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Recent Trends in Border Economics

Thomas M. Fullerton, Jr.
Department of Economics & Finance, University of Texas at El Paso, El Paso, TX 79968-0543, USA

Telephone: 915-747-7747, Facsimile: 915-747-6282
Email address: tomf@utep.edu

Abstract

Greater cross-border economic integration in many regions has caused the field of border economics to expand rapidly. It has also occurred as a consequence of growing recognition of the necessity to examine economic phenomena within the unique contexts imposed by geo-political market segmentation. Some of the areas in which substantial research efforts are being directed include population, business cycle transmission, exchange rates, industrial development, labor markets, and natural resources.

1. Introduction

As a field of study, border economics is a topical area in which advances are taking place along multiple trajectories. Because there are so many dimensions to this general area of endeavor, it defies the type of broad categorization that is associated with other fields within economics. For purposes of this article, border economics will be treated as an intersection between international economics and regional economics. Although good arguments can be made that boundary economic analysis does not require the presence of an international border, a very large percentage of the studies completed in recent years involve multinational settings.

There are a large number of topics currently being investigated that employ approaches that are easily identified as encompassing both aspects of the working definition of border economics provided above. This paper provides a review of several topical groupings that is representative of what is occurring, but not exhaustive. For the subjects reviewed, the article attempts to summarize earlier results, current trends, and potential avenues for future efforts. Because there is no textbook treatment of "border economics" in the manner that there is for "international economics" or "urban economics," this task requires some effort.

While there is no textbook available for this subject, several topics of importance can be identified. Subject areas covered below include population, business cycle transmission, exchange rates, industrial development, labor markets, and natural resource economics. Because of the breadth of the various fields considered, and the large volume of research that has deals with them, the reviews are necessarily brief. The objective herein is not to be encyclopedic, but to offer a road map of where the field has been and where it may be headed in the near future.

2. Population

A large number of studies have analyzed the important ways in which border region demographics differ from those associated with the nations that lie adjacent to each other. Many of these studies involve borders between economies that are characterized by substantial income differentials such as Mexico and the United States (Brook and Peach, 1981; Pick and Butler, 1990; Peach and Williams, 1994). When accompanied by high rates of joblessness, income disparities between countries frequently result in migratory outflows from low earnings regions to higher income markets (Harris and Todaro, 1970; Borjas, 1994; Durand, Massey, and Zenteno, 2001). Such patterns have often been observed in border areas between Mexico and the United States (Orrenius, 2001; Fullerton and Sprinkle, 2003).

Regional economic performance differentials that are influenced by direct foreign investment patterns have also been shown to lead to domestic migratory responses that, in turn, impact upon international border metropolitan economies (Brannon and Lucker, 1989; Young and Fort, 1994; Pick, Viswanathan, and Hettrick, 2001). Labor and capital flows of this nature generally lead to important regional wage, income, and productivity impacts (Corden and Findlay, 1975; Bean, 1994; Peach, 1997; Weiler and Zerlentes, 2003). Because migrants are typically young, border metropolitan economies are often characterized by age distributions that fall below the national averages. One consequence of such developments is a variety of public finance pressures associated with increased public schooling and health expenditures (Peter, Schultz, Moser, Cox, Freeman, Ramirez-Zetina, and Lomeli, 1998; Mendoza, 1999; Suarez, Hendricks, Felkner, and Gunter, 2003). Along the United States – Mexico border, those problems will probably remain in place for many years. The El Paso – Ciudad Juárez borderplex grew from just under 1.1 million persons in 1981 to more than 1.94 million in 2001.

International boundaries frequently separate countries in which different languages are spoken. In those cases, immigrant earnings capacity is usually impacted negatively due to the difficulties of competing for jobs in a labor market characterized by a new language (Mora and Dávila, 1998; Dávila and Mora, 2000). Those language income gaps can also be worsened by human capital shortfalls (Chiswick and Miller, 2002; Hendricks, 2002). Cross-sectional econometric estimates using 1990 census data indicate that Texas border counties experienced aggregate income losses of approximately $6.0 billion due to educational attainment levels that lag behind the rest of the state (Fullerton, 2001a). Similar empirical evidence of wage premiums to educated

and skilled labor has also been reported for northern border cities in Mexico (Pagán and Tijerina-Gujardo, 2000; Ghiara and Zepeda, 2001).

One problem that currently hampers analyses of border region population economics between Mexico and the United States is the general absence of time series data on the breakdowns between international and domestic migration flows at the metropolitan level. Limited time series data are available for border counties in the United States from 1991 forward. At present, however, the same level of coverage is not available for municipalities on the Mexican side of the border. While cross sectional studies can be designed to shed light on different aspects on the interplay between demographics and the economy (Robertson, 2000), in-depth case studies of border metropolitan migration patterns are more difficult to engage. The latter include time series analyses involving studies of the interplay of cross-border business cycles between the two national economies. Development of those data sets will complement ongoing demographic studies regarding metropolitan area fertility patterns in border areas (Anguiano Téllez, 1999).

3. Business Cycle Transmission

Economic integration has increased throughout the global economy in recent years. This development has occurred in large measure due to worldwide advances in commercial and financial deregulation. It carries with it a variety of opportunities and risks (Sawyer and Sprinkle, 1986a; Hanson, 1996; 1998). While deregulation allows commercial exchange to occur more efficiently, borders still influence business development patterns in noticeable manners even between highly integrated trade partners such as Canada and the United States (McCallum, 1995). In addition to the structural changes that trade liberalization entails, there are numerous short-term cyclical events that affect economic performance.

Several of these have been analyzed in the context of the border between Mexico and the United States. Fullerton (1998) reports evidence of both regional and national business cycle impacts from Mexico on commercial electricity consumption in El Paso, Texas. National and regional economic fluctuations from both sides of the border have also been linked to variations in cross border cargo vehicle flows (Fullerton and Tinajero, 2002). Statistically significant impacts generally occur within periods of 365 days or less. In addition to sector-specific studies, model simulation performance has been shown to improve as a consequence of specification strategies that treat both sides of border metropolitan economies jointly (Fullerton, 2001b).

A variety of recent studies have examined the interplay between income fluctuations, public finance policies, and retail trade volumes across international borders (Ohsawa, 1999; Ferris, 2000; Moscove and Fletcher, 2001; Garrett and Marsh, 2002; Nielsen, 2002). Those modeling approaches are becoming increasingly important due to the introduction single-currency regions such as the euro zone of Western Europe. Prospects for further Latin American dollarization, whether formal or de-facto, also heightens the attractiveness of these models for border economies in many regions of the

Western Hemisphere (Gruben and Welch, 1996; Mendoza, 2001). Substantial empirical verification is still required with respect to the applicability of the various categories of these models to border retail markets. They represent a rapidly expanding segment of the field.

4. Exchange Rates

While the worldwide emergence of dominant currencies such as the dollar and the euro is easily observable, most border economies still conduct business transactions that are affected by exchange rate transactions. Currency market fluctuation impacts on retail segments have been studied closely for many years in border contexts (Greenfield, 1979; Prock, 1983; Sprinkle, 1983; Patrick and Renforth, 1996). Because of the 9 large-scale devaluations of the Mexican peso that occurred during the 20th century (1925, 1934, 1940, 1948, 1954, 1976, 1982, 1986, 1994), much of the research on this topic has concentrated on overlapping retail markets between Mexico and the United States (Hansen, 1977; González Gómez, Deantes del Ángel, and Pérez Sánchez, 1997; Hadjimarcou and Barnes, 1998).

A variety of studies have also emerged in recent years that utilize regional data to examine currency market behavior (Engel and Rogers, 1996; Engel, 1999; Clark, Sawyer, and Sprinkle, 1999; Engel and Rogers, 2001). Because of their utilization of microeconomic information that goes beyond the traditional macroeconomic variables historically employed, these studies represent welcome additions to the analysis of exchange rate behavior. In that respect, they augment many of the insights gained from cross border menu price and commodity price studies (Heston and Summers, 1996; Jenkins, 1997; Ong, 1997). There have also been efforts to construct border metropolitan data sets that take advantage of multiple product pairings from international business concerns (Asplund and Friberg, 2001; Fullerton and Coronado, 2001). The latter efforts provide good opportunities to more closely examine linkages between price variations and currency market fluctuations.

Many of the efforts to date employ cross-sectional empirical strategies in examining currency market interactions with retail conditions. A helpful next step in this branch of the field will be to engage in time series analyses of the cyclical impacts of exchange rate fluctuations in border economies (Fullerton, 2000). Such efforts will help document the vulnerabilities of these markets to international consumer purchasing power shifts. As border price and product data sets become more established, it will similarly be feasible to conduct econometric research on the temporal aspects of those interactions. Border markets also provide good opportunities to better examine the effects of non-traded goods and services on parity deviations in currency market settings (Engel, 1999).

5. Industrial Development and Labor Markets

Currency market fluctuations influence more than cyclical business conditions in border areas. The December 1994 devaluation of the Mexican peso accelerated direct

foreign investment in the in-bond assembly, or maquiladora, export manufacturing sector (Cañas, 2002). Maquiladora expansion from the 1960s forward has precipitated a number of important cross-border industrial linkages between the United States and Mexico (Cobb, Molina, and Sokulsky, 1989; Gruben, 1990; Hanson, 2001). The latter include a variety of notable impacts on labor markets and urban geographies on both sides of the international boundary (Hanson, 1998a; Calderón Villarreal and Mendoza Cota, 2000; Fuentes Flores, 2001; Mendoza Cota, 2001; Mendoza Cota, 2002).

A prominent change that has accompanied greater cross-border economic ties between Mexico and the United States is rapidly growing volumes of intra-industry trade (Sawyer and Sprinkle, 1986b; Ruffin, 1999; Clark, Fullerton, and Burdorf, 2001). That pattern is not exclusive to that region and is readily observable in other national and border economies (Balassa, 1966; Hanson, 1996). Empirical results to date indicate that this type of production specialization has mitigated the adjustment effects that are widely feared when trade barriers are dismantled. It also tends to improve overall performance by permitting economies of scale to be realized and encouraging innovation (Aitken, Hanson, and Harrison, 1997; Alguacil, Cuadros, and Ort, 2002).

Not surprisingly, the border region impacts of globalization have also been documented with respect to wages and salaries (Feenstra and Hanson, 1997; Hanson, 1997). Although increasing returns to labor carry generally favorable impacts, they may not always be accompanied by positive externalities in municipal public finances (Figlio and Blonigen, 2000). Because many border economies have limited tax bases, the effectiveness of development incentive programs in these regions is a topic that merits additional attention from researchers. As with other regional markets, border region evidence to date is not very encouraging with respect to property tax abatement programs (Fullerton, 2002).

Cross-border industrial linkages influence a wide range of regional economic outcomes (Love and Lage-Hidalgo, 2000). In the cases of city pairs that straddle the border between the United States and Mexico, complementary growth impacts have been documented (Hanson, 1998b). Statistical evidence of these effects can be difficult to uncover, especially in the presence of business cycle fluctuations and institutional framework differences (Atkinson, 1998; Paluzie, Pons, and Tirado, 2001; Will and MacPherson, 2001). A growing number of European and North American empirical studies have begun to isolate both spatial investment and dynamic payroll outcomes associated with these trends (Fullerton and Schauer, 2001a; Hubert and Pain, 2002). Additional research in this area would be helpful, at least in part due to the endogenous responses of international trade policies to this literature.

6. Natural Resources

Environmental consequences of industrial expansion and economic growth have long been the subject of border economic research. Many of these efforts analyze the negative externalities associated with economic expansion (Ojeda Benítez, Muñoz Luján, and González Navarro, 1998; Santes Álvarez, 2002; Jerret, Rey, Dufournaud, and Jones,

2003). Although relatively simple devices such as unit production taxes frequently offer efficient means of addressing non-market outcomes, international boundaries, trade negotiations, domestic politics, and other institutional constraints complicate this process enormously (Urquidi, 1995; Benarroch and Thille, 2001; Unteroberdoester, 2001; Hatzipanayotou, Lahiri, and Michael, 2002). Although these factors make the process difficult, a combination of foreign aid, cooperative emissions permitting, and public administrative innovations are in various stages of development and will continue to be refined in multiple border settings throughout the world (Blackman and Bannister, 1998; Blackman and Palma, 2002).

Similar policy design efforts are also occurring with respect to cross-border water management (Mumme, 1999; Peña and Cordova, 2001). Prospects for dealing with international water issues along borders in an efficient manner are relatively good in part due to the impacts of prices on consumption patterns (Giannias and Lekakis, 1997; Fullerton and Schauer, 2001b; Gaudin, Griffin, and Sickles, 2001). Numerous institutional barriers still remain with respect to water rights allocations and transfers, but effective pricing policies allow addressing shortages with minimal system breakdowns (Michelsen, 1994; Easter and Hearne, 1995; Jordan, 1999; Yoskowitz, 1999). Given those factors, institutional flexibility, demand estimation, and pricing structures will receive additional attention in the context of border economies for at least several years to come.

Regulatory issues and international politics have minimized cross border trade in energy services on a global basis (Sen, 2000; Newbery, 2002). Although those obstacles are problematic, enormous benefits can result from greater international public utility network integration that permits lowering both infrastructure fixed costs as well as unit costs of production (Averyt and Laber, 1990; McRae, 1991; Naini, 1998; Crampes and Laffont, 2001). To date, there have been several decades of limited wholesale electricity exports from private utilities in the United States to the Comisión Federal de Electricidad in Mexico. The California energy crisis of 2000 highlights the opportunity for northbound regional electricity exports from Mexico, also (Joskow, 2001). Greater cross-border energy trades will require more extensive system inter-connections (Woo, Lloyd, and Horowitz, 1997; Walde and Gunst, 2002). While this raises security concerns, international demographic and commercial growth undoubtedly mean that energy economics will eventually become a common topic in border contexts (Sheffield, 1998; Jaafar, Kheng, Kamaruddin, 2003).

7. Conclusion

Although still lacking a commonly recognized pedagogical home, border economics is a rapidly expanding field of study. This is in large part attributable to the numerous policy issues involving boundary areas between countries. It is also because of ongoing research advances in urban economics and in international economics. Research advances in those subject areas frequently generate a variety of spillover effects in borderlands research endeavors.

Empirical questions regarding border economic topics and border region markets performance abound. One cause behind that circumstance is the relative paucity of extensive data sets for cities located on international boundaries. In most areas, the data sets that do exist are asymmetric as a consequence of differing statistical collection practices and policies. Another contributing factor is the unique arena in which border economies operate – simply put, unilateral policy prescriptions that work well for domestic regions will frequently not be effective in border areas.

To reduce the number of empirical puzzles regarding border economies will require much greater research outlays. In the case of the United States – Mexico border, more coordination is required between universities on both of the boundary. Effectively doing so means funding dual research teams for most topics being analyzed. Additional funding is also necessitated by the need to collect new primary data or uncover little known secondary sources that are hard to identify. It is also very time consuming to design the types of bilateral policy recommendations that are needed to address the types of problems that are observed in border regions. The additional time and effort involved further raises the costs of carrying out border economic research.

A separate reason for the large number of empirical questions that remain unanswered with respect to border economies is the acceleration in demographic, commercial, and industrial expansion that has occurred in these markets in recent years. Much of that growth has been spurred by trade liberalization and other forms of business deregulation between national economies that are geographically adjacent to each other. It has raised numerous questions that cut across the various topics reviewed herein and will undoubtedly influence border research agendas, and policy design efforts, for many years to come. Unraveling the answers to those questions will also require research outlays that exceed what has been directed to them in previous years.

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Biographical Statement

Thomas M. Fullerton, Jr. is an Associate Professor in the Department of Economics & Finance at the University of Texas at El Paso. His research has been published in academic journals in North America, Europe, South America, Asia, Africa, and Australia.