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NAFTA's Impact on the North American Agriculture—a Logistician's Perspective

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ABSTRACT: NAFTA is improving the field of agriculture in Canada, the United States, and Mexico. It is not doing so by enacting measures intended to improve the agricultural sector directly. Rather, the improvement is the indirect result of agriculture's dependence on transportation, telecommunications, intellectual property rights, and investment capital—all of which have been substantially improved by NAFTA. Improvement of these four areas has improved agriculture and will continue to improve it in the future.

The late twentieth century has seen an increasing trend for nations throughout the world to create and participate in trading blocs. The North American Free Trade Agreement (NAFTA) of 1992 was designed to enable the nations of North America to compete more effectively in an increasingly global market, one increasingly dominated by trading blocs, which may prove to be the most powerful economic systems yet devised.

Classical economists focused on the three factors of production: land, labor, and capital. On the other hand, logisticians are interested in the linkages between those factors, viewing the whole system as a *supply chain*. For the field of agriculture, the term *supply chain* refers to the complex, interrelated businesses that make the entire system possible. Roughly speaking, the agricultural supply chain includes, but is not necessarily limited to, sowing, cultivating, harvesting, collection, trans-

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portation, wholesale distribution, and retail distribution. But whether we look at the factors themselves or the linkages between them, we all agree that anything that lowers the cost of any or all of these factors or linkages lowers the cost of the goods in the production system. Therefore, reducing cost is beneficial to everyone involved in that system, especially those who trade with others having less efficient systems.

One very effective way to lower the cost of these factors and linkages is the creation and use of trading blocs. By understanding how trading blocs function, the special status of agriculture in North America, the U. S.'s trade relations with Canada and Mexico, and NAFTA's contirbutions to four sectors of vital importance to agriculture, we will be able to appreciate how NAFTA has improved agriculture outlooks in North America. Further, we will be able to determine more accurately what NAFTA will improve next.

TRADING BLOCS

Trading blocs have become an economic reality in the latter half of the twentieth century. As trade has grown more complex and world market-oriented, countries have grown more outward looking and interdependent. Trading blocs formally establish this interdependence and seek to streamline trade among their member-nations. When functioning properly, trading blocs are extremely powerful economic systems that achieve far more than the sum total of their constituent parts. Understanding how this process works will explain why trading blocs are continuing to grow after more than 40 years' existence.

The EU (European Union)—formerly known as the EC (European Community), which was the EEC (European Economic Community) before that—is certainly the most famous and successful of these. It serves as the basic model for other trading blocs formed since its creation. Although many attribute its origins to the Treaty of Rome in 1958, the EU actually began with the Treaty of Paris in 1951 when several countries now in the EU decided to collectively liberalize their coal and steel trade. This treaty proved to be so profitable that the signatories then decided to expand their agreement to include other industries. Much of the current integration is the direct result of the passage of the Single European Act of 1986.

Since 1958, more trading blocs have sprung up throughout the world. After the EU, the world's second most successful trading bloc is probably NAFTA, although at this early date many remain unsure whether it will attain the same levels of long-term prosperity as the EU. Other developing trading blocs include APEC (Asia Pacific Economic Cooperation), and two South American trading blocs: the Andean Pact, and Mercosur.

Why do countries wish to form or join trading blocs? These blocs offer a forum to resolve restrictions to trade. By combining forces with other nations, a country is in a position to compete more effectively in the world-wide marketplace than it could by itself. To combine forces most efficiently, member-nations must eliminate trade obstacles such as border barriers and the formalities associated with cross-border trade as much as possible. Further, they help deregulate industries, most notably the transport industry. Deregulating industries allows member-nations to lower costs, which result in reducing the cost to produce goods within the entire bloc. With costs lowered throughout the bloc, the bloc can compete more effectively in the world-wide market as a whole.

These advantages are recognized by economists in all countries. Indeed, one recurring issue facing trading blocs at any stage of their development is that of outside nations seeking admission. Currently, several eastern European countries as well as Turkey are seeking EU membership, while Chile has announced its interest in becoming a member of NAFTA. While admission of these countries looks unlikely at this point, circumstances may change as trading blocs grow.

Among developed nations, trade itself is growing at more than twice the rate of growth of gross domestic product (GDP). Additionally, the rate of foreign investment is growing at twice the rate of trade—or more than four times of the rate of growth of GDP. This growth has created an environment of economic development substantially above that of simple domestic activity. Increased trade and foreign investment have the effect of increasing economic interdependence among all countries, who (a) must find export markets if their trade is to continue to thrive, and (b) whose companies are partially- or completely-owned by foreigners, who are thus invested in the success of a foreign country's trade.

As noted, eliminating obstacles to trade and deregulating key industrial sectors are vital steps in the creation of an efficient trading bloc. I would like to detail the elimination of one such obstacle—the simplification of border-crossing procedures in the EU—to illustrate how these changes allow trading blocs to lower cost, and thus increase effectiveness in the world-wide marketplace. This example illustrate dramatically how trading blocs achieve enhanced efficiency, and is of particular importance to the field of agriculture here in North America.

Stringent processes of any kind cause delays in any system. In the realm of European transportation, these delays created a system that was far more expensive than was necessary. Eliminating these delays reduced both direct and indirect expenses within this system.

Simplifying border crossing in the EU reduced direct expenses significantly. Before simplified border-crossing procedures were implemented, the typical long-distance freight truck in Europe spent more than a third of its life inactive, waiting in queues to cross national borders. By easing these border restrictions, the EU not only lowered its own costs (incurred by staffing these elaborate border-crossing points and the administrative agencies associated with them), but enabled trucking companies to reduce costs by reducing the number of trucks they owned; with fewer trucks sitting idle, companies needed fewer trucks. Additionally, easing restrictions substantially reduced the administrative burdens on importers and exporters, whether incurred internally or through hired intermediaries like freight forwarders and customs brokers. Easing restrictions significantly reduced the need for facilities on both sides of any given border. Indeed, many manufacturing and distribution firms in the EU have gone from needing 12 distribution facilities to needing only one.

When the EU deregulated the trucking industry, it also allowed back-hauls for the first time. Under the old system, back-hauling was illegal. For example, a trucking company that moved a load from Amsterdam to Rome could not haul a load from Rome back to Brussels. This meant that a trucking company's cost basis was almost twice what it might be.

Easing border restrictions also reduced indirect expenses. The faster a company can transport something and the less variation there is in the transport time, the less inventory a company needs. By lowering their inventories, companies can lower their warehousing costs. By reducing the amount of capital tied up in inventory, a company is free to redistribute that capital to other areas such as improving its technologies or making changes to its productive capacity. In turn, this helps them reduce the cost and/or improve the competitiveness of the products they produce or the services they provide.

As we can see from the reduction of these direct and indirect expenses, just this one deregulation—reducing border restrictions—can have a tremendous impact on businesses in the countries that enact them. Agriculture, too, benefits from the *ripple effect* that such streamlining produces.

THE STATUS OF AGRICULTURE

Before we can understand the specific impact of trading blocs on agriculture, we must consider two interrelated points regarding the field of agriculture as a whole. The first is that agriculture has been a protected sector in most national economies. The second is that agriculture remains a politically powerful sector of most economies, whether developed or developing.

For centuries, agriculture has been a protected industry of sorts. In the middle ages, agriculture was esteemed and preserved because it was important for defensive reasons: an area or a ruler with a self-sufficient agricultural base was independent, or at least no longer at the mercy of other areas or rulers who might use agricultural dependence as a means of blackmail should supplies run low.

While agriculture is no longer so centrally important to a country's military and political power, it is still a significant force in the late twentieth century. Agriculture is no longer a potential ground for blackmail (at least in the developed world), it is still important because people in the developed world have developed sophisticated palates as well as the economic resources to appease their cravings. We now take for granted the availability of oranges and fresh vegetables in the winter, but such an extravagance was a prohibitively expensive luxury to many people in the United States until relatively recently. Without developed trade and transport capabilities, such tastes are not possible.

For years, countries have written and enacted domestic policies specifically designed to protect the agricultural sector. In the United States, these include farm subsidies and price supports at both federal and state levels. Such policies affect retail consumers most noticeably in the area of basic foodstuffs such as wheat, eggs, bread, and other commodities. In Pennsylvania, for example, milk is a price-controlled commodity for which retailers cannot charge consumers more than a fixed amount.

For over 100 years, these subsidies have even extended to regulating other industries in the name of protecting farmers in the United States. In the late nineteenth century, farmers organized and lobbied for government control of the transport industry (specifically the railroads), which they felt discriminated against them. Congress eventually passed the Act to Regulate Commerce in 1887. Congress later went on to create the Interstate Commerce Commission, its successor, the Surface Transport Board, and other bodies whose function it was to maintain regulation of the transportation industry in order to protect the agricultural sector.

Another way agriculture has been protected is by non-tariff barriers. Tariff barriers are very obvious and typically take the form of an *ad valorum* (value based) duty, such as a straight five percent duty imposed on every item that crosses its border. Non-tariff barriers are usually more insidious, and often take the form of quotas or technical standards. These technical standards have worked both against and for American business in the past. The German beer purity laws have traditionally prevented American beer manufacturers from exporting their products to Germany. On the other hand, American (especially Californian) automobile emissions and safety standards have prevented many foreign car manufacturers from exporting their products to the United States.

Like the United States, Canada has traditionally protected its agricultural sector. Specifically, by subsidizing exports and providing preferential treatment for certain key imports. In addition to a government subsidy for the export of grain, Canada also offers favorable import duty rates for most substances and articles used to support its agricultural sector, including pesticides, fertilizers, farm equipment, and hybrid seed. These export and import subsidies give Canada—probably a larger producer of grain than the Unites States—an additional advantage over the United States in the world grain market. This competitive advantage has been a bone of contention in recent years.

As indicated earlier, the agricultural sector is still politically powerful in almost all economies. Here in the United States, this power is perhaps most evident in the traditional politicians's perceptions of agriculture. Since the nineteenth century, national political candidates have been concerned about securing *the farm vote*. While fewer and fewer people actually working the soil, or growing feed animals than did in the nineteenth century, the farming bloc is still considered important to many candidates' success.

U.S. Trade Relations with Canada and Mexico

The United States's NAFTA-based trade relationships with Canada and Mexico may be best understood as a pair of bi-lateral treaties rather than as a tri-partite one. The U. S.'s largest trading partner has been Canada for many years, and U. S.-Canadian trade has traditionally been characterized by its openness. This is undoubtedly a function of two factors—language and geography. Both the United States and Canada speak English predominantly, which has facilitated trade between the two countries. In terms of geography, historically the U. S.-Canadian border has been one of the easiest borders to cross in the world. While not entirely devoid of formality, Americans and Canadians have always enjoyed a friendly understanding regarding what is an appropriate level of openness at the border. While Canada's agricultural subsidies remains a point of contention with some Americans, U. S.-Canadian trade has always been healthy, and U. S.-Canadian political relations have been entirely peaceful since Canada confederated in 1867. (The last time Americans fought Canadians—who were actually British at the time—was in the War of 1812.)

In contrast, U. S.-Mexican trade has often been characterized by tight controls and complications that do not exist at the U. S.-Canadian border. The traditional formality of U. S.-Mexican trade relations has often been complicated by the limitations imposed by the language barrier, which, while it is not especially difficult to overcome, does add time (and thus cost) to trade. Exports going in either direction have to stop at the U. S.-Mexican border—a massive, bureaucratic infrastructure that has been continuously built up during the nineteenth and twentieth centuries. There, products are subjected to a substantial amount of administrative processes (usually entailing inspection) and handling before they are allowed to proceed.

Change invariably results in economic dislocation. That is, change invariably exposes to risk certain individuals who are unwilling or unable to enact the new practices necessitated by that change. When a change affects many such individuals, that change becomes a political issue—especially when those individuals are members of a protected industrial sector like agriculture. Opening something that was already open (the U. S.-Canadian border) is not a change; opening something that was relatively closed (the U. S.-Mexican border) is a change, and thus U. S.-Mexican trade became a heated political issue. This is why NAFTA's opening of the U. S.-Mexican border to streamlined trade received the overwhelming amount of attention in the popular and business press when it was first proposed. Not only was it a political issue for those unwilling to change, but it also represented an area in which NAFTA could create the most progress, as well as the most opportunity for it.

NAFTA has created a new approach to U. S.-Mexican trade. Since NAFTA was ratified in 1993, the governments of these two countries have been striving to make everything that blocks trade visible, and then to eliminate everything that hinders trade. This means that NAFTA will eventually eliminate all non-tariff and tariff barriers currently impeding U. S.-Mexican trade. The insidious, non-tariff barriers (imposed by all parties) will be converted to visible tariffs, and all tariffs will eventually be phased out over a 15-year period. While fear exists about trade imbalance, as we shall see, this fear is unfounded. The new trade inaugurated by NAFTA will bring increased prosperity to the entire trade bloc.

NAFTA's Improvements to Four Sectors Vital to Agriculture

Before NAFTA was passed, many in American agriculture were concerned that Mexican agriculture, which produced products less expensively than its U. S. counterpart, would benefit disproportionately from the Agreement. However, this concern arose from a mistaken belief (one unfortunately still shared by many in the U.S.) that trade goes only one way: cheaper products are imported from other countries, which is a detriment to our local industries. They do not also recognize the corollary: we export goods to other countries, which is good for our local industries. What few Americans—then or now—realize is that the U. S. exports as much agriculture (measured in dollars) to Mexico as it imports from it. By reducing barriers, NAFTA has increased the level of both imports and exports, increasing overall trade within the region, which cannot but help improve the financial health of both countries.

NAFTA's most important and immediate benefits to agriculture result from the improvement of four sectors vital to agriculture: (1) transportation, (2) telecommunications, (3) intellectual property, and (4) capital, that is, the sources of funds available to those in agriculture for investment. By improving these dependent sectors, NAFTA automatically improves agriculture by improving it major cost inputs. That is, demand for a sector like transportation cannot exist without a demand for the products being transported, in this case agricultural products. The two sectors are interconnected and interanimating; by improving one you improve the other. We may understand NAFTA's true benefits to the field of agriculture by examining each of these four sectors.

Agriculture will benefit from NAFTA's liberalization of the transportation sector. Before NAFTA, U.S. and Mexican trucking firms were prohibited from carrying their international loads from the point of departure to the final destination. Instead, they delivered their goods to the U.S.-Mexican border, where those goods would frequently be unloaded, loaded onto another truck, then delivered to the final destination. Now, U.S. and Mexican trucking firms have cross-border access for international haulage, which means they load and unload only once, saving a substantial amount of time on each run.

Also affecting transportation, NAFTA is trying to equalize the disparity of equipment standards between the U.S. and Mexican transport industries. Americans were and are concerned with the issue of trucking safety, especially now that Mexican vehicles are free to complete international deliveries in border-adjacent states of the U.S. While there is still much progress to be made before there is parity between the U.S. and Mexican trucking industries, NAFTA has improved the situation considerably by compelling the Mexican trucking industry not only to be more safety conscious, but to standardize its dimension and weight standards, thereby simplifying border crossings.

Another improvement to transportation that will benefit agriculture is foreign ownership of trucking firms. Before NAFTA, this was illegal. Now, it is becoming legal. Together, the equalization of standards and foreign ownership of trucking forms has resulted in the expansion of relative markets. The net result is that the entire transportation and distribution process is simply easier and faster than it was before. Major less-than-truckload firms such as Roadway, ABF, Yellow and CF have built alliances allowing the near-seamless movement of freight. As for truckload carriers, J.B. Hunt and Schneider National have established partly-owned Mexican affiliates for achieving the same end. As barriers continue to fall, the strength of these arrangements will only serve to further improved cross-border services.

The second field whose liberalization agriculture will benefit from is telecommunications, which NAFTA has improved. From a logistical standpoint, the exchange of information made possible by modern telecommunications is being used increasingly as a substitute for maintaining large inventories of physical goods. For example, Supplier A is delivering goods to Purchaser B. If Supplier A contacts Purchaser B and says "You will receive the goods in exactly five days," Purchaser B is in a much stronger position because he can now plan his business around the receipt of those goods in five days. If Purchaser B has no idea when the goods will arrive, he must protect himself by keeping a large inventory and perhaps maintaining a warehousing infrastructure, both of which increase his costs while adding little value to his company.

Agriculture will benefit from NAFTA's lifting of restrictions on ownership of telecommunications companies and on who may provide voice mail and other value added services. This change affects providers of messages and data switching services that include electronic data interchange (EDI) capabilities for exchanging various forms of buyer-seller transaction data. Such services, called Value Added Networks (VANs)—nothing more than electronic post offices—are now essential for transferring trade data in all industries. Using them is simple: the communicator sends a transmission to a VAN, after which the receiver can then go into the VAN and retrieve the data. Before NAFTA, VANs, as such, were illegal in Mexico. Now they are legal, which makes communications more efficient. More efficient communication means lower costs and a reduced need for physical goods for all parties involved.

NAFTA has also resulted in an agreement regarding the compatibility of the telecommunications equipment that will be used throughout North America, which will yield significant improvements for the entire trading bloc. The U.S. and Canada already had parity in this area, Mexico's technology was antiquated, insufficient to meet the demands of twenty first-century telecommunications. By moving to high-speed digital switching, digital networks, and touch-tone dialing, Mexico will not only become comparable with its NAFTA partners, but substantially more competitive in the world-wide marketplace, thereby benefitting the entire trading bloc.

The third field whose improvement agriculture will benefit from is intellectual property, which NAFTA will strengthen by standardizing patent and copyright protection throughout the trade bloc. Intellectual property benefits most industries, and agriculture is no exception. Mexico is increasing its protection of intellectual property, so that Americans in the agricultural sector need no longer fear that their rights to agricultural chemical and hybrid seed innovations that they ship there will be infringed upon. That is, agricultural chemicals now will receive full protection from Mexico, which means that foreign inventions capable of increasing productivity may be sold in Mexico without fear of loss of rights. However, Mexico still refuses to protect biotechnology inventions of any kind, which means that producers of genetically-engineered crops and animals are at risk if they sell those products within the Mexican economy. While Mexico's position regarding these products is no worse than it was, there is clearly still a ways to go before intellectual parity—and thus technological parity—is achieved within the bloc.

The last field whose improvement agriculture will benefit from is capital. Agriculture stands to benefit from NAFTA's liberalization of the sources from which individuals and companies may obtain funds for investment. Investors from and in any one of the three NAFTA member nations will receive like treatment no matter what their national origin. That is, investors from any NAFTA nation investing in a company in any other NAFTA nation will be afforded all the same protections as an investor from that nation. So the Mexican government will treat an American investing in a Mexican company no better or worse than it will treat a Mexican investing in that same company.

The U.S. and Mexico have also ratified a tax treaty that lowers the rates imposed on interest, dividends, and royalties from investments. This means that an investor will not be taxed higher on his inter-NAFTA investments than he would normally be on his investments in his home nation.

Mexico has also begun to phase out its requirements for investments. Formerly, Mexico would allow outside investment only if that investment had the likelihood to create a certain amount of exports. This meant that investors not only had to realize profits from their investments, but that they had to ensure those investments created exports. By eliminating these requirements, Mexico will make investment in its businesses more attractive and simple to foreigners.

Perhaps most significant of all, Mexico is now permitting foreign investment in its petrochemical industry. Before NAFTA, the Mexican national petroleum company, Petroleos Mexicanos (PEMEX), had a monopoly on all petrochemical production and refinement in Mexico. Now, the Mexican government has decided to deregulate the production of a dozen key petrochemicals, breaking PEMEX's monopoly on those twelve. This may not immediately seem beneficial to agriculture until we recall that the petrochemical industry produces many of the products that go into producing fertilizers and pesticides. Most agrichemicals share a common origin—organic derivations as either their active ingredient or their inactive components such as wetting agents or solvents—as the by-products of oil and natural gas refining processes. With deregulation, Mexican and other NAFTA-country businesses can begin to create a private agrichemical industry in Mexico. The end of exclusive domination by single governmental bureaucracy heralds a great opportunity for private enterprise and the free market to make this business more efficient, and potentially to cut costs for everyone who uses gas and fertilizer.

NAFTA has already benefited agriculture substantially. However, until the NAFTA countries implement more and more EU-inspired liberalization procedures, we will only begin to exploit the real potential of this trading bloc.

NAFTA'S BENEFITS TO AGRICULTURE IN THE FIRST DECADE OF THE TWENTY FIRST CENTURY

With the passage of NAFTA and the improved trade between its member nations, Canada, the U. S., and Mexico are moving in the right direction. But there is still a great deal of room for improvement.

From a logistician's perspective, there are four improvements still needing to be made that are particularly obvious. First, we should make a concerted effort to further simplify and streamline border crossings. The U.S.-Canada border is still far easier to cross than the U.S.-Mexican border. Further, crossing the "open" U.S.-Canada border is still slower and more complicated than any national border within the EU. Until NAFTA border crossings are as simple as EU border crossings, our trading bloc will be less efficient than our most powerful trade bloc rival.

The second area in need of improvement concerns access. The NAFTA nations should move to allow full trucking access to all U.S. cities, Mexican states, and Canadian provinces. That is, we should allow Mexican trucks to deliver goods to Canada, and Canadian trucks to deliver goods to Mexico.

The third area of improvement is the further liberalization of the Mexican railroads. While the Mexican government has sold off a handful of the lines of its national railway network, it is still very much committed to retaining national control of its rail transportation system. A governmental monopoly is not the most efficient, cost-effective way to manage a resource. As it did with PEMEX, the Mexican government should consider further opening of its key railroads to private ownership in order to increase productivity and reduce costs. It should also seek to emulate Canadian efforts currently underway to strengthen transportation ties with the other NAFTA counties. As of February 1998, Canadian National and Canadian Pacific already own considerable trackage in the U.S. with the former seeking to buy the Illinois Central that would give them access to the U.S. Gulf Coast, and, thus ultimately, Mexico. Bloc-wide transportation systems would improve access, reduce transporation times, cut costs, and strengthen the entire bloc as a whole.

The fourth area that should be liberalized is marine transportation. Like back-hauling rules with trucks, cabotage rules also govern what ships may carry where. Specifically, in marine transport, cabotage prevents foreign carriers from providing domestic service. In commercial aviation, such rules, for example, prevent Lufthansa from carrying U.S. passengers from Philadelphia to Chicago. In North American shipping, cabotage rules prevents Mexican ships from carrying goods between Galveston and Mobile, just as they prevent Canadian ships from carrying goods between New York and Boston. The goal we should be striving towards is known as "open skies"—unlimited access within NAFTA for all forms of transportation belonging to its member nations. This will most likely come about sooner between the U.S. and Canada than between the U.S. and Mexico. With open skies, Air Canada, for example, would be able to serve the market between, for example, Atlanta and Boston. In the same way, United would be able to carry Canadians from Halifax to Toronto.

Trade in all fields will continue to grow throughout the NAFTA trading bloc. Any kind of administrative burdens represent a true cost to every industry. Any time these burdens can be diminished—as NAFTA has started to do—trade is encouraged, and thus increases. NAFTA's improvements will strengthen the position of the entire trading bloc as it deals with other nations and other trading blocs.

To reiterate the point, agriculture has clearly benefitted from the initiatives taken thus far, but agriculture's supply chains throughout North America should be expected to benefit even more as NAFTA's provisions continue to be implemented, thereby further reducing and eventually removes the bureaucratic complexities of doing business. The bottom line: look for NAFTA's improvements to continue to foster the rapid growth of supply chains throughout the three NAFTA members. Because improving the efficiency at any point in the supply chain affects the overall productivity of that chain we can conclude that while NAFTA's liberalizations do not affect agriculture directly, they clearly will affect the manner in which agriculture, as an industry, works in general within North America.

SUGGESTED READING

Waller, D. G., R. L. D'Avanzo, and D. M. Lambert. 1995. *Supply Chain Directions for a New North America.* Oak Brook, IL: Council of Logistics Management.

This source cites many examples among transportation companies, shippers, distributors and trade intermediaries, but also highlights the impact of the supply chain concept on NAFTA trade and the improvements possible from improve information, especially as pertains telecommunications.

Hufbauer, G. C., and J. Schott. 1993. *NAFTA: An Assessment.* Washington, D.C.: Institute for International Economics.

Provides and interesting study of the comparisons and contrasts of the actual trade agreement with some specific recommendations that the authors had previously made to trade negotiators. Assesses those situations where the outcomes were better then, worse than, and as expected relative to potential outcomes.

Abbati, C. d.. *1987. Transport and European Integration*, Brussels: Office for Official Publications of the European Communities.

Despite the perspective of the publisher, this source claims to be a contribution to the public debate. It provides a useful portrayal of the pre-cooperation situation with what is possible with 1) elimination of border crossing formalities as well as 2) liberalization (or deregulation) of the transport sector.

Emerson, M., M. Aujean, P. Goybet, and A. Jacquemin. 1988. *The Economics of 1992*, Oxford: Oxford University Press.

Although an extensive analysis of many of the microeconomic issues contained within the concept of a single Europe, it nevertheless provides a useful context to the typologies of border barriers and their respective economic impact.