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bon-constrained future, improving regulatory control over emissions associated with poor vehicle maintenance, generating positive externalities by encouraging innovation, encouraging domestic development of strategic technical competency and intellectual property, reducing nonfinancial political and human suffering effects from war and political instability, and promoting international environmental justice. However, because HEVs and PHEVs with smaller battery packs provide more air-emissions reduction and oil displacement per dollar spent and offer lifetime costs competitive with conventional vehicles, it is not clear that directing near-term subsidies toward vehicles with large battery packs would produce superior results on any of these objectives.

We should not forget that the most efficient policies would target externalities directly, through mechanisms such as an economywide carbon price, cap-and-trade policies, and gasoline taxes. Such policies are generally understood to be far more efficient than technology-specific subsidies, and we should consider subsidies as an inferior substitute given the political difficulties of implementing efficient market-based policies that address the problem directly. In the absence of such policies, federal subsidies and policies designed to encourage electrified vehicle adoption would produce more benefit at lower cost for the foreseeable future by targeting the purchase of vehicles with small battery packs.

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U.S. Competitiveness: The Mexican Connection

A "giant sucking sound" was the memorable description made by presidential candidate Ross Perot during the 1992 campaign of the impact that the North American Free Trade Agreement (NAFTA) would have, as business and jobs moved from the United States to Mexico. The reality is that economic cooperation with Mexico has been a boon for U.S. industry and has strengthened the country's competitive position in ways that have produced broad economic benefits. Today, as China and other Asian countries have emerged as major economic challengers, expanding economic cooperation with Mexico is one of the best ways for the United States to improve its global competitiveness.

Regional integration between the United States and Mexico is already vast and deep. As the United States' second largest export market and third largest trading partner, Mexico is clearly important to the U.S. economy. Merchandise trade has more than quintupled since NAFTA went into effect in 1994, and in 2011, bilateral goods and services trade reached approximately a half-trillion dollars for the first time. The U.S. Chamber of Commerce has calculated that the jobs of six million American workers depend on U.S.-Mexico trade. Many of those jobs are in border states, which have especially close ties to Mexico, but Mexico is also the top buyer of exports from states as far away as New Hampshire (mostly computers and electronics). In fact, 20 states, from Michigan to Florida, sell more than a billion dollars' worth of goods to Mexico each year, and Mexico is the first or second most important export market for 21 states.

The United States and Mexico are also major investors in one another. In fact, combined foreign direct investment holdings now total more than $100 billion. According to the most recent count by the Department of Commerce, U.S.-owned companies operating in Mexico created $25 billion in value added and employed nearly a million workers. Mexican investment in the United States is less than U.S. investment in Mexico, but it is has been growing rapidly in recent years. Several of Mexico's top companies, which

SVEN PÅHLSSON, *Bending Water*, 3D animation; 50:00 minutes, 2007.

are increasingly global operations, have made significant investments in the United States. Mexico's Cemex, for example, is North America's largest maker of cement and concrete products. Grupo Bimbo, which owns well-known brands such as Entenmanns's, Thomas's English Muffins, and Sara Lee, is the largest baked goods company in the Americas. Even Saks Fifth Avenue and the New York Times Company are supported by significant Mexican investment.

The massive volume of commerce and investment is important, but the depth of regional integration is the primary reason why Mexico contributes to U.S. competitiveness. Mexico and the United States do not just trade products, they build them together. In fact, to understand regional trade, it is necessary to view imports and exports in a different light. Whereas imports from most of the world are what they appear to be—foreign products—the same cannot be said of imports from Mexico. During production, materials and parts often cross the southwest border numerous times while U.S. and Mexican factories each perform the parts of the manufacturing process they can do most competitively. Because of the complementary nature of the two economies, close geographic proximity, and NAFTA, which eliminated most tariff barriers to regional trade, the U.S. and Mexican manufacturing sectors are deeply integrated.

Demonstrating this integration is the fact that 40% of the value of U.S. imports from Mexico comes from materials and parts produced in the United States. This means that 40 cents of every dollar the United States spends on Mexican goods actually supports U.S. firms. The only other major trading partner that comes close to this amount is Canada, the United States' other NAFTA partner, with 25% U.S. content. Chinese imports, on the other hand, have an average of only 4% U.S. content, meaning that the purchase of imports from China does not have the same positive impact on U.S. manufacturers.

The regional auto industry is a good example of this production-sharing phenomenon. The United States, Mexico, and Canada each produce and assemble auto parts, sending them back and forth as they work together to build cars and trucks. Cars built in North America are said to have their parts cross the United States borders eight times as they are being produced, and between 80 and 90% of the U.S. auto industry trade with its North American partners is intra-industry, both of which signal an extremely high level of vertical specialization. As a result, Detroit exports more goods to Mexico than any other U.S. city, and the North American auto industry has proven much more resilient than many expected. Although several of North America's largest automakers nearly collapsed during the financial crisis in 2008 and 2009, a robust recovery is now under way. Mexico and the United States have each experienced the sharpest rise in vehicle production of the world's top 10 auto producers during the past two years, growing 51 and 72%, respectively, between 2009 and 2011.

From competitors to partners

The United States and Mexico once worked relatively inde-

pendently to manufacture goods and export them, but now they work together to produce goods that are sold on the global market. With their economies so intimately linked, the United States and Mexico now experience the cycle of growth and recession together. If they ever were economic competitors, it is clear that they have now become partners that will largely sink or swim together. Because they are in the same boat, the United States and Mexico should develop a joint strategy to increase regional competitiveness vis-à-vis the rest of the world.

The groundwork is already laid, and several recent trends are in North America's favor. To begin with, Mexico and the United States are among the most open economies in the world. Through their extensive networks of free trade agreements, the two countries have tariff-free access to more than 50 countries, including the large economies of the European Union and Japan. This presents a tremendous opportunity for jointly produced goods to be exported around the world, something that could create jobs and improve the trade balance of the United States. The key, of course, is getting costs sufficiently low and productivity sufficiently high that North American goods are competitive with their European and Asian competitors.

Labor costs in China are rising while oil prices are increasing transportation costs, and new advanced manufacturing techniques are making labor an ever-smaller portion of the total cost of making a product. These factors have led to what the Economist recently called the boomerang effect: Some companies that chased cheap wages in China in the previous two decades have reconsidered their decision to move production offshore. Some are now more interested in either increasing production in Mexico or moving it back to the United States.

What is amazing is that North America is recovering its competitiveness without much of a strategy. Imagine how much more could be done if policymakers fully understood and took advantage of this opportunity. Instead of simply enjoying the moderate recovery of the manufacturing sector, the United States, Mexico and Canada should work as partners to develop policies that could lead to a real resurgence of the region.

Without a doubt, each country must address a number of domestic challenges. Many, such as education and fiscal reform, are needed in Mexico and the United States. Mexico also needs to strengthen the rule of law, increase competition, and improve productivity in the energy sector, and the United States needs to revamp its immigration system so that it can continue to attract the most motivated and talented individuals to contribute to its economy. The regional policy options outlined below go hand in hand with these domestic efforts, and together they have the power to truly revitalize the regional economy.

Policy for a competitive region

The border. With an integrated regional manufacturing sector, the same goods cross the U.S.-Mexico border several times as they are being produced. Consequently, the effects of any barriers to trade, tariff or nontariff, are multiplied by the number of border crossings that take place during production. In the NAFTA region, tariffs are not a significant trade barrier, but the importance of having efficient border management and customs procedures is difficult to overstate.

After NAFTA took effect and trade barriers fell, bilateral trade skyrocketed, more than tripling by 2000. But after the terrorist attacks of 9/11, a new approach to homeland security led to a "thickening" of the border. Trade and passenger travel ground to a near halt. Although trade has been moving since then, the new security concerns have meant that there was never a return to the status quo. Between 2000 and 2010, legal entries of commercial trucks into the United States at the southern border dropped by 41%. Since then, several studies have attempted to estimate the cost of increased border wait times on the regional economy, particularly of border communities. The results are varied, but there is widespread agreement that border-related congestion has had a multibillion-dollar effect on the U.S. and Mexican economies.

Seeking to mitigate these costs, the U.S. and Mexican governments developed the 21st Century Border initiative, which is based largely on the idea that neither security nor efficiency has to be sacrificed to improve the other. By expediting the flow of safe and legal border crossers and cargo, officials can focus more of their attention on seeking dangerous people and goods. This is the concept behind the trusted traveler (SENTRI) and trusted shipper (FAST and C-TPAT) programs in place at the Mexican border. Frequent border crossers prove they are low risk by undergoing an extensive background check and interview process. In return, they get to use special lanes to quickly cross the border.

There is no silver bullet in border management, but these programs are the closest thing. They make the border safer while lessening the need for building more vehicle lanes at entry ports and increasing the number of border staff. They should be expanded and vigorously promoted. Where they are in place, the United States should work with Mexican officials to ensure that use of the dedicated express lanes significantly reduces waiting times, so that there is an incentive to join the programs.

Moderate infrastructure investments are also needed, because although trade has quintupled, relatively few entry ports have seen any major upgrades or expansions. Public/private partnerships are an important mechanism to bring needed funding to the border area, and the Department of Homeland Security should work with Congress to create secure and appropriate mechanisms to encourage their use, if it determines that the current legal environment excessively limits such use. Such partnerships have been successful in some areas, but many border communities and businesses would be willing to commit more resources to facilitate travel and commerce.

Transportation networks. Given the importance of U.S.-Mexico trade, the development of regional transportation networks to facilitate trade is too important to leave to chance and ad hoc processes. Local, state, and federal representatives should and do have a voice in the process of guiding the development of border infrastructure and the highway and rail lines that link the interior states of Mexico and the United States. What is lacking is a coherent and robust master planning process to ensure that strategic rather than political interests are the guiding force behind border and transportation infrastructure investments.

In 2006, California and Baja California took the initiative to begin developing a regional master plan, an award-winning project that many believe could be successfully replicated. Other regions of the U.S.-Mexico border have similar plans in various stages of development, but a true master plan spanning the entire border would best facilitate the competitiveness of the United States and Mexico.

Customs. In addition to the cost of long and unpredictable border wait times, importers and exporters must meet significant documentation requirements, especially in order to take advantage of the tariff preferences granted by NAFTA. The agreement's rules of origin, for example, stipulate that only products from the United States, Canada, or Mexico should get preferential treatment. This means that firms must maintain records proving that their products, and sometimes the parts contained within them, were made or sufficiently altered within the NAFTA area. This paperwork burden can at times be substantial, especially for small- and medium-sized businesses.

In theory, the way to solve this issue is to create a customs union (like that of the European Union) with a set of common external tariffs for all nonmember countries. With a common tariff, the movement of goods within the region would be subject only to security checks, because customs requirements would all be addressed as goods enter or exit the perimeter of the customs union. In practice, this would be very difficult to achieve in North America, given the number of trade agreements each country is party to and the various industries each has sought to protect while negotiating those agreements.

As has been suggested by former U.S. Trade Representative Carla Hills, a more appropriate approach may be to take things product by product. For goods that already face similar external tariffs in each of the NAFTA countries, negotiations could be started to have tariffs lowered to the lowest of the three. When a common external tariff is reached for a product, it could then be exempted from most customs requirements at the United States' southern and northern borders.

A regional partnership for global trade issues. In order to develop a North American export platform, the NAFTA countries should begin to see themselves as an economic alliance. The countries of North America should, whenever possible, engage the global community as partners on trade issues. It may often make sense for the United States, Canada, and Mexico to jointly approach third countries to resolve trade disputes, given the integrated nature of regional manufacturing.

Each of the three North American countries has made a strategic decision to strengthen its engagement with Asia. Given the dynamism of so many Asian economies, this is entirely appropriate. A strategic question, though, is whether they should each make this pivot individually or do so as a bloc. The United States is currently engaged in trade negotiations with a number of Pacific Rim countries to form the Trans-Pacific Partnership. Both Mexico and Canada have signaled their desire to join the negotiations, and finding a way to bring them in is the right strategic move for the United States. The Trans-Pacific Partnership has the potential to actually deepen North American integration, strengthening rules on topics such as intellectual property rights. With full regional participation, it would also open new markets for jointly produced goods.

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