9	5.2	5.1	4.9	5.2	4.9	4.5	5.6	5.6	5.8	5.9	6.3	6.4	5.7
Russia	3.3	3.5	3.6	4.6	6.2	5.3	4.7	4.2	3.7	3.7	3.8	3.3	3.1	3.1	2.5
Taiwan	9.9	10.1	10.8	11.9	10.7	10.5	10.2	11.3	12.4	12.4	11.9	12.9	13.5	12.9	11.9
Turkey	5.4	7.3	6.5	5.2	4.4	5.8	7.2	8.3	8.8	8.8	9.5	11.3	10.9	13.0	9.5
United States	2.7	2.8	2.9	2.8	3.0	3.6	3.5	3.3	4.0	4.0	4.4	4.3	4.4	4.8	3.7
Rest of world	6.4	6.8	6.9	6.9	6.7	7.1	7.2	7.9	8.8	8.8	9.4	9.1	9.1	10.1	8.3
World	4.2	4.5	4.6	4.6	4.6	5.1	5.2	5.2	6.0	6.0	6.4	6.7	6.8	7.6	6.3

a. EU-27 ratios take into account only extra-EU public imports.

b. EU-2 ratios designate the sum of France and Germany and take into account only extra-EU public imports.

Note: Import penetration ratios measure the share of public imports to total expenditure on public goods and services.

Source: Messerlin (2013, table 2).

making discriminatory procurement policies ineffective in the short run. Moreover, they contend, given free entry by new firms, such policies are also ineffective in the long run. However, in such cases, “much of the adverse impact on market access may well not be reversed upon [subsequent] liberalization . . . the damage to market access will already have been done” (p. 20).

## **Pushback against LCRs**

The eruption of LCRs has not gone unnoticed by affected trading partners. The US Trade Representative (USTR) established the Trade Policy Staff Committee Task Force on Localization Barriers to Trade to develop a coordinated approach to LCR practices. The goal of the task force, established in mid-2012, is to raise the profile of the forced localization issue within the US government and to forge a common position so that US negotiators can engage trading partners on the problem. With this goal in mind, the USTR flagged LCRs as a growing problem at the Asia-Pacific Economic Cooperation (APEC) Senior Officials Meeting held in Surabaya, Indonesia, in April 2013. APEC officials were sufficiently concerned that they put LCRs on their agenda as a topic of discussion in subsequent meetings.

Meanwhile, three LCR cases are working their way through the WTO Dispute Settlement Body:

- In November 2012, China requested consultations with the European Union, Greece, and Italy regarding domestic content restrictions that affect renewable energy generation as a byproduct of the feed-in tariff programs of EU member states.
- In February 2013, the United States requested consultations with India concerning India’s LCRs and subsidies in the solar energy sector, specifically addressing the Jawaharlal Nehru National Solar Mission (JNNSM).
- In May 2013, the WTO Appellate Body sided with the European Union and Japan in ruling that LCRs within Canada’s renewable energy and feed-in tariff program violated WTO obligations.

Several WTO provisions seemingly limit or forbid LCR practices. In practice, they have important gaps. Four are worth flagging.

## **Article III of the General Agreement on Trade and Tariffs (GATT)**

The first paragraph of Article III on National Treatment on Internal Taxation and Regulation states:

The contracting parties recognize that internal taxes and other internal charges, and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products, and internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions, should not be applied to imported or domestic products so as to afford

protection to domestic production.\* [The footnote allows for reasonable exceptions for subfederal governments in a free trade area or customs union.]

The language is strong, and in past WTO cases, the national treatment obligation has been strictly interpreted. A key weakness, however, is that government procurement by federal and subfederal agencies is subject to Article III and other GATT provisions only to the extent scheduled in the WTO Government Procurement Agreement (GPA). Only 41 countries have signed on to the GPA (another 10 are currently negotiating accession). Their schedules often leave out more government procurement than they include, and the benefits run only to other GPA members.

## **WTO Agreement on Subsidies and Countervailing Measures**

The Agreement on Subsidies and Countervailing Measures (ASCM) enables any WTO member to bring a case when it suffers “adverse effects” from the subsidy practices of another WTO member. However, the ASCM definition of subsidies does not include all practices that economists might regard as subsidies, and the complaining country must provide evidence of an “adverse effect” on its own commercial interests. In the Canada wind turbine case (chapter 5), a majority of the three-member panel determined that the LCR, which was coupled with a preferential feed-in tariff for electricity, did not constitute a subsidy covered by the ASCM.

## **WTO Agreement on Trade-Related Investment Measures**

The TRIMs agreement contains strong language that seems to preclude the imposition of LCRs in connection with authorizing or incentivizing investment. The text is reinforced by an illustrative list that includes these examples (among others):

1. TRIMs that are inconsistent with the obligation of national treatment provided for in paragraph 4 of Article III of GATT 1994<sup>10</sup> include those which are mandatory or enforceable under domestic law or under administrative rulings, or compliance with which is necessary to obtain an advantage, and which require:
  - (a) the purchase or use by an enterprise of products of domestic origin or from any domestic source, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production; or
  - (b) that an enterprise’s purchases or use of imported products be limited to an amount related to the volume or value of local products that it exports.
2. TRIMs that are inconsistent with the obligation of general elimination of quantitative restrictions provided for in paragraph 1 of Article XI of GATT 1994<sup>11</sup> include those which are mandatory or enforceable under domestic law or under adminis-

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10. Article III of GATT 1994, [www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/gatt1994\\_02\\_e.htm#article3A4](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_02_e.htm#article3A4).

11. Article XI of GATT 1994, [www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/gatt1994\\_05\\_e.htm#article11A1](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_05_e.htm#article11A1).

trative rulings, or compliance with which is necessary to obtain an advantage, and which restrict:

- (a) the importation by an enterprise of products used in or related to its local production, generally or to an amount related to the volume or value of local production that it exports;
- (b) the importation by an enterprise of products used in or related to its local production by restricting its access to foreign exchange to an amount related to the foreign exchange inflows attributable to the enterprise; or
- (c) the exportation or sale for export by an enterprise of products, whether specified in terms of particular products, in terms of volume or value of products, or in terms of a proportion of volume or value of its local production.

The TRIMs text, along with other GATT provisions, was strictly enforced by the Dispute Settlement Body against Indonesia in the automobile case brought by the United States, the European Union, and Japan in 1996.<sup>12</sup> However, in the vast majority of cases, when a country couples investment incentives with LCRs, no one complains. The multinational firm receiving incentives quietly and happily complies, and its home government feels absolutely no pressure to raise an objection. Moreover, although TRIMs provide a theoretical answer to a large class of LCRs, the agreement applies only to goods, not to services.

## **WTO Government Procurement Agreement**

Buried in the National Treatment article of the 1947 GATT was an important exception: Article III(8)(a) excluded government procurement from coverage.<sup>13</sup> In 1994, government procurement was likewise carved out from the main commitments in the GATS.

As government procurement typically represents 10 to 15 percent of GDP, and LCRs go hand in glove with government procurement, these exclusions wall off a considerable amount of commerce—a fact that has prompted several editions of the GPA. The first GPA was signed in 1979, as part of the Tokyo Round. It was amended in 1987, and an enlarged GPA was signed in 1994 as part of the Uruguay Round. Further enlargements are under discussion in the current Doha Round.

All editions of the GPA are plurilateral agreements (included in Annex 4 to the Marrakesh Agreement), meaning that only parties to the GPA are

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12. Specifically, the Dispute Settlement Body ruled that Indonesia's LCRs and additional taxes and charges against imported vehicles violated most-favored nation treatment (GATT Article I) and national treatment (GATT Article III: 2); qualified as LCRs prohibited by Article 2 of the TRIMs agreement; and qualified as specific subsidies that caused "serious prejudice," thus violating Article 5(c) of the ASCM. For a summary of these key findings, see [www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/1pagesum\\_e/ds54sum\\_e.pdf](http://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds54sum_e.pdf).

13. John Jackson, the leading scholar of GATT jurisprudence, contends that government procurement was likewise excluded from the obligation of general most-favored nation treatment set forth in Article I (Jackson 1969, 291). This view is widely accepted. For details on the GPA, see [www.wto.org/english/tratop\\_e/gproc\\_e/gp\\_gpa\\_e.htm](http://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm).

bound by its rules and entitled to its benefits. This feature distinguishes the GPA from other WTO provisions that, to some extent, discipline the use of LCRs by all WTO members.

Through negotiations, parties to the GPA schedule their federal and sub-federal agencies, meaning that other parties are eligible to bid for the procurement conducted by these agencies. To that extent, the GPA eliminates LCRs as between the parties. However, because the GPA has only 41 signatories out of 159 members (mainly advanced countries, including 27 members of the European Union) and the schedules are parsimonious with respect to covered agencies and even then have numerous exceptions, by far the lion's share of government procurement remains outside the multilateral trading system and thus remains subject to discretionary LCRs.

## **Difficulties Enforcing WTO Provisions**

Beyond the technical difficulties of enforcing WTO provisions lie three central weaknesses of WTO disciplines against the eruption of LCRs. First, only WTO member governments have the legal standing to bring a case. Private firms that lose business because of LCRs must first convince their government that bringing a case is a worthwhile endeavor. Doing so is not easy. Second, bringing a WTO case is an arduous process for the complaining government in terms of time, money, and diplomatic relations. Third, WTO cases take two years or more to resolve, and WTO remedies offer no retroactive relief for the aggrieved firm. If a foreign firm loses a contract because of an LCR, no compensation will ever be paid, even if its own government wins in the WTO.

With the exception of the European Union, customs unions and FTAs currently offer few safeguards against LCRs. Although their legal provisions may well inscribe stronger limitations than the WTO, their dispute settlement provisions are generally weak. When Buy American restrictions were tacked on to ARRA in 2009, Canada discovered that provisions of the North American Free Trade Agreement (NAFTA) did not shield it from discrimination. It resorted to a somewhat unsatisfactory diplomatic settlement with the United States (see chapter 9).

## **Plan of the Book**

Chapter 2 describes six alternatives to LCRs that offer better economic results in the long run, although they may not have comparable political appeal in the short run. Chapter 3 summarizes our survey of worldwide LCR measures enacted or proposed since roughly January 2008. The survey itself, a lengthy spreadsheet, is presented in appendix A. Chapters 4 to 9 present six cases studies, which illustrate the use and costs of LCR measures and their impact on domestic and international markets. Chapter 10 offers conclusions and recommendations.