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Survey and Case Studies

Local content requirements (LCRs) are a protective device with three simple but powerful appeals: to create jobs at home rather than abroad; to nurture domestic firms so that they become world-class competitors; and to ensure that important industries, such as civil aviation, broadcasting, and electric power, are locally owned (these might be called local ownership requirements). Each appeal has variants that speak to particular conditions. For example, creating jobs at home seems like a natural corollary to public subsidies that support green energy. Nurturing domestic firms can have the added feature of helping disadvantaged groups (such as leatherworkers in Japan). Important industries have been elastically defined to include almost any state-owned enterprise on the verge of privatization (the Russian story) and iconic private firms subject to a foreign takeover bid (the Unocal story).

This book uses two approaches to size up and illustrate the LCR phenomenon. The first approach is a global survey of about 100 recent LCR episodes, basically instances identified since the onset of the US financial crisis in 2008, summarized in appendix A. Of course, LCRs predate the Great Recession. The norm for public procurement for at least 100 years has been preferential purchases from local firms. Both to make our task manageable and to keep a focus on contemporary trade and investment challenges, we surveyed only recent episodes.

The second approach is the compilation of six case studies. Case studies are, in a sense, anecdotes; their value is to illustrate larger phenomena. Ideally, case studies should be statistically representative of the phenomenon under consideration. We make no claim that our six cases are statistically

representative.[1] The cases were selected to illustrate the LCR phenomenon in both advanced and emerging economies, to cover several different industries, and to show the range of LCR policies, from highly explicit and transparent to highly implicit and opaque. LCRs in some cases are mixed with other policy goals, such as making select pharmaceuticals widely available at low cost (the Brazilian healthcare case). The six case studies are presented in chapters 4 to 9 in alphabetical order of the countries imposing the LCR.

Most of the LCRs described in the case studies were launched well before the Great Recession of 2008–09. Unlike the new LCRs covered in the survey (discussed in the next section), the earlier LCRs were not inspired primarily by the severe unemployment of a collapsing world economy. Instead, targeted job creation was mixed with other motives, often variants of the infant industry argument (present to some degree in the Brazilian healthcare, Canadian wind turbine, Chinese automobile, Indian solar power, and Nigerian oil and gas cases).

To size up the dimensions of this problem, we undertook a global screening of LCR mandates. The goal of this screen was to identify and list all LCRs enacted since the onset of the Great Recession. The analysis began with the Global Trade Alerts database (www.globaltradealert.org), coordinated by the Centre for Economic Policy Research in London and supported by the World Bank. The analysis built off that backbone by monitoring various sources around the globe. This research demonstrated that the proliferation of LCR policies is substantial and widespread.

Appendix A lists all LCR measures proposed or implemented since 2008 that we were able to identify, some 117 cases. Although some countries were more active and some industries more targeted, new LCR measures were found in all types of economies as well as virtually all industries. By case count, Brazil was the worst perpetrator, with 15 episodes, but LCRs are not limited to developing countries. Many measures have effects beyond trade flows, directly and indirectly affecting investment, services, and employment. The affected industries cover a wide range, including agriculture, healthcare, information technology, automobiles, and many others.

We analyzed each case based on the online information we could find. Of the 117 cases, about 47 were systemically quantifiable. These cases explicitly target a subset of products or services that are traded internationally. In these cases, the analysis identified all 4-digit Harmonized System (HS) codes affected by the measure. For example, Argentina implemented an "import balance" measure that requires automobile companies to maintain a neutral trade balance. This measure affected several sections of Chapter 85 of the HS (specifically, 8703, 8704, 8706, 8707, and 8708). We used common trade data sources, such the World Bank's World Integrated Trade Solutions (WITS), to quantify the affected trade flows.

1. Indeed, as work on our global survey was completed in parallel with work on the case studies, it would have been impossible to select in advance cases that represented the survey outcome.

Table 3.1 Estimated goods and services trade affected by LCR measures since 2008

LCR measure	Estimated affected goods and services trade (billions of dollars)[a]	Speculated estimate of trade reduced (billions of dollars)[b]
47 quantifiable measures	373	37
70 nonquantifiable measures[c]	555	56
117 total LCR measures	928	93

a. Cumulative trade figure calculated from table A.1 in appendix A.
b. The reduction in trade on account of LCRs—by contrast with the impact on trade—is a matter of greater speculation. As a conservative but speculative guess, we calculate reduced trade using an estimated tariff-equivalent of 10 percent ad valorem and assuming the elasticity of import demand for foreign goods as approximately –1.0.
c. For nonquantifiable LCR measures, the estimated affected trade was calculated by multiplying the 70 measures by the average of $7.9 billion affected trade per quantifiable LCR measure.

Note: Quantifiable LCR measures explicitly target a subset of products or services that are traded internationally and could be identified by 4-digit Harmonized System (HS) codes. By contrast, although most nonquantifiable LCR measures directly target trade flows, they could not be easily quantified, due to their opaque nature, vague wording, or nontransparent application.

Source: Authors' calculations.

Although by design, all of the LCRs negatively affect trade, the term "affecting" does not translate into a one-for-one reduction in trade. Future research might establish the tariff equivalents of these measures; doing so was beyond the scope of our work. Some researchers have begun to estimate the tariff equivalent of other nontariff barriers, but their work has focused primarily on the trade cost of deficient soft and hard infrastructure. Our analysis suggests that, taken together, the quantifiable LCRs affected more than $373 billion in goods and services trade flows (table 3.1), about 2 percent of total world trade in 2010 (the year when most measures were implemented).

In addition to the 47 cases that our analysis tried to quantify, we identified 70 cases that are not quantifiable, because of their opaque nature, vague wording, or nontransparent application. Many of these cases directly targeted trade flows: 10 limited or prohibited foreign investment; 23 limited services (the majority required firms to store all data in local data centers and prohibited firms from moving these centers abroad); and 4 limited foreign employment. These measures likely had spillover effects on trade flows. We assumed that the 70 cases had the same average impact as the more clearly targeted, or systemically quantifiable, cases. We believe this is a conservative assumption. Making this assumption, the analysis suggests that the 70 nonquantifiable cases adversely affected another $555 billion of trade (see table 3.1), about 3 percent of world trade in 2010.

Based on these assumptions, LCRs affected almost $928 billion in trade in 2010, about 5 percent of total global trade in goods and services ($18.5 trillion). The reduction in trade as a result of LCRs—by contrast with the impact on trade—is a matter of greater speculation. We do not have estimates on their

tariff-equivalent effect. As a conservative and speculative guess, we would say that the tariff equivalent is 10 percent ad valorem. Assuming that the elasticity of import demand for foreign goods is about –1.0, we speculate that the reduction in trade as a result of LCRs in 2010 may have been about $93 billion a year. This figure could be too high or too low. Whatever the correct estimate, there is no reason to think that the volume of trade lost in the years after 2010 is smaller, as very few LCRs have been withdrawn. In fact, according to the latest issue of the Global Trade Alert, the "body count" of new instances of protection (every category, including LCRs) in the fourth quarter of 2012 showed no decline from previous quarters (Evenett 2012).

Greater speculation is required to estimate the number of targeted jobs supported by cumulative LCRs since the beginning of 2008. Our estimates suggest that advanced economies imposed LCRs that negatively affected about $39 billion of trade (4 percent of the total), while the rest of the world (mainly developing countries) imposed LCRs that affected $889 billion of trade (96 percent) (see table 3.2). If our speculation as to the global reduction in trade is correct—roughly $93 billion—advanced economies may have cut targeted imports by $4 billion and the rest of the world may have cut targeted imports by $89 billion. In the Organization for Economic Cooperation and Development, the average number of jobs per billion dollars of GDP is 5,500; in the rest of the world the figure is 42,500. Based on these averages, LCRs may have supported 22,000 targeted jobs in advanced economies and 3.7 million targeted jobs in the rest of the world. Of course, policy support for targeted jobs does not translate into net employment gains, because foreign countries lose exports from "beggar-my-neighbor" LCRs and because domestic buyers (households and business firms) of more expensive products from LCR sectors experience a reduction in their own purchasing power.

Table 3.2 Estimated jobs affected by LCR measures since 2008

Country group	Estimated trade affected by 117 LCR measures (billions of dollars)[a]	Speculated estimate of trade reduced (billions of dollars)	Estimated jobs affected by LCR measures: Employees per billion US dollars value added in industry[b]	Estimated jobs affected by LCR measures: Estimated employees per billion US dollars in import-competing firms (halved)[c]	Estimated jobs affected by LCR measures: Speculated estimate of jobs affected by LCRs (thousands)[d]
Advanced economies	39	4	11,000[e]	5,500	22
Rest of world	889	89	85,000[f]	42,500	3,763
Total	928	93	—	—	3,784

a. Calculations of the estimated trade affected by 117 LCR measures by country group were based on the following: Advanced economies accounted for about 4 percent or $15.7 billion of the total trade affected by the 47 quantifiable LCR measures, namely $373 billion (see table 3.1). The rest of the world accounted for about 96 percent or $357.1 billion of the total trade affected by the 47 quantifiable LCR measures. These percentage shares were applied to the total estimated trade affected by all 117 LCR measures, namely $928 billion.
b. Value added in industry was used as the best estimate of GDP from tradables. Industry corresponds to International Standard Industrial Classification (ISIC) divisions 10 to 45 and includes manufacturing.
c. Values are halved to better estimate the higher labor productivity of import-competing firms.
d. Figures calculated by multiplying estimated trade reduced by the ratio of employees per billion US dollars in import-competing firms. Figures rounded to nearest thousand.
e. The ratio of employees per billion US dollars in import-competing firms for advanced economies is calculated as the average for countries in the Organization for Economic Cooperation and Development (OECD).
f. The ratio of employees per billion US dollars in import-competing firms for the rest of the world is calculated as the regional average for developing countries.

Note: Advanced economies comprise seven developed countries—Australia, Canada, France, Greece, Korea, Switzerland, and the United States—and account for a total of 33 LCR measures. The rest of the world comprises 21 developing and other countries and accounts for a total of 84 LCR measures.

Sources: Trade affected and trade reduced are from table 3.1; industry value added data from *World Bank, World Development Indicators* database, http://data.worldbank.org/indicator; employment data from International Labor Organization, *Global Employment Trends*, 2012, www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/ publication/ wcms_171571.pdf; estimated jobs affected from authors' calculations.