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Export Pioneers in Latin America

At the core of Latin America's economic reforms has been opening the region's economies to international trade. The intent was to expose inefficient businesses, including many state enterprises, to the discipline of global competition, while revealing those products and industries in which Latin American countries have comparative advantage. Each country would then import those goods and services that could be made abroad more cheaply than at home, paying for them with exports of other goods and services that local businesses produced relatively more efficiently. Market forces would ensure that, in the end, all countries specialized in doing what they did best, thus optimizing resource use and raising living standards on both sides.

> Latin America's export difficulties may have more to do with cooperation failure than appropriation failure.

Freely determined market prices, in this view, were a necessary condition to set the economic transformation in motion. "Get prices right" was the mantra. The price of each good, set by the point of intersection of supply with demand as in the classic textbook diagram, would serve as a polestar, directing alert entrepreneurs to their destination. The task of policy was to clear away the smog that obscured and distorted prices: trade barriers, meddlesome regulations, state enterprises with mixed objectives, and the like. Profit-motivated businesses would then simply fix their headings on the polestar and set sail.

But, to continue the metaphor, what if the journey is not a straight course over calm seas, but an arduous trip with strong and tricky currents, some helpful, some adverse, some deadly vortices? Real-world business managers would surely say that the latter journey better captures the nature of entrepreneurship. Undistorted prices are necessary, yes, but not sufficient. Prices, after all, are just numbers, statistical distillations of signals informative of where opportunities lie. Managers need to factor in how global competition may push prices; the journey to conquer new exports does not really have a polestar. Furthermore, exploiting those opportunities requires a wealth of additional information—detailed, qualitative, and local. What features of a product do buyers value? Where are the markets, and how do they work? What are the technical requirements for making and shipping it, and who has that technology? What adaptations will be needed to produce it locally? How costly will it be once local inputs are factored in? What regulations or other barriers stand in the way? These questions are hard enough to answer when selling in one's home market; the difficulties scale up sharply when the perceived opportunity lies abroad. Exporting can be good business, but it is a complicated, risky business.

It is also an expensive business: gathering information is itself a costly enterprise. And this gives rise to another problem: once an overseas business opportunity and the means of exploiting it have been discovered, that costly information inevitably leaks out. Imitators may

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eventually compete away most if not all of the profits. Anticipating this, the entrepreneur may well choose to forego the undertaking altogether—an opportunity lost for both the entrepreneur and society.

A 2003 study by two leading development economists, Ricardo Hausmann and Dani Rodrik, argued that this problem of diffusion of the profits of new export opportunities lies at the root of the disappointing export performance of many Latin American economies since reform. The reforms succeeded in getting prices right, yet conditions for entrepreneurs did not improve. Indeed, the reforms may have made some problems worse: for all the efficiency gains of fostering competition in production, the removal of barriers to entry in many industries, for example, made it easier for imitators to crowd in and in that way may have deterred exploring new activities. More generally, the reforms did little of a proactive nature to encourage "self-discovery," the process of "learning what one is good at producing" that is at the heart of successful entrepreneurship.

A forthcoming book published by the Inter-American Development Bank, ***Export Pioneers in Latin America***, analyzes a series of case studies of successful new export activities throughout the region to learn how pioneers jumpstart a virtuous process leading to economic transformation. The book explores Hausmann and Rodrik's conjecture that costly burdens to entrepreneurial self-discovery due to the deterrent effects of imitation by competitors have held back potential exporters in post-reform Latin America (the low appropriation hypothesis). It also considers the conjecture that new export activities are a complex enterprise that can only come to fruition when innovative contributions of many actors are somehow provided jointly (the failure of coordination hypothesis).

That a new export activity might flounder for lack of cooperation is entirely plausible. The actors in this drama include not just the entrepreneurs in the starring role, but a whole supporting cast of suppliers, financiers, distributors, consultants, regulators, and others. Indeed, it is almost a truism that the more ambitious the undertaking, the greater the need for collaborative as opposed to individual effort, no matter how heroic: Charles Lindbergh could cross the Atlantic solo, but it took a concerted national effort by the world's leading industrial power to land men on the moon. And exporting clearly falls in the "ambitious" category. The book's case studies offer many examples in which cooperation proved absolutely vital to export success. To cite just one: Mexican avocado exporters had to work together to meet stringent phytosanitary requirements (restrictions on insect pests, herbicides, and the like) in the developed countries.

Three distinct types of industrial organization have supported export entrepreneurship in Latin America. Each can be viewed as a unique solution to the problems just described. The first is the "cluster," in which many small, independent companies spring up in a concentrated geographic area, sometimes competing with each other, sometimes collaborating, always experimenting. This arrangement is highly prone to information leakage, but several factors offset the costs: any such leakage tends to stay within the cluster, because of the lower costs that clustering allows; the multiplicity of firms spreads the under-

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This issue of *IDEA* was prepared by Rita Funaro and Michael Treadway and was based on the forthcoming book, ***Export Pioneers in Latin America and the Caribbean***, edited by Charles Sabel, Eduardo Fernández-Arias, Ricardo Hausmann, Andrés Rodríguez-Clare and Ernesto Stein. It draws on research conducted for the book by Edgar Aragon, Regis Bonelli, Inés Butler, Armando Castelar Pinheiro, Hernán Ruffo, Ricardo Rozemberg and Gabriel Sánchez.

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IDEA (Ideas for Development in the Americas) is an economic and social policy newsletter published three times a year by the Research Department, Inter-American Development Bank. Comments are welcome and should be directed to *IDEA*'s managing editor, Rita Funaro at Ritaf@iadb.org.

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Cooperation in a Clustered Industry: Avocado Exports in Mexico

Avocados are native to Mexico, where they have long been a staple of the diet. In the 1950s an improved variety, the Hass avocado, was developed; resistant to cold and disease, this high-yielding variety came to dominate the domestic market. Today Mexico is the world's largest producer of avocados, harvesting over 1 million tons annually, and the largest consumer. Production is concentrated in the state of Michoacán, where mineral-rich volcanic soil and abundant rainfall create optimum growing conditions for Hass avocados.

Mexico's potential for exporting avocados did not have to be "discovered." Even before the Hass variety was introduced, Mexico possessed evident comparative advantage in the product. And because avocados (unlike mangoes and guavas, for example) are not highly perishable, they can be shipped outside the country relatively easily. With growing demand for Mexican food products in the United States, an enormous export market thus lies a mere two days' drive from Michoacán.

For most of the 20th century, however, the United States banned imports of Mexican avocados because of U.S. growers' complaints that they carried various insect pests. Producers in California and Florida instead supplied the U.S. market, at much higher costs. Thus it happened that the first commercial export of Mexican avocados was to Europe. The story began in October 1970, when Leopoldo Vega, an avocado grower and packer in Michoacán, shipped two containers to Rotterdam at a handsome profit. Vega's firm continued to sell to Europe until 1976, when the Mexican government imposed currency controls.

Vega reentered in the 1980s, in alliance with a company in Israel. Avocado production in the two countries proved complementary, with the annual Israeli harvest ending just as the main Mexican harvest begins. Thus, both firms benefited: the Israelis contributed technical advice and knowledge of the European market, and the availability of Mexican avocados allowed the Israelis to supply their European customers year-round.

Even with the Israelis' technical expertise, however, the learning curve for exporting avocados across the Atlantic was long. The fruit had to be kept at constant temperature during the 18-day ocean crossing. European distribution practices differed from those in Mexico, placing greater risk on the seller. And the firms had to learn by trial and error how best to promote their product abroad. Meanwhile the inevitable imitators emerged, not only in Mexico but elsewhere, from Algeria to South Africa.

The Mexican producers rose to these challenges, but in the mid-1990s the European Union imposed strict new phytosanitary (plant health) regulations on imported produce. That might have ended Mexico's avocado export ambitions but for one lucky circumstance: just then the North American Free Trade Agreement was being negotiated, finally opening the door to U.S. sales. Once NAFTA was ratified, Mexico's avocado exporters shifted the bulk of their business from Europe to the United States.

The opening of the U.S. market was a windfall for the industry. But challenges persisted. In particular, because the threat of infestation remained, the United States imposed phytosanitary standards at least as strict as the Europeans'. Realizing that violation of the standards by even a single exporter risked closure of the market for all, the Mexican industry—growers and exporters together—undertook an extraordinary cooperative effort to ensure that their avocado exports were pest-free.

As a condition for allowing imports, the United States required that its inspectors be granted access to the orchards—and be reimbursed for the cost. The Mexican industry responded by forming APEAM (Asociación de Productores y Empacadores Exportadores de Aguacate de Michoacán) to collect fees from participating export businesses. APEAM charges an entry fee of $160,000, plus 11 cents per kilogram exported. The U.S. inspectors work closely with the local plant health boards (*juntas locales de sanidad vegetal,* or JLSVs) charged with enforcing Mexican phytosanitary regulations. Only those growers that pass the JLSV inspections, as verified by the inspectors, receive permits to deliver fruit to the packinghouses for export. The success of the arrangement has been dramatic: most of Michoacán's avocado zone has been rendered free of the main pests.

The story of Mexico's avocado exports is a textbook example of the multiple difficulties that new exporters inevitably encounter, even when endowed with strong comparative advantage. The early avocado exporters had to overcome or work around a series of government-imposed barriers: first the U.S. import ban, then Mexico's own capital controls, and finally the EU and U.S. phytosanitary regulations. Exclusion from the U.S. market forced the first movers to take the technically much more difficult European route, which proved feasible only

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Ripe for Cooperation: Blueberry Exports in Argentina

Unlike avocados in Mexico, blueberries are not native to Argentina. Until relatively recently, domestic production of blueberries was of negligible commercial value, and exports were nonexistent. Yet it is easy, in retrospect, to see that Argentina has several advantages in producing blueberries for the world market. First, the country's main agricultural region has a temperate climate (blueberries are a temperate, not a tropical, crop). Second, Argentina has long been an established producer and exporter of agricultural goods worldwide. Perhaps most important, Argentina's southern location allows the export of blueberries to the major Northern Hemisphere markets during their off season, when domestic fields are not producing.

Nevertheless, it was only in the early 1990s, that Argentina's blueberry export industry was launched. And as so often elsewhere, it happened through the efforts of a single pioneering entrepreneur. The pioneer in this case was Francisco Caffarena, a former automobile executive who had left that industry to start his own business.

Caffarena began by searching systematically across a wide range of products for profitable export niches. However, his discovery of blueberries' potential occurred largely by chance, when he learned of the strong demand in Europe during a business trip to Italy: European off-season prices, he discovered, were between two and ten times in-season prices. Investigating further, Caffarena found that shipping could be handled with relative ease through existing networks, and the costs of inputs and land in Argentina were already known. Capital requirements for small-scale production were modest, and the first mover, Caffarena's company, Vergel S.A., could expect to enjoy a monopoly in the Argentine product for several years.

There were, of course, hurdles. Since blueberries had never been grown commercially in Argentina, little was known about the suitability of the soil, which varieties would grow best, which diseases posed threats, or which specific locations offered optimum climatic conditions. In addition, again for lack of a preexisting industry, Vergel had to set up operations at each stage of production, not only growing and harvesting the fruit but also building a nursery to develop and propagate the plants and establishing marketing operations. Thus, blueberry production in Argentina was vertically integrated from the outset. This was possible precisely because Vergel started on a small scale: its first harvest for export, to the United Kingdom in 1994, was so small that Caffarena delivered it to the Buenos Aires international airport in his own car.

Although small, these early harvests were quite profitable. Vergel could harvest one month earlier than its main competitors in Chile and thus could command temporary monopoly prices. At those prices Vergel could turn a handsome profit despite not having yet perfected its production methods. In addition, it would take two years before production by Vergel's first domestic competitors came on line—and meanwhile the international market for blueberries was growing apace.

Given its initial success, Vergel's next logical step should have been to aggressively expand all three of its main activities—nursery, production, and marketing—to head off potential competitors. But the necessary investment was beyond what the company could muster. Therefore, Vergel chose to focus on the upstream and downstream stages, allowing competitors to enter at the production stage. This arrangement—a hybrid of vertically integrated and cluster organization—made good business sense, because only the nursery and marketing activities enjoyed economies of scale. Moreover, problems at the growing and harvesting stage continued to require experimentation, and the risks, Caffarena judged, were best shared with others.

That said, Vergel did not leave the growers entirely to their own resources. Rather, it provided technical assistance, even opening its own fields to extension activities, and it spread market risk by signing advance purchasing contracts with growers. These activities, however, were likewise kept small in scale, and the costs were therefore manageable. Vergel did take on itself the major task of opening the U.S. market, working to establish an official protocol for blueberry exports and developing the required fumigation technology. Although the cost was high, the rewards of breaking into so vast a market were deemed large enough to share. Also, as the industry monopolist at the first and third stages, Vergel believed it could recoup the costs before serious competition emerged. Thus, many of the initial industry-specific public goods—information about farming practices and the opening of markets—continued to be provided not through collaboration among small producers, and not by the state, but by the industry leader.

In fact, competition had already emerged in the form of two new entrants

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Cleared for Export Takeoff: Brazil's Embraer

Embraer (Empresa Brasileira de Aeronáutica S.A.), the flagship Brazilian aircraft manufacturer, is something of a rarity among the world's large industrial enterprises: a developing-country firm that is a world leader in one of the highest of high-technology industries. Embraer today is the world's third-largest manufacturer of commercial airplanes, behind giants Boeing and Airbus. It is also a leader in aircraft exports, with about $3 billion in overseas sales annually. Within the global industry, Embraer has carved out a secure niche as a low-cost builder of small and medium-size aircraft, leaving the production of jumbo jets and other large models to the two dominant firms.

Embraer's emergence as a top-tier producer of aircraft owes much to its unique historical and geographical circumstances. Brazil's vast territory, dispersed population, and lack of an extensive road and rail network created a heavy dependence on air travel. Many of Brazil's small and medium-size airports lack modern infrastructure, and the market for air travel in any one city tends to be small. Serving these cities thus requires a large fleet of smaller, reliable planes. Beginning in the 1960s, however, the major world airlines, eager to serve lucrative transcontinental and transoceanic routes in the developed world, began to prefer larger planes, and the major manufacturers accommodated this demand. In Brazil, this trend encouraged domestic airlines to abandon many smaller cities that the large planes could not serve profitably. Whereas in 1958 some 335 Brazilian cities had air connections, by 1975 only 92 did.

Embraer was founded as a state enterprise largely to fill the emerging need for aircraft that could serve Brazil's smaller cities. But the company faced a dilemma. It could have simply licensed the necessary technology from a foreign company and built as many planes as were needed, but then it would have been prevented from exporting the finished product. Without export revenue, Embraer would have depended on public subsidies and almost surely would have had to operate at a reduced scale, resulting in higher unit costs. A smaller country than Brazil might have had no choice but to pursue the licensing alternative. But because Brazil's huge market offered the potential for economies of scale in aircraft production, Embraer was seen as having at least a chance—although hardly a guarantee—of success in the export business.

Brazil's Instituto de Pesquisa e Desenvolvimento had already designed a prototype model, an eight-passenger turboprop plane called the IPDIPAR 6504. Embraer's first mission, in 1969, was to manufacture and market the new plane, expanded to 18 passengers and renamed the Bandeirante. The company's first exports came a few years later, in 1975. Then, in the late 1970s, Embraer received a major windfall: U.S. airline deregulation accelerated the move to hub-and-spoke route systems, and these required smaller planes to serve the shorter routes. The industry giants, having placed their bets on the large models, could not quickly respond to the new demand. But Embraer could. Its Bandeirante was the right plane at the right time in the right place. Already by 1982 the company accounted for a third of the U.S. market for 10- to 20-seat planes, and its sales grew from there. Embraer built on its success with more advanced aircraft, such as the Xingu, its first plane with a pressurized cabin, and, in the 1990s, the EMB-145, its first commercial jet.

Embraer's export flight path was not without turbulence, however. In the mid-1980s the Brazilian government shortened the company's leash, requiring all important corporate decisions to be made in Brasilia. It also saddled the company with unprofitable projects such as the CBA-123, a joint venture with the Argentine firm FAMA. Both domestic sales and exports declined sharply, and losses accumulated. Finally, in 1994, the company was privatized. It eventually became jointly owned by a mix of Brazilian and foreign interests, with the state retaining a small share. Privatization led to a complete turnaround in Embraer's management practices and finances and a large infusion of new capital. Embraer's sales and exports have grown several fold since.

Of the three types of industrial organization, Embraer epitomizes the "platform" structure. Embraer's managers realized from the start that Brazil's still-developing economy could not be expected to supply all the sophisticated parts and technologies that go into a modern airplane. So instead the company focused on design, building the fuselage, and assembling the final product while outsourcing the rest, at first mostly from foreign suppliers. This contrasts with Brazil's traditionally more protectionist industrial policy; in the 1980s, for example, computer manufacturers were forced to use domestic suppliers—a requirement that weighed heavily in the sector's demise. This more open strategy had advantages besides the obvious one of allowing Embraer to obtain inputs

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lying risks of the business; and a company that fails in one role in the cooperative enterprise may be able to shift to another. Examples of this type, each the subject of a chapter of the book, are the cut flowers industry in Colombia and furniture making in Brazil.

The second type of organization is the "platform." Here a number of independent firms specialize in contributing the various elements of a complex product (such as a computer operating system or a commercial airliner), their efforts coordinated by a single core company that undertakes the final assembly (the role played by Brazil's Embraer in one of the case studies). This strategy works well in industries where economies of scale favor monopoly, but the dominant firm cannot or is reluctant to assume control of the whole production chain.

The third organizational type is "the vertically integrated firm in transition to lean production." These firms began as traditional, large, vertically integrated mass producers (think of the major U.S. automakers) but have been forced by emerging competition to reduce costs by, among other things, slashing inventories. The resulting pressure on assembly operations forces the firm to innovate constantly to clear the inevitable bottlenecks, and the focus on innovation in turn makes the whole company more flexible and better positioned to switch or modify products in response to changing demand.

In the end, Latin America's export difficulties may have more to do with cooperation failure than appropriation failure: when cooperation hurdles have been cleared, appropriation does not appear to have been determinant in many instances. But in an interesting twist, the same solutions can often remedy both problems. A repeated pattern found in the studies involves one or more industry-specific public goods that must be developed and shared by the participating exporters. These goods—also sometimes called "club" goods—differ from "pure" public goods in a crucial way. Whereas pure public goods are nonexcludable (it is impractical to charge for their use), some industry-specific public goods are *not*. In other words, one can charge for access to them. If export success requires access to the public good, each would-be exporter will be willing to pay. Such a mechanism could take care of the coordination problem. At the same time, the access price for imitators can be set at a level that prevents them from competing down the returns borne by those agents who opened the market in the first place. That could take care of the appropriability problem. Thus, for example, the Mexican avocado industry created a semi-public arrangement to guarantee that their exported product was pest-free, and then required growers to pay a fee for participation. The fee explicitly covered not only the cost of inspections but also the cost of creating the inspection system itself, without which there would be no export market. Growers who did not pay were excluded from the guarantee and could not export.

By "learning how to learn," successful exporters in Latin America have traveled far on the journey to prosperity. This edition of *IDEA* looks at three case studies of how an initially successful export activity did not stop with the discovery of a single viable product, but instead continued to evolve. What Latin America's new exporters have shown is that continuous innovation is possible in any economic sector, provided not only that they get the prices right, but that the public goods that foster such innovation are right as well.

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from the world's best producers: valuable know-how was imported as well, and the foreign companies' stake in Embraer's success motivated them to lobby their own governments when Embraer needed help in keeping those markets open.

Since privatization, however, Embraer has moved toward sourcing more components locally: by 2005 about 40 percent of the typical Embraer aircraft was manufactured in Brazil. Although encouraged by the government, this move also benefits the company: it provides a hedge against fluctuating exchange rates, and locally concentrated firms encourage knowledge spillovers. Enhancing these spillovers is the fact that many foreign aerospace suppliers, responding to Embraer's move, have set up subsidiaries in Brazil.

Because Embraer was founded as a state enterprise, it is not surprising that the state provided many of the industry-specific public goods that contributed to its success. The Brazilian government has supported the company over the years in numerous ways. Besides directly financing Embraer in its early years, its frequent procurement of military aircraft helped keep the company in the black. Graduates of publicly fund-

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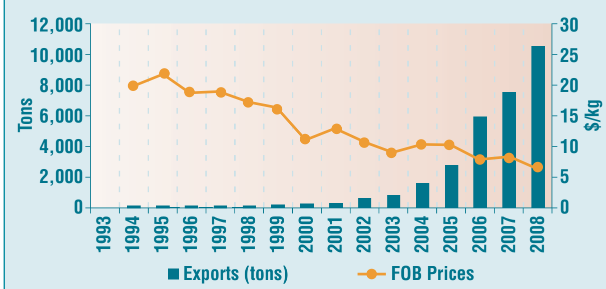
at the nursery stage. But precisely because Vergel had kept its technical assistance scaled down, the new arrivals found it worthwhile to provide their share as the industry grew. Meanwhile, competition also materialized at the marketing stage, with seven new export firms on the scene by 2001. All this benefited the growers, who soon found it useful to cooperate with each other to provide additional public goods that the integrated firms could not or chose not to provide, eventually forming a growers' association for this purpose.

Since 2002, when the crop weighed in at about 500 tons, Argentina's blueberry exports have grown explosively: shipments doubled in 2004, almost doubled in 2005, doubled again in 2006, and finally exceeded 10,000 tons by 2008, making blueberries the country's seventh-largest fruit export (see Figure 1).

Figure 1. Argentine Blueberry Exports and FOB prices



Source: IERAL – Fundación Mediterranea based on COMTRADE.

Newcomers to the industry accounted for virtually all of this growth: by 2005 the original leader, Vergel, contributed only 4 percent of the harvest. In 2009, however, exports fell by a third, in part because of poor weather and the global financial crisis, and in part because of the consequences of overinvestment. Industry participants had failed to cooperate in providing one industry-specific public good, namely, stabilizing their own growth path. The sharp increase in competition led to a marked decline in prices received, from \$20 a kilogram to \$5 already in 2008, and eventually discouraged producers. Today the boom is clearly over; any monopoly rents have surely been dissipated. Only those firms with adequate scale and efficient operation will continue in business.

The industry-specific public goods created during the period of rapid growth remain in place, however, and with them the blueberry industry is likely to recover. But given the size to which the industry has already grown, more such goods will be needed, especially in the area of transport. For example, although a new cargo terminal for perishable products was built at the Buenos Aires airport, the fact that only two airports in the country are equipped to export blueberries remains a serious bottleneck. Roads and railroads are also inadequate. All this indicates a general shortfall of public infrastructure investment, although providing adequate infrastructure for an industry whose output is concentrated in one month of the year is not an easy task under the best fiscal circumstances. Clearly the blueberry industry has grown beyond the point where a single leader, a few leading firms, or even the whole industry acting cooperatively can ensure by themselves the provision of the needed public goods. The challenge going forward will be to devise means of public-private cooperation to provide the public goods that can support what is now an important, mature industry.

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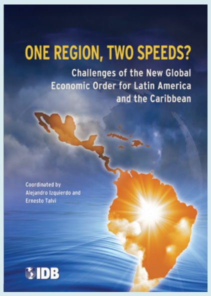
ed engineering schools, in particular the Instituto Tecnológico de Aeronáutica, were recruited onto its payroll. And the government frequently lobbied on the company's behalf when it encountered regulatory difficulties overseas. Last but not least, the government regulated the domestic civil aviation system in ways that helped assure Embraer a market.

While Embraer received favors from the government over the years, it repaid them, at least in part, with public goods that it provided to the rest of the Brazilian aerospace industry. In particular, as sole proprietor of the industry "platform," Embraer achieves through its management decisions the coordination of activities that would have to be negotiated cooperatively within a pure cluster—indeed, it is hard to see how so complex a product as a commercial jet could be produced under the cluster model. Just as important, Embraer's worldwide prestige has created a "halo effect" that extends across its retinue of suppliers, each of which can plausibly tell potential customers that if what it makes is good enough for Embraer, it is good enough for them. Arguably this halo effect extends beyond the aerospace industry to the Brazilian technology sector more generally. In the end, the most important public good that Embraer has provided might well be its burnishing of the Brazilian industrial brand.

New Publications

Available in English only unless otherwise stated.

MONOGRAPHS



Izquierdo, Alejandro and Ernesto Talvi

One Region, Two Speeds? Challenges of the New Economic Order for Latin America and the Caribbean (IDB-MG-109)

This report highlights how, in the aftermath of the global financial crisis, key structural characteristics of Latin American and Caribbean countries are defining two quite different regional clusters in terms of opportunities and challenges ahead. It shows that substantial changes are already taking place and will impact the regional clusters in different ways. Economic policy design in each country will have to accommodate these differences in order to ensure widespread and stable growth.

WORKING PAPERS

Amarante, Veronica, Miguel Edward, Marco Manacorda and Andrea Vigorito

Social Assistance and Birth Outcomes: Evidence from the Uruguayan PANES (IDB-WP-244)

This paper estimates the impact of a large temporary poverty relief program, Uruguay's PANES, on birth outcomes. Treatment was found to produce a reduction on the order of 10–20% in the fraction of low-weight newborns (less than 2,500 g.). The cash (and in-kind) transfer components of the program drive the results, suggesting that unrestricted social assistance has the potential to positively affect birth outcomes, most likely through improved nutrition. Assuming that the entire effect of the program was through the transfer, an elasticity of low birth weight with respect to welfare transfers on the order of around 0.30 can be inferred.

Arbalaez, Maria Angelica and Monica Parra Torrado

Innovation, Research and Development Investment and Productivity in Colombian Firms (IDB-WP-251)

This paper attempts to establish a formal relationship between innovation and productivity using Colombian firm-level data. It is found that the production of goods and services new to the firm and to the domestic market enhances firms` sales per worker, and innovation that results in introducing new goods and services to the international market boosts both sales and Total Factor Productivity (TFP). Innovation in processes likewise improves firms` productivity and sales. Finally, innovation in marketing and management increases sales per worker and enhances TFP when investment is made in R&D. The paper also studies factors behind firms` decision to invest in innovation as well as the intensity and returns to such investment.

Barham, Bradford, James Manley and Seth Gitter

The Coffee Crisis, Early Childhood Development, and Conditional Cash Transfers (IDB-WP-245)

This paper examines the efficacy of three conditional cash transfer (CCT) programs in Honduras, Mexico, and Nicaragua in mitigating the potentially negative effects of an income shock caused by falling prices of coffee, an important cash crop to many CCT participants. A theoretical household model demonstrates both the positive potential of CCTs to cushion the impact of negative shocks on early childhood development and the negative potential of CCTs to exacerbate a negative shock if households shift resources from younger to older children to sustain their school attendance. In Mexico the CCT mitigated the negative shock on child height-for-age z-scores, while in Nicaragua coffee-producing households participating in CCTs saw greater declines in z-scores. Findings for Honduras are largely inconclusive.

Bouillon, Cesar and Patricia Yañez-Pagans

Dynamic Consistency of Multidimensional and Income Targeting: An Application for Mexico Using Panel Data Information (IDB-WP-250)

This paper compares the dynamic consistency of targeting methodologies that use multidimensional welfare indicators with those based on means and proxy means tests using panel data from Mexico. An extension of the Alkire and Foster (2008) dual cutoff multidimensional poverty methodology is used to make the comparison. This extension provides a relative approach to multidimensional deprivation that ranks individuals according to their relative position in the distribution of a set of welfare attributes or outcomes. The findings, by geographical area (urban and rural), suggest that taking into account deprivation in multiple dimensions may lead to more dynamically consistent measures of well-being and thus more dynamically consistent targeting algorithms.

Calderon, Maria Cecilia and John Hoddinott

The Inter-Generational Transmission of Cognitive Abilities in Guatemala (IDB-WP-247)

This paper examines early childhood development (ECD) outcomes and their association with family characteristics, investments, and environmental factors, with particular emphasis on the inter-generational transmission of cognitive abilities. The paper examines the causal relationship between parental cognitive abilities and ECD outcomes of their offspring using a rich data set from rural Guatemala. A 10% increase in maternal Raven's scores increase children's Raven's scores by 7.8%. A 10% increase

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in maternal reading and vocabulary skills increases children's score on a standard vocabulary test by 5%. Effects are larger for older children, and the impact of maternal cognitive skills is larger than for paternal skills.

Camacho, Adriana and Emily Conover

The Impact of Receiving Price and Climate Information in the Agricultural Sector (IDB-WP-220)

Previous studies indicate that Colombian farmers make production decisions based on informal sources of information, such as family, neighbors or tradition. This paper randomizes recipients of price and weather information using text messages (SMS technology). It finds that relative to farmers who did not receive SMS information, the farmers who did were more likely to provide market price information, had a narrower dispersion in the expected price of their crops, and suffered significantly fewer crop losses. Farmers also report that text messages provide useful information, especially in regards to sales prices. However, the actual sales price, and farmers' revenues or household expenditures varied little between treated and untreated farmers.

Chong, Alberto, Dean Karlan, Jeremy Shapiro and Jonathan Zinman

Tried and True? The Contextual Specificity of -Proven- Approaches to Behavioral Change (IDB-WP-265)

Prior research has documented the success of a variety of appeals, notably those based on social norms and social pressure, in increasing compliance with requests to engage in environmentally friendly behaviors. This paper suggests that these successes are likely context dependent, and may not necessarily produce similar results across contexts. The paper evaluates the effectiveness of norms-based appeals, and other messages, in increasing recycling in Northern Peru; such messages appear to have little effect. The paper further examines how the medium in which appeals are transmitted affects results. Finally, it is suggested that interventions that directly reduce the costs of engaging in environmentally friendly behaviors, in this context recycling, are more effective than norms-based appeals.

Cova, Pietro, Akito Matsumoto, Massimiliano Pisani and Alessandro Rebucci

News Shocks and Asset Price Volatility in General Equilibrium (IDB-WP-252)

This paper studies equity price volatility in general equilibrium with news shocks about future productivity and monetary policy. As West (1998) shows, in a partial equilibrium present discounted value model, news about the future's cash flow reduces asset price volatility. This paper shows that introducing news shocks in a canonical dynamic stochastic general equilibrium model may not reduce asset price volatility under plausible parameter assumptions. This is because in general equilibrium the asset cash flow itself may be affected by the introduction of new shocks. In addition, it is shown that neglecting to account for policy news shocks (e.g., policy announcements) can potentially bias empirical estimates of the impact of monetary policy shocks on asset prices.

Hofstetter, Marc, Jorge Tovar and Miguel Urrutia

Effects of a Mortgage Interest Rate Subsidy: Evidence from Colombia (IDB-WP-257)

Government intervention in the construction sector as a way to boost the economy has been a constant in Colombia for the past 90 years. This paper explicitly tests the impact of the most recent intervention: a subsidy to the mortgage interest rate. The results show that the subsidy boosted mortgage loans by around 38%. However, it is also found that real interest rates went up by 1.09%, i.e., there has been an incomplete pass-through of the subsidy to the consumer. The pass-through of this intervention is estimated to be in the range of 65% to 74%.

Kuramoto, Juana

Innovation, Research and Development, and Productivity: Case Studies from Peru (IDB-WP-249)

This paper analyzes quantitative findings on the innovative behavior of firms in the production chains of pisco and shoe manufacture in Peru, which are served by the network of Technological Innovation Centers (CITEs), the most important technology policy instrument available in Peru. These two chains, in low and medium-technology industries, are representative of Peru's manufacturing sector. Of particular interest is the role of technical standards as a means of technological diffusion, which is stressed in the work of the CITEs. For the pisco chain, that role involves the definition of the product itself, for which Peru is seeking a World Intellectual Property Organization (WIPO) denomination. In the shoe chain, the technical standard should act as a coordination mechanism that will help increase efficiency throughout the chain, which at present is often fractured.

Miller, Sebastian

Why Do Populist-Outsiders Get Elected? A Model of Strategic Populists (IDB-WP-248)

The existence of populist regimes led by outsiders is not new in history. In this paper a simple framework shows how and why a populist outsider can be elected to office, and under what conditions he is more likely to be elected. The results show that countries with a higher income and wealth concentration are more likely to elect populist outsiders than countries where income and wealth are more equally distributed. It is also shown that elections with a runoff are less likely to bring these populist outsiders into office.

Pineda, Allan, Marco Agüero and Sandra Espinoza

The Impact of ICT on Vegetable Farmers in Honduras (IDB-WP-243)

Honduran farmers are at a disadvantage when dealing with intermediaries

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New Publications

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because they lack timely information about market prices. This paper first analyzes which information and communications technology (ICT) would be most suitable for sending price information to producers scattered throughout the country at a reasonable cost and in a sustainable way. Negotiations by two groups of farmers were compared: one to which market prices were not sent (control) and one to which prices were sent (treatment). Findings are reported, as well as recommendations and lessons learned.

Powers, Elizabeth

The Impact of Economic Migration on Children's Cognitive Development: Evidence from the Mexican Family Life Survey (IDB-WP-246)

This paper uses data from the Mexican Family Life Survey to estimate the impact of a household member's migration to the US on the cognitive development of children remaining in Mexico. While there is no developmental effect of a child's sibling migrating to the US, there is an adverse effect when another household member—typically the child's parent—migrates. This is particularly true for pre-school to early-school-age children with older siblings, for whom the effect of parental migration is comparable to speaking an indigenous language at home or having a mother with very low educational attainment. Additionally, household-member migration to the US affects how children spend their time in ways that may influence and/or be influenced by cognitive development.

Urzua, Sergio and Gregory Veramendi

The Impact of Out-of-Home Childcare Centers on Early Childhood Development (IDB-WP-240)

This paper presents a comprehensive empirical analysis of the impact of attending a child day care center on early childhood development (ECD) in Chile, examining child development from a multidimensional perspective. The potential endogeneity associated with the parental decision to send children to day care centers (or preschools) is addressed. The results suggest that: (i) cognitive and socioemotional test scores from children younger than two are too noisy to be analyzed; (ii) analysis of enrollment in child care centers for children older than two reveals significant effects of family background, unobserved abilities, the local availability of centers, and local capacity; and (iii) enrollment in child care centers seems to boost cognitive development among children older than two.

Velasquez, Liliana

The Importance of Public Goods to Local Quality of Life: The Case of Manizales, Colombia (La importancia de los bienes públicos en la calidad de vida local: El caso de Manizales, Colombia) (IDB-WP-255) (Available in Spanish only)

This document applies a method developed by the IDB to monitor the urban quality of life which is based on a combination of two approaches: hedonic prices and life satisfaction. This combination allows local public goods to be appraised from both a market and utility point of view. Unlike other monitoring systems, this one focuses on a few dimensions (those related to the livability of the urban environment) and offers valuable information for the design and prioritization of public policies. The results of the application of this method to Manizales, Colombia reveals that even though the market values some public goods sufficiently, it does not capture the additional value that other goods represent to the welfare of residents.

POLICY BRIEFS

Powell, Andrew, Eduardo Lora and Pilar Tavella

How Will the Food Price Shock Affect Inflation in Latin America and the Caribbean? (IDB-PB-120)

This note assesses the impact of the recent food price shock on food, non-food and consumer inflation in LAC countries. It is concluded that, due to the food price surge, increases in inflation could exceed 5 percentage points in Bolivia, Dominican Republic, Guatemala and Honduras unless additional policy actions are taken. In some countries with flexible exchange rate systems, such as Brazil, Colombia and Mexico, currencies tend to appreciate as a response to higher food prices and as a result the impact on domestic prices is muted. However, there is no simple pattern of differences between floaters and fixers; the speed and extent of pass-through is quite heterogeneous and dependent on factors such as the importance of food in the overall inflation index and local policy measures.

OUTSIDE PUBLICATIONS

Books

Azevedo, Viviane, César Bouillon, and Ignacio Irarrázabal.

Sistemas Integrados de Información Social: su rol en la protección social. Pontificia Universidad Católica de Chile. Centro de Políticas Públicas UC. 2011. (Available in Spanish only)

This book compiles the principal findings of studies on Integrated Systems of Social Information (SIIS) commissioned by the IDB in 2006–08 in six countries in Latin America: Argentina (SINTYS); Brazil (CadUnico), Chile (RIS), Colombia (SISBEN), Costa Rica (SIPO-SISBEN); and México (Padrón de Oportunidades). The objective of the book is to analyze concrete experiences with SIIS in order to identify and share lessons learned and improve the operational and institutional capacity of the systems. It also studies how these systems can contribute to improve the performance and results of focalized social interventions.

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New Publications

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Articles

Machado, Fabiana, Carlos Scartascini and Mariano Tommasi.

Political Institutions and Street Protests in Latin America. *Journal of Conflict Resolution*. June 2011 55: 340–365, first published on April 24, 2011 doi:10.1177/0022002711400864

This article argues that where institutions are strong, actors are more likely to participate in the political process through institutionalized arenas, while where they are weak, protests and other unconventional means of participation become more appealing. The authors explore this relationship empirically by combining country-level measures of institutional strength with individual-level information on protest participation in 17 Latin American countries. There is evidence that weaker political institutions are associated with a higher propensity to use alternative means for expressing preferences, that is, to protest.

De Miguel, Carlos, Sebastian Miller, Raúl O'Rýan and Mauricio Pereira

The Socioeconomic and Environmental Effects of Free Trade Agreements: A Dynamic CGE Analysis for Chile. Environment and Development Economics (2011), 16: 305–327

This paper analyzes the socioeconomic and environmental impacts of trade agreements with the EU and US in Chile. The results show that economic gains under the trade agreements are only significant if foreign investment increases or value added taxes are modified. Winners and losers depend on the agreement; however, unskilled labor-intensive sectors always progress. Thus, these agreements seem to be good for the poorest groups. Some natural resource intensive sectors significantly increase their production with the EU and the US agreements, also increasing environmental pressures. CO_2 and PM-10 emissions are not very different under these agreements as compared to business as usual—under which environmental pressures increase significantly.

Cooperation in a Clustered Industry: Avocado Exports in Mexico

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through cooperation with foreign allies. Dealing with the U.S. phytosanitary regulations under NAFTA required a more comprehensive, indeed industry-wide, degree of cooperation, institutionalized as APEAM. Finally, the inherent ease of entry into avocado production meant that the Mexican exporters constantly had to consider the threat of imitators.

Of the three main types of export organization, the Mexican avocado industry clearly exemplifies the cluster: no one company dominates; rather, more than 6,000 independent growers supply fruit to 34 packing and exporting firms as well as to 14 industrial processors. The absence of strong economies of scale encourages this form of organization. However, the cluster form also has its disadvantages: in particular, the diverging interests between avocado growers, on the one hand, and packers and exporters, on the other, have at times led to tensions over pricing and other matters.

The story also vividly illustrates the idea that solving problems of coordination can also solve problems of appropriation: cooperation creates industry-specific, quasi-public "club" goods that are critical to export success, and these become the mechanism by which free-riding interlopers are excluded. The permit system ensures that only those producers who comply with the standards *and* contribute to the cost of verifying that compliance may export. In addition, the $160,000 entry fee is explicitly intended to make new members match the costs that the original members incurred in developing the system.

With a stable and growing market and well-tested cooperative institutions in place, Mexico's avocado exporters might seem to have put their high-risk start-up days behind them. Indeed, today's industry demonstrates a degree of complacency and a reluctance to tamper with what has, after the usual mistakes and false starts, worked very well. However, a new set of imitators, armed with the latest technologies and other advantages, is emerging in the Southern Hemisphere. One of their innovations is closer spacing of trees, a practice that requires more intense crop management but dramatically increases yields—and one that the Mexican growers cannot replicate without uprooting existing orchards. Another notable difference: several of the new competitors are vertically integrated, in sharp contrast to the dispersed Mexican industry. The next chapter in the avocado *novela* may be the contest to determine which of these differing technologies and forms of organization best meets the challenges of the market. Whatever the outcome, it underlines the lesson that in today's world economy, innovation is not just a passing phase in an industry's evolution but a condition for its continued success.

Network News

Latin American and Caribbean Research Network

The following proposals have been selected for the research project "The Future of Taxation in Latin America and the Caribbean".

Understanding the Cyclical Behavior of Fiscal Revenues		Title
Argentina	UTDT – Universidad Torcuato Di Tella	Automatic Stabilization and Fiscal Policy: Some Quantitative Implications for LAC
Peru	MACROCONSULT	The Impact of the Cycle on Revenue Elasticities and Tax Compliance
Colombia	Fedesarrollo	The Direct and Indirect Effects of Nonrenewable Commodity-related Revenues on Noncommodity Related Fiscal Revenues
	Consultant	The Direct and Indirect Effects of Nonrenewable Commodity-related Revenues on Noncommodity Related Fiscal Revenues
Fiscal Revenues and Efficiency in LAC Non-Renewable Natural Resource Sectors		
Argentina	UDESA – Universidad de San Andres	Taxation of Non-Renewable Natural Resources in Argentina: The Cases of the Oil, Gas and Copper Sectors
Peru	CCD – Centro para la Competitividad y el Desarrollo, Universidad San Martin de Porres	Fiscal Revenues and Efficiency in LAC Non-Renewable Natural Resource Sectors: Case Studies of Mexico, Chile and Peru
Peru	CIUP – Centro de Investigacion de la Universidad del Pacifico	Fiscal Revenues and Efficiency in LAC Non-Renewable Natural Resource Sectors: The Case of Peruvian Mining, Oil and Gas Sectors
Colombia	Fedesarrollo	
Potential and Challenges of the Property and Land Tax		
Argentina	CIPPEC – Centro de Implementación de Políticas Públicas para la Equidad y el Crecimiento	Potential and Challenges of Property and Land Taxation in Argentina
Colombia	CEDE – Universidad de los Andes	Potential and Challenges of Property and Land Taxation in LAC: The Case of Colombia
Costa Rica	CATIE – Centro Agronómico Tropical de Investigación y Enseñanza	What Drives Land Collection in Costa Rican Local Governments?
Environmental Taxes in LAC		
Argentina	FIEL – Fundación de Investigaciones Económicas Latinoamericanas	Environmentally Related Energy Taxes in Argentina, Bolivia and Uruguay
Guatemala	ICEFI-IARNA – Instituto Centroamericano de Estudios Fiscales & Instituto de Agricultura, Recursos Naturales y Ambiente, Rafael Landívar University.	Environmental Taxes in LAC: Potential and Distributive Consequences. Assessing Water Taxes in Central America
Trinidad & Tobago	UWI-SEDU – Sustainable Economic Development Unit, Department of Economics, University of West Indies	Survey and Assessment of Environmental Taxes in Caribbean Countries: Trinidad and Tobago, Jamaica, Barbados and The Bahamas.

Policy Seminars

"More than Good Intentions: How a New Economics is Helping to Solve Global Poverty" by Dean Karlan
Sept. 27, 2011 at 11:00 a.m. at IDB Headquarters in Washington, DC.

"Government versus Market: The Changing Economic Role of the State" by Vito Tanzi
Oct. 12, 2011 at 11:30 a.m. at IDB Headquarters in Washington, DC.

www.iadb.org/res/researchnetwork