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Rural
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Group**

**NAFTA AND THE NEW RURAL ECONOMY
INTERNATIONAL PERSPECTIVES**



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NAFTA AND THE NEW RURAL ECONOMY

INTERNATIONAL PERSPECTIVES

Richard Rounds, CRRF Series Editor

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Preface

One major session at the Gimli Conference concerned perspectives on international trade and rural economies. Three very different approaches to the topic emerged, both descriptively and conceptually, but all present a fundamentally important component to an assessment of the impact of globalization on rural areas.

Mexican scholar Dr. David R. Davila Villers views globalization as a force creating the evolution of three very different responses within the Mexican culture. His fascinating review of the "three Mexicos" provides insight for the rest of the world into how global forces can change the internal structure of a nation that is in some ways a first world nation and in other ways very "backward". The economic, political and social identification of various segments of the population are reviewed. Special emphasis is given to rural Mexico.

Italian economist Dr. Riccardo Cappellin approaches economic globalization from the perspective of regional economic structural adjustment in industry. Using Northern Italy as a case study, he examines the response of local and regional small and medium size enterprises to international competitive forces. Factors considered include propensity for export, the relationship between the number of SMEs and employment, and the importance of decentralization of industrial policies and of an active role for regional and municipal public and collective institutions in industrial policy. The paper describes the network of SMEs in the process of diversification and employment, the extension of networks at the international level, and the implications of this restructuring to a regional industrial policy.

American scholars Drs. Molly Sizer and Shirley Porterfield look at a different aspect of the rural impact of international trade agreements in the United States. The U.S. Department of Labor operates a Trade Adjustment Program through which workers displaced by NAFTA receive compensation for work displacement. Available data allow identification of both the type of industry/worker affected and the spatial distribution of manufacturing impacted by NAFTA. Utilizing the theories of international trade and the profit cycle, the authors predict and test hypotheses. Results indicate that workers and industries that are "less productive" (low-tech) are impacted most strongly. The fact that these industries tend to be located in peripheral regions (rural) reflects differential negative impact in rural manufacturing. Interesting U.S.-Mexican and U.S.-Canadian impacts are reviewed.

Acknowledgements

The Canadian Rural Restructuring Foundation held its 8th Annual Conference in Gimli, Manitoba in October 1996. Using the theme "NAFTA and the New Rural Economy" the 3-day event was designed to provide insight into the relationships between globalization processes and rural economies. Special attention was given to how rural businesses and industries are adapting and can evolve to be competitive under changing market structures. Both individual entrepreneurs and public organizations are changing strategies and policies as part of the new rural economic development effort.

This is the first CRRF Working Paper from the Gimli Conference. Emphasis here is on the international aspects of globalization. The three papers included discuss very different components of international impacts and responses to new trade agreements and environments.

An International Conference requires the combined efforts of many people to be successful. CRRF tradition involves the combined efforts of a host committee for local arrangements and other essential components of a conference. The regional Gimli/Interlake Conference Committee was comprised of many volunteers, whose combined efforts made the conference an enjoyable event. Special thanks are extended to Donnie Fridfinnson and Debbie Jensen of the Interlake Development Corporation who served as leaders for the committee. Maurice Bouvier of the NEICOM Community Futures Development Centre was instrumental in fund-raising. Andrew Dickson of Manitoba Agriculture organized the transportation and field excursion components of the Conference. Other local persons involved were Bill Barlow, Bill Budd, Kevin Chudd, Danny Gudbjartson, John McNairmay, Harvey Nikkel, Henry Sikora, Frank Woods, Sharon Bond, Loretta Hibbert, Myles Hodge, Hilmar Johnson, Allen Kokolski, Rick Lussier, Susan Nicoll, Janine Bray-Klimack and Danny Jo Sigmundson.

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The success of a conference also can be attributed to sponsors who contribute in various ways to ensure the realization of such an international event. We thank the following sponsors: Agriculture and Agri-Food Canada, Rural Secretariat; Canadian National Railway; Credit Union Central of Manitoba; Economic Developers Association of Manitoba; Faroex Ltd.; Human Resources Development Canada; Interlake Development Corporation; International Trade Centre -Industry Canada; Manitoba Agriculture; Manitoba Rural Development; Manitoba Telephone System; NEICOM Developments; Royal Bank of Canada; Rural Development Institute; R.M. of Gimli; Seagrams Canada; Town of Gimli; Western Economic Diversification.

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Three Mexicos in the New Rural Economy

International Integration/Domestic Disintegration

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UDLA-Puebla

Introduction

The recent economic evolution of Mexico can be divided into six different stages. Stage one (*Stabilizing Development*) spans the 25 years prior to the 1970's economic crisis. Mexico enjoyed a period of sustained economic growth, characterized by an average yearly growth of 6 percent in GDP, and a fixed exchange rate of 12.50 pesos per US dollar. Those were the wonder years of macroeconomic stability.

Stage two (*Shared Development*) covers only seven very intense years: 1970-76. Economic growth continued erratically, but there was a dramatic increase in the national foreign debt. Importantly, the Mexican peso was devalued twice at the end of this period. Third Worldism permeated the Mexican government and the state-owned sector grew enormously to account for 60 percent of the GNP. This period also is marked by an increase in social and political mobilization, and by a growing division between the Mexican government and business. The entrepreneurial institution was created in 1975.

Stage three (*Oil Growth*) runs from 1976 through 1982. Economic growth quickly accelerated thanks to the oil discoveries of 1974; but most growth was concentrated in the (state-owned) oil sector. The Mexican economy over-specialized in crude production. At the same time, the national foreign debt continued to grow. Unhappily, the oil riches of Mexico turned out to be a mirage. At the end of this period, the Mexican government nationalized the banking system.

Stage four (*Crisis and Recovery*) occurred between 1982 and 1988. After the oil bonanza came the time of reckoning. In 1983, Mexico went through an economic crisis. Many giant companies declared bankruptcy. In the middle of the crisis, however, the national economy was de-petrolized as oil prices plummeted. The government was left no option other than to declare a moratorium on foreign debt. Growth figures reversed.

In 1985, two major earthquakes devastated the capital of the country. The domestic market declined and national prices became "highly competitive" (meaning "miserably low"). Mexico began to export large amounts of manufactured goods that the domestic population could not consume.¹ In these circumstances, the national protectionist barriers were lowered, effectively opening the economy to foreign competition.

1 Up to 1985, only 35% of the total Mexican exports were oil and oil products.

Stage five (*the First World*), occurred between 1988 and 1994. The Mexican political system resented macro-economic pressure. When President Salinas inherited the country, the crisis was fading. An aggressive privatization strategy (debt for equity) made the foreign debt manageable while attracting large amounts of foreign, often speculative, investment. The dominance of the state, consequently, was considerably reduced.

Being a member of GATT, the OECD and the NAFTA, was Mexico not part of the First World already? Such a consideration, plus the return of macro-economic stability and healthy public finance made many believe that the dream had come true. Indeed, the Mexican economy was further integrated to the US economy. Mexico was supposed to grow at a sustained yearly 10 percent and to register an equally sound trade surplus. Calculations, however, were wrong!³

Three Mexicos in the Making

The fast incorporation of Mexico into the US economy is having a tremendous impact on the society and polity. Three distinctive Mexicos are emerging as a result. The *core-periphery* theory, *dual economy* theory, and *two speed-economy* approach (i.e.: Italy) cannot account for this ongoing development, because economics does not define or explain what is happening.

What is being described is three institutional speeds, three collective paces, three forms of occupying space, three rationales, three forms of efficiency (efficiency in economic terms, political terms, and survival-efficiency) three approaches to life, and three forms of social relationships. I have labeled them Mexico 1, 2 and 3 for explanation. In fact, they have appeared in history in reverse order.

Mexico-1

This is competitive Mexico. This Mexico arrives on time, experiences the stress of productivism and spiritual vacuum, is networked or getting networked, has relatively high salaries, occupies high posts in the public administration and in the (mainly but not only) service industry, speaks Spanish and foreign languages, drives (or is driven in) new cars, personal airplanes and helicopters (from atop high buildings in Mexico City), lives comfortably in nice neighborhoods or suburbs, eats in nice restaurants (eats more bread than tortillas), is body-conscious, travels abroad, stays in fancy hotels, holds international credit cards, is educated in fine Mexican and international universities, and attends international events and conferences.

Mexico-1 is integrated, or likes to think it is integrated, to the First World (it is "abroad" within Mexico), and that might well be its main source of power and prestige. This Mexico owns a computer (or several) and has, of course, access to all services (e.g., cellular telephones, fax, cable TV).

It is white-skinned or looks at itself as such. It is cosmopolitan, as money can be. It is very influential (on Mexico 2) but does not get organized in political parties; it rather forms pressure groups. It is the less ascriptive of the three Mexicos (all Mexico is ascriptive). Money rules over ascription. It makes money very fast and benefits greatly from "financial coup d'états". It is both "rational" and prejudiced. It incarnates "future" and "progress". It does function at the speed of money: its "time is money". Its life is paced by the stock-market, the banks and industry. Mexico-1 is a "projection" and can be more easily understood using the tools of the economic science. Religion and official rituals are subsumed in economics.

2 George Bush *dixit*.

3 The GDP official figure for 1995 was a negative 6.9%!

Mexico-1 suffers from complicated First World diseases which require expensive treatments, but it has access to the best private hospitals, and to the elite of the public hospitals (IMSS, ISSSTE,⁴ etc.) and, of course, foreign hospitals. This Mexico has well-paid servants, private gardens, consumes more than it needs (and pays with major credit cards). In its trash bins you can find old TV sets and radios. Mexico-1 likes expensive sports and hobbies. It has developed "economic reflexes" as it can buy whatever, or whoever; but, above all, Mexico-1 exists to sell. It can be found in all major cities of Mexico and in all the nicest parts of the country.

Included in this Mexico are: Mexican and foreign competitive corporations and companies, the modern agro-industry, some parts of the federal administration, some advisory cabinets, parts of the administration of the states, some private and few public universities and higher education institutions as a whole, some pockets of excellence in both public and private universities, some national newspapers, some elite groups in the national army and police, and parts of the Church hierarchy. Mexico-1 represents a tiny proportion of the national population, and should not be mistaken as a group by income, a political or social group (certainly is not politically coherent), and it does not act as a group. It is rather part, or a would-be part of an "international community".

Mexico-2

This Mexico sets the pace of the nation. Mexico-2 arrives almost on time, works at a slower pace than Mexico-1, is not networked, has medium to high salaries, occupies medium and high posts in the public administration and in the industry, speaks Spanish and can speak foreign languages as well (it is mimetic), drives used cars (more persons per car than Mexico-1; typically a Volkswagen bug) and uses public transportation, lives in standard neighborhoods or suburbs, eats in "comida corrida" restaurants (bread and tortillas), with more calorie and protein intake than Mexico-3. Mexico-2 is not body-conscious, seldom travels abroad, stays in pensions and medium class hotels, holds national credit cards, is educated in Mexican universities, and attends national events and conferences. It has access to the telephone and fax machines (and of course, its elite exhibit cellular telephones and pagers). It watches the national TV channels and listens to national radio stations.

Mexico-2 wants to be white (it is mainly *mestizo* and *criollo*). Mexico-2 protects Mexico-1 from Mexico-3 (it sees Mexico-1 as the "future" and as an agent of change). It does have a job. This is organized Mexico, it is "permanent" and defends the "status quo". Mexico-2 sets the standard of the nation, represents Mexico as a nation (it actually is a representative sample), and is not integrated, as a whole, to the First World. Its life is marked by the political calendar (power is national): elections, national politics, the "destape". In that respect, its life is subject to stress. It is politically ascriptive: by region, education, political party, family bonds.

This Mexico has institutionalized the myths of the nation. In the past, it attempted and failed to laicize the nation. Mexico-2 is the national structure, and can be more easily understood using the tools of political science. Mexico-2 is *national*, and its international activity is nationally based. Its economic activity is ruled by the political. It has developed political reflexes, its elite can force whatever or whoever to comply with the rules of the nation (this reflex exists from the higher ranks to the lower bureaucrat). If Mexico-1 sells, Mexico-2 concedes.

4 IMSS (Instituto Mexicano del Seguro Social), ISSSTE (Instituto de Seguridad y Servicios Sociales para los Trabajadores del Estado) are the main two social security institutions, the first is for workers of private companies, the second for state workers.

Mexico-2 has secured access to social security (IMSS, ISSSTE, etc.), and has domestic servants, but increasingly uses part-timers. It has almost no-credit these days (it is indebted). Mexico-2 likes physical endurance national sports (soccer and boxing), and private and public gardens. This Mexico manages to meet its needs (or almost) but leaves no trash to be re-used.

Included in this Mexico are most Mexican companies, most of the national private agricultural sector, most of the federal and state level administration, most of the educational sector, big regional newspapers, the national army and police as a whole, and most of the religious body of the country.

Mexico-2 represents a sizable proportion of the national population, and should not be mistaken for an income group, or a political or social group. It is coherent around national values, and sees itself as "the nation". It reclaims the monopoly of conduct of foreign affairs.

Mexico-3

This is a messianic Mexico. It represents the nation's past and roots. It can produce saints, virgins, wizards, a leader in a ski-mask (Marcos) or a masked wrestler, city-dweller, champion (Superbarrio). It is often cosmogonic. Mexico-3 is the champion of survival and resistance. Its "economic" and "political" activities are geared towards survival. It is the Mexico of rural and urban economic poverty.

It includes the sub-employed and unemployed, as well as a great deal of the informal economy. It is local, but can emigrate (and can be reinforced by southern emigration). Mexico-3 has no visible purchasing power or credit. It re-uses Mexico-1 and Mexico-2 trash. It cannot afford a life and it dies young.

This dark-skinned Mexico has its own notion of time (it appears to be timeless) marked by climatic seasons and religious festivities. It does not experience the stress of productivism; its main worry is survival. It has low income, occupies no permanent post in public administration or industry, does not speak foreign languages (but often can speak Indian languages), uses overcrowded public transportation, *pesero*, 2nd class buses, trains, horses, mules, and it walks. It lives in poor housing. It does not have servants (it is often a servant itself, with women taking the worst part). Mexico-3 is increasingly female.

This Mexico eats more tortillas than bread, in "*fondas and taquerias*". It has very low calorie and protein intake. Not surprisingly, this Mexico suffers the most from epidemic and endemic diseases (cholera, TB and poverty-conditions).

Mexico-3 works manually, does not travel abroad (but can emigrate), seldom stays in hotels, is nearly illiterate, plays "llanero" soccer, likes boxing, wrestling, low-class movies, and has access only to the most powerful of the national TV and radio stations. It goes to almost grass-less public parks when it is urban, or to the town centers when it is rural. This Mexico has almost no access to the telephone (including rural telephony). This is backward Mexico. Mexico-3 has almost no contact with Mexico-1, let alone the First World. But it can suddenly gain international salience. When it does, its international activity is locally based.

If Mexico-1 sells and Mexico-2 concedes, Mexico-3 trades in kind, as it has developed submissive reflexes in relation to Mexico-1 and Mexico-2 (that is: in relation to money and political power). Within itself, however, Mexico-3 has developed extraordinary solidarity bonds.

It is difficult to understand Mexico-3, because this Mexico has been *denied*, and then selectively incorporated and institutionalized into "modern" Mexico. Mexico-3 constitutes the very foundation of the nation, as well as the byproduct of the national economic "development": urban misery. It can be more easily understood using the tools of history and anthropology.

Included in this Mexico are most of the non-permanent workers of the national industry, most of the small and micro industry itself, the Mexican countryside as a whole, some parts of the backward municipal administration, even parts of the administration of certain federal states, even some public and private so-called "universities" and education institutions (all "provincial universities"). But mainly, this Mexico is composed of the miserable, the destitute, the disenfranchised, the marginalized.

Mexico-3 represents a large proportion of the national population, and it does constitute a group by income. It is defined by its lack of a stable and permanent income. It is not coherent, neither does it act as a group. Beware when it does for it might not have anywhere else to go if it is pushed to hard.

A Group Picture of the Three Mexicos

The group picture of the three Mexicos would look, in my view, as a smoking volcano. The skirts of the volcano would gather Mexico-3, a Mexico shaped by tradition and custom, bordering with Mexico-2. This is the unorganized society. Every time that a group of illegal Central Americans crosses the Mexican southern border, or a new crisis occurs, Mexico-3 increases in numbers. This Mexico has almost no contact with Mexico-1 (except through a window when a red light stops a luxury car, or when an anthropologist decides to live among the poor people). This Mexico is very ingenious, like a hungry coyote.⁵ The search for survival gives meaning to its collective action.

Mexico-2 gives shape to the volcano. Mexico-2 incorporates, frames, formalizes, recruits, educates, and disciplines (labor, political militancy, etc.). It is law and order. It knows its way through, like a lawyer. The search for political power gives meaning to its collective action. Every time a Mexican gets a permanent job, or an education, or enters the army, or the party, Mexico-2 grows. The border between Mexico-3 and Mexico-2 is, thus, formal. Neo-liberalism and the consequent trimming of the state have weakened Mexico-2 in economic terms.

Mexico-1 occupies the snowy peak (and smoke) of Popocatepetl. This Mexico wants to de-incorporate, does not want to be framed, formalized, recruited or disciplined. It sees itself as the incarnation of change and transformation, like a stock-broker does. When part of Mexico is trans-nationalized or inter-nationalized, Mexico-1 gets stronger. The border between Mexico-2 and Mexico-1 is, thus, informal.

Origins of the Division and How It is Being Affected by Mexico's Integration into the US Economy

Mexico has long been noted for its political stability, centered around the PRI regime. For many years, the Mexican state represented all Mexicos together. It was the main agent of change, and the promoter of welfare. It helped the rich to get richer, and poor to be less poor. It protected the rich against foreign competition by erecting commercial barriers, and it gave the poor some relief (education, health, etc.). There was a consensus that state intervention was needed to correct the imbalances produced by underdevelopment.

Consensus around the developmentalist approach disappeared at the beginning of the 80's, owing to notorious governmental incompetence, corruption, and scandals. Public enterprise was synonymous of inefficiency and corruption. Private enterprise (until recently) was supposed to be the opposite.

5 Nezahualcoyotl ("hungry coyote") was the most clever of the Aztec monarchs.

Enter **globalization**, an unfortunate term for a process that is not globe-shaped. The so-called globalization is very irregular, and implies the strengthening of the complex inter-dependent links only between First World countries. Some Third World countries' dependency links with some regions of the First World are just being modernized. You have only to think of countries like India and China, which concentrate most of the population of the globe, to laugh at the "unglobally" globalization.

In the case of Mexico, "globalization" has brought about the growing division of the Mexican society that I endeavored to illustrate. One of the main ingredients for this explosive cocktail (a spitting volcano, in my illustration) is, of course, the latest information revolution, which is increasing the institutional speed of Mexico-1, in relation to the other two Mexicos.⁶ But access to computers is not the only factor explaining the process.⁷

We are talking about three different ways of occupying a space (economic possession, versus sovereignty, versus physical presence). Implied also are three forms of timing (Mexico-3 lives a shorter life, Mexico-1 lives a longer and hectic life, Mexico-2 defines the national time). In other words, we are talking of three Eco-Nomies which imply three different efficient utilizations of space and time (with three different rationales).⁸

Uses of This Framework

What is happening in Mexico is illustrative of what might occur to all big underdeveloped countries that are presently being inserted into the First World. I do not think that small underdeveloped countries can go through a similar process. That is the subject of another paper. This paper is only a first approximation of the subject. However, my views are counter to non-holistic approaches; specially those grounded in economics alone.

Notes on a Possible (and Extravagant) Bibliography

I have been trying to determine how to produce an adequate theoretical framework. I have thought of Tönnies (on *ascription*), Durkheim (on *social solidarity*), Weber (on *collective action*), Norbert Elias (on the civilization process), Edgar Morin (his search for a new paradigm), Jean-Marie Vincent (on a *critique of work*), Karel Kosík (on *the quotidian*) and many other authors, mainly philosophers. But since I do not belong to Mexico-3, I do not deem it necessary to tell you more about my saints, whose lives, believe it or not, were good and holy.

What could I ever do with all those fine philosophers together? Could I ever find statistics to justify my points of view?⁹ That might be the easiest part of my job. Official figures, for example, show that 60 percent of the Mexicans are undernourished, that 40 percent are functionally illiterate, etc. At the other extreme, only few Mexicans (10 percent of the total; roughly 10 million) concentrate more than half of the national income. I can also document the fact that Mexico-1 and Mexico-3 elude corporatized Mexico (that is, Mexico-2) because of their different institutional speed and rationality, as I have been arguing.

6 There are about two million personal computers in the country. According to INEGI (National Institute for Statistics, Geography and Informatics) only 5 million Mexicans know how to use a computer.

7 Therefore, Mexico needs a president that is a consummate populist (to rally the people behind him) and a skillful technocrat (to bring the economy afloat).

8 At the end of the day, Time and Space are just two measures of Matter: Time indicates its aging, Space its extent. Space and Time need to be defined in the social realm; thus the collective existence of my three Mexicos.

9 It is easier to lie without than with statistics!

Preliminary Definitions

My main problem, then, is to theorize, in holistic terms, the three Mexico's. A preliminary definition is offered. Mexico, as I have said, can be divided in three, as follows:

Mexico-1	Economics	Pressure groups	Individual
Mexico-2	Politics	Parties, unions, etc.	Mass politics
Mexico-3	History and Anthropology	Social movements	Communities

Everything that has been said illustrates that one is dealing with three forms of *integration/disintegration*¹⁰ processes at a social-institutional level. Three forms of *socio-political integration*, out of the former "unity" represented by the Mexican corporative all-inclusive state. These three layers in the Mexican society act according to three rationalities (economic gain, political gain, and survival) and can be better understood, respectively, by using the tools of economics, politics, and history and anthropology.

In other words, what I am describing is the rise of social divisions, in an unfinished process, that could eventually crystallize into three different social configurations within the Mexican society. The unfinished character of the process is precisely what leads to the use of terms like "institutional pace" and "collective speed". Should these dynamics continue, the three emergent Mexicos may crystallize into identifiable social configurations with the characteristics outlined.

In a class of its own though, this process embraces, in odd ways, different aspects pertaining to concepts like *quotidianity*, *socialization*, *reproduction*. But largely a result of its unfinished, transitory character, this re-configuration of the Mexican society goes beyond the reach of such concepts. It can rather be said that quotidianities, socializations and reproductions are indeed being re-defined.

Behind this process is the changing nature of the economy, the political power and labor in the Mexican society. The economy is transnationalized, and its leaders are much more responsive to international market and financial information than to national indicators. The stock market (highly sensitive to changes in the New York stock index) gives the pulse of the national economy as never before.

The political power is also changing, with the decay of the all-inclusive, corporatist, populist Mexican state. The *trimming* of the Mexican public sector of the economy and brutal reduction of the traditionally insufficient national welfare system has severely diminished the clientelistic ascendancy of the PRI-government, and has given new meaning to the struggle for political power. The over-concentration of power in a single person, the President, seems doomed to fade away, as the PRI-system accelerates its demise. The Mexican polity has grown more complex. The civil society is stronger.

Labor also is transformed. There is a lack on centrality, a lesser importance of contemporary blue-collar workers in industry, due to the new, service-oriented processes of production. The informal sector of the national economy has acquired gargantuan dimensions fueled by chronic unemployment

10 With systolic/diastolic movements.

and underemployment and unremitting crises in the countryside. There also is a decrease of unions' political influence, as affiliation to the main unions and confederation continues to decline.

The result of such transformations is the emergence of new social divisions characterized by three different collective speeds, marked by paces of different institutional nature. The three different paces (the *internationalized*, the *National*, and the *communitarian*) correspond to three different kinds of institutions (setting different calendars) and quotidianities. The three Mexicos basically aim at three different general objectives and those can be summarized as being *economic* (the logic of capital accumulation), *political* (the logic of political reproduction) and *communitarian* (the logic of survival and community preservation).

The nature of the National political institutions enhances formal separation between the three Mexicos with those pertaining to the other two Mexicos placed above and below the National institutional framing. Internationalized Mexico wants to escape the National institutional frame, while Communitarian Mexico cannot get into it.

Their sets of institutions are central to each one of the three Mexicos; their activities, aims and timing revolve around such social constructs. Institutions like the stock markets of Mexico and New York, the banks, and all sorts of international financial indicators pace out the life of Internationalized Mexico. Its quotidianity is molded from its life in rich neighborhoods and suburbs, foreign schools, elite clubs, expensive cars, fine restaurants and holidays abroad. Internationalized Mexico lives in a world of bounty, it leads a fairy-tale life.

As for National Mexico, institutions of statesmanship creation pace out its life: the President's agenda, the Legislative Power sessions, the courts, the official calendar of the National University and other schooling systems, the elections, the union elections, the major political moves and alliances. National Mexico can afford a life thanks to the public institutions, it lives within the welfare state.

The quotidian life of National Mexico is shaped according to the national, state-permitted standards: lodging, education, health care, markets, sporting facilities, used cars, spicy food and national holiday resorts.

Communitarian Mexico is arranged following agricultural cycles, promiscuous dwelling, early incorporation to home duties, under-employment, unemployment and apprenticeship of urban and rural handiworks, religious festivities, communitarian and local institutions pertaining to ethnicity, region and language. Communitarian Mexico is excluded and marginalized, it leads a life of deprivation.

Quotidian life in Communitarian Mexico is marked either by its limited non-permanent access to jobs, basic schooling, public health systems and land, or by its complete exclusion from such goods and services. Life in poor communities (rural or urban) bear on strong solidarity bonds created to survive in very hard, helpless conditions.

The Three Mexicos in Rural Space

Mexico has a continental area of 197.7 million hectares. Of this only 12 percent are arable. The rest is too dry, too humid or too mountainous for agriculture. Most of the 23.9 million hectares (about 18 million) is non-irrigated and it is planted in annual crops. Some 5.8 million hectares are irrigated. If we consider that Mexico has approximately 90 million inhabitants, that gives 0.26 cultivated ha/capita; which is well below the average for North American (0.75) or South America (0.43).

In addition, erosion is a very serious problem for Mexico. At least 81 million hectares are considered eroded, with 29 million *severely* and *very severely* eroded, and 16 million already turned into a desert.

This is a tragedy for the very rich ecosystems in Mexico. Data from Conservation International and WWF estimate that Mexico is host to the highest variety of reptiles in the world (717 species), second in mammals (449 species), and fourth in amphibians (282 species). There are more than 1,010 varieties of birds species (30 percent more than in the US and Canada combined). Mexico has 2000 classified genera of flora, more than 50 percent of which exists only in Mexico.

Land is highly concentrated in the hands of a few owners: 91 percent of the agricultural units possessed 17 percent of the land in 1980, while 9 percent of the units control 83 percent of the land. At the pinnacle of land ownership, 0.2 percent of the farms were of 1.5 thousand hectares in average size, while another 0.2 percent had an average size of 6,794 hectares.¹¹ Conversely, 54 percent of the land was worked in less than 20 ha units.

We can estimate the Mexican Economically Active Population in primary activities at 6.6 million, out of which the *campesinos* might well be 2.3 million.¹² A large proportion of the Mexican rural population, between 51 percent and 97 percent, is below the poverty line; that is, between 43 percent and 80 percent of the rural households.

In the Mexican countryside the division between the three Mexicos, so far illustrated in generic terms, acquires very specific contours. For life in the agricultural sector is organized around the crop which is cultivated and the way it is cultivated. The three institutional speeds stand out in bold relief.

In the countryside, the integration/disintegration process (from two to three Mexicos) has a variant.¹³ In the urban space the three Mexicos emerged out of a fracture in the former elite. In the countryside, a double movement took place: 1) the crisis of Mexican state intervention in the countryside: the demise of the national agrarian reform, and 2) the phenomenon of *neo-latifundism*. In other words, first we had the re-privatization of the Mexican countryside, and then its transnationalization.

Rural Mexico-1

Rural Mexico-1 is a world-class producer of foodstuffs. It is organized around individuals, and multinational and national companies (it includes, of course, the elite of their technicians) that produce for the international markets.¹⁴ Its lands are irrigated, but it can also choose to associate with local producers. It possesses capital, the best seeds, the latest techniques, and fertilizers, and practices permanent innovation. It is, in fact, part of an international agro-industrial exporting complex, and it organizes and attends international agro-industrial fairs. Some of the chief national crops are associated with Rural Mexico-1; particularly *wheat*, *tomatoes* and *forages*. Traditionally, its strongest geographical base is located in the Northwest of the country (Sinaloa, Bass California) and the state of Colima. It can, of course, be found elsewhere. Mexico-1 is the most able to "escape" the tyranny of excessive rain or drought¹⁵ and of the natural agricultural cycle: it can decide what and when to cultivate. Its main enemy

11 Negrin M. José Luis. *Análisis del Minifundio en el Agro Mexicano*. México, Instituto Lucas Alamán. 1991.

12 See *Los Productores Campesinos*, article by Kirsten Appendini in Calva, José Luis. *Alternativas para el Campo Mexicano*. México, Fontamara-Friedrich Ebert Stiftung-PUAL-UNAM. 1993. p. 195-211.

13 This will be explored in a future paper.

14 During the last three years, more than 230 agro-industries in the state of Veracruz invested US\$ 2,757 and generated 6,072 jobs. The investment went to the production of pigs, chicken, mushrooms, citrus, coffee and juices. *La Jornada* [Mexico City newspaper], 5 May 1996.

15 Mexico is facing its worst drought in the last 50 years. The state of Sinaloa, in particular, with its dams at 13.2% capacity, is reserving the water for human consumption only, in three barrages: Sanalona, Adolfo López Mateos and José López Portillo. The Mexican dams are at 22, 17, 30 and 55 percent capacity in the NW, NE, Center and South of the country, respectively. Six million hectares will be left idle this year (approx. 3 million tons of maize and beans) among which, 740 thousand hectares of irrigation crops. The drought is badly affecting the states of Coahuila, Durango, Chihuahua,

is international commercial protectionism. Its life is timed by the futures markets (Chicago, etc.). It worships the Holy Money, in the form of elevated rates of returns.

Rural Mexico-2

Rural Mexico-2 encompasses the bulk of the small private farms, some of it irrigated, as well as subsistence agriculture (the subsistence ejido). It produces mainly for the national market and also exports. It is organized around *rice*, *oleaginous crops*, *coffee*, *sugar cane* and *tobacco*, and it organizes and attends local and national agricultural fairs. It used to have access to credit, but it is now heavily indebted, like the whole of the nation. Rural Mexico-2 is somewhat mechanized, thanks to the "Institutional Revolution", but it does not use fertilizers. It works its mostly seasonal land at the pace of oxen yokes, and tractors. Rural Mexico-2 is framed in the realm of mass politics. It is either corporatized in PRI-affiliated mass organizations or (lately) organized in independent farmers' unions. Its main dilemmas can be phrased as the crisis of the state intervention in the countryside, and the demise of the Mexican agrarian revolution. Its life is timed by political requisites (the Ministry of Agriculture, the CONASUPO,¹⁶ the Ministry of Commerce) and by the Central de Abastos in Mexico City. Some criollo and mestizo saints and charismatic leaders are objects of its religious veneration.

Rural Mexico-3

Rural Mexico-3 includes the infra-subsistence ejido. It also includes those campesinos which do not possess land or have a job on a permanent basis.¹⁷ It is associated with the traditional Mexican crops (*maize* and *beans*), but it does not produce enough or retain enough to feed itself.¹⁸ You can probably find some of its produce in the local town markets. Is it necessary to say that Mexico-3 does not have access to irrigated land, nor credit or fertilizers. It also is not receiving sufficient aid.

Its crises are Third World crises. This dark-skinned Mexico, that includes the Indian part of Mexico as a whole, is concentrated in the *Deep South* of the country; which is to say, mostly in central and southern Mexico.¹⁹ It leads a communal life. Its main aim is the reproduction of the community. Its life is timed by the maize cycle, by the rainy seasons, the oxen yokes (when available), the barefooted journey, and religious festivities. Rural Mexico-3 is dramatically poor and increasingly female. It prays a lot, and God knows for how many years, now. But its saints — Indian-like saints — pretend to be deaf. In many communities, those that have not emigrated are either too old or too young to escape.

Tamulipas, Nuevo León and the Laguna region. Cfr. *Epoca* [Mexico City magazine], 29 April 1996.

16 Comisión Nacional de Subsistencias Populares.

17 From this point of view, a *jornalero* (seasonal worker) could fall in Mexico-2 if he can secure frequent seasonal jobs, possesses a plot of land, is unionized, etc.

18 The Monterrey based agro-industrial group *Maseca* (owned by Roberto González) should be given careful consideration for its impact in the production of maize products. *Maseca* claims that it will produce 50% of the tortillas in Mexico, during 1996. Cfr. *La Jornada* [Mexico City newspaper], 5 May 1996.

19 Aguascalientes, Campeche, the Federal District, Guerrero, the state of Mexico, Nuevo León, Oaxaca, Puebla, Querétaro, Quintana Roo, San Luis Potosi, Tlaxcala, Yucatán y Zacatecas: old Mexico! It can also be found in all major Mexican and American cities.

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Regional Embeddedness and International Integration: The Case of SMEs in North Italy

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Introduction¹

A modern industrial economy is comprised of a few large firms, mainly involved in basic industry and mass production, and a high number of small and medium size firms (SMEs). The increasingly sophisticated needs expressed by the final consumers, by intermediate demand for specialized components by other producers and the increasing complexity of technology create ever-increasing opportunities for the development of small and medium size firms. However, these opportunities can be exploited only when the small and medium size firms are capable of operating in international markets that are extensive enough to allow a strategy of high specialization of individual firms.

This paper examines various factors that indicate the international competitiveness of firms, especially that of SMEs which depend on their relationships with the local environment. The paper supports the hypothesis that a high export propensity, the creation of numerous SMEs and low unemployment levels are interdependent aspects which characterize the specific development model of the North Italian regions. Indicated is the crucial importance of a decentralization of industrial policies and of an active role of regional and municipal public and collective institutions in the field of industrial policy.

The paper first describes the network of relationships among the SMEs and the process of diversification and employment creation. Second, it will illustrate the gradual extension of this type of relationship at the international level and the obstacles in the process of internationalization of SMEs. Finally, it will analyze the implication of this pattern of development for a modern strategy of regional industrial policy.

From Local Production Systems to Interregional Territorial Networks

The endogenous pattern of industrial development of the regions in North Italy is similar to that of other European regions in Germany, France and Spain. The economy of the area is articulated in numerous local production and technological systems. During the 1960's and 1970's, this pattern of industrial development was identified as the "industrial districts" (Becattini 1990). However, in the last

¹ This paper is mainly based on a series of studies on the industrial structure and the internationalisation process of the Three Veneto region and of the northern part of Lombardy carried out in the period 1992-1994 through a series of interviews with large and medium size firms and with public and collective organisations active in the field of local industrial and territorial policies. The author thanks Luigi Orsenigo for collaboration in some of these studies and for useful discussions.

decade it evolved towards new forms of organization, as indicated by the appearance of financial groups of SMEs and of interregional and international "networks".

A local production and technological system is not only a concentration of specific productive units, but also a specific organizational form or a "governance structure" of transaction costs (Bianchi, 1990; Cappellin, 1988a). For large firms the territory is the simple object of changes in the production levels and in the organization of the firm. The territory, however, performs a more active role in the case of the small firms and represents the set of external resources which to a large extent determine the development of the individual firm.

According to the regional endogenous development model a local production and technological system is characterized by both a territorial and a functional dimension. The basic characteristics of this model are:

- 1) a decentralized decision making mechanism based on the cooperation of various firms, each of which performs individual phases and different productions that are complementary. The regional society is highly integrated internally and there are consolidated relationships among the various regional actors. The decision making mechanisms are more flexible than in other regions and insure a faster pace of change of the economic system and of the civil society; and
- 2) the existence of a tradition of specific know-how that has been developed over time, which is not easily transferable to other locations and which is capable of promoting new products owing to the existence of dynamic economies of scale.

In a long term perspective the model of territorial production and technological systems has undergone important changes, which have changed both of the above characteristics (Cappellin 1994a, Cappellin and Tosi 1993). The increasing importance of technology and the internationalization of economies has transformed relationships among the firms, which have become more complex, face higher risk, and must adopt a long term perspective. This has stimulated new organizational forms and contractual arrangements capable of managing these new relationships (Cappellin and Nijkamp, 1990; Ciciotti et al. 1990; Cappellin, 1992b).

Therefore the basic characteristics of the evolution that has occurred in the last two decades appears to be (Cappellin, 1992b and 1993d):

- 1) a shift from informal relationships to more formalised relationships among the various firms, producing more stable relationships with the subcontractors, rather than the originally flexible and reciprocally trust-based relationships of earlier development; and
- 2) an increasing importance of interregional relationships rather than restrictive dealings with other local firms. The increasing internationalization of SMEs implies the establishment of formal links with firms located in other regions or the creation of offices or plants abroad with commercial and production functions.

This process is not simply revival of the hierarchical model of large firms. On the contrary, it may be defined as the evolution from "industrial district" to the new form of a "network" at the interregional and international level.

The Evolution of Subcontracting into Forms of Quasi-Integration

The original characteristics of a logical production system and its strengths in the framework of international competition do not emerge clearly when one observes the individual firms, and does not focus the attention on the working of the overall local industrialised system. The local production units in North Italy represent a complex system of subcontracting relationships and of relationships between producers and users. These local production systems cannot be interpreted accurately by using the well-known model of "industrial districts" (Becattini, 1990). The process of internal restructuring of large firms and the increasing importance of medium size firms have resulted in major changes in these systems.

On the other hand, while the model of industrial districts characterizes some localities in Italy, which represent a rather limited share of national industrial employment, the model of local production systems or of territorial networks has a broader applicability to all regions of North Italy, with the exceptions of a few areas dominated by large firms. This model may be extended with minor modifications to other regions in Europe, and especially to those where the industrialisation process has been especially important after World War Two (e.g. the regions north and south of the Alpine arc in Germany, Austria, Switzerland and France).

The Evolution of Subcontracting Relationships

Subcontracting relationships are evolving towards new forms of cooperation in the field of technology, finance and commercialisation. This evolution does not follow a well defined pattern designed according to formal long term strategies, and both SMEs and large firms seem rather to follow a pragmatic approach of "trial and error".

All firms believe that being competitive requires a greater focus on the aspects of production in what an individual firm has as a competitive advantage, and the parallel decentralization of non-strategic phases, which could be performed with lower costs and higher quality by specialized suppliers. However, the firms perceive a need for control through agreements with other firms in all phases of the production "filliere" or of the chain of the value added creation.

The subcontracting system has assumed a hierarchical character and represents a pyramid comprised of different levels. In a geographic perspective, it is articulated between various contiguous provinces, and increasingly between distant regions and between different countries.

Subcontracting relations assume different forms and cannot be identified with the small handicraft firm working for only one client, often by evading fiscal regulations. Nor is it similar to a firm which does not have its own trademark but which complies to the specific indications of the main contractor. Subcontracting is increasingly represented by a system in which firms do not produce for their warehouse or for the final consumer, but rather according to the orders of other firms. However, both the number and the distance of the clients of the subcontractors are increasing.

This process has been described as the creation of a "constellation" of subcontractors around a group of "leader" firms, which have the direct contact with the final market. The relationships within these constellations are increasingly formal and stable, but they are not exclusive. In fact, various subcontractors connect the different constellations of the major firms among themselves.

Subcontracting originally was driven by the demand of many specialized components for a main contractor, but now is extending to the phases downstream from the production phase. New subcon-

tracting agreements are established in order to have more direct access to the final market with specialized service firms, such as logistic intermediaries and commercial distribution firms.

The relationship between a subcontractor and a main contractor is evolving from a simple commercial relationship toward more complex forms having a strategic character. According to the model of comakership, the subcontractor, or the supplier, has an increasing autonomy and is supposed to guarantee an original contribution to the quality of the final product through technology, specialized machinery, design and delivery time. This implies greater technological and project design capabilities by the suppliers, and thus more stable relationships between the main contractor and the subcontractor, in order to promote bilateral flows of information.

Investment is increasing in specialized production capacity and technological capabilities of the subcontractor. Moreover, the subcontractors also assume the function of locating financial partners to sustain operations owing to often delayed payments, high financial costs and access to bank credits. This decreases the need for credit by the main contractor.

The development of a complex system of subcontracting, articulated in different layers, increases the circulation of intermediate products and makes crucial a greater logistic coordination at the various levels of territorial hierarchy. The advent of outsourcing or decentralization of production stimulates the development of specialized logistic services and new organizational relationships among the firms, which facilitate the overcoming of increasingly larger geographical, technological, social and cultural distances among the firms.

In the past large firms were the only ones capable of integrating their hierarchical organization into various production units and to produce internally the logistic services needed. Now, the development of these services and organizational procedures may insure the same competitive advantages of large firms to SMEs in some regions. However, according to a regional policy perspective, the existence of low accessibility, owing to either peripherality or congestion costs, and an inadequate structure of the logistic activities implies that the SMES of some regions face serious obstacles in participating in the national and international networks of subcontracting.

Thus, the model of organization of SMEs in North Italy is characterized by:

- a continuous change of the relationships among the firms;
- an increasing openness of the firms towards the external environment and other firms and towards the international economy; and
- the development of specialized intermediaries and services.

The Importance of Cooperative Behavior

While the literature on industrial districts often has underlined the importance of cooperative behaviors among the firms, cooperation may assume different aspects within a network model of organization, and often it creates situations or conflict. Direct cooperation between firms operating in the same sector is rare. On the contrary, cooperative behaviors seem to characterize more the vertical relationships, or firms linked by subcontracting relationships, than horizontal relationships between firms located nearby, but operating in the same production sector.

However, the danger of foreign competition and the need to define joint lobbying activity and to intervene in the definition of regulations on quality standards are increasingly leading firms to cooperate in the framework of sectoral associations. These have mainly a national character, but also may have a regional character since most of the producers of a specific sector may be concentrated in the same region.

Cooperative behaviors exist first among the members of the same entrepreneurial family. Frequently the firms experiencing faster development are those where different brothers or different generations cooperate. Financial factors often lead to stable alliances between various entrepreneurial families, which may be linked within joint-ventures in different firms and production sectors. In fact, the process of industrial development in the areas characterized by SMEs is tightly connected to the family character of local entrepreneurship.

The aim is to insure employment to all members of the family or of the various families participating in the same group of firms, and to promote a sense of responsibility within the members of the younger generation to insure a future of autonomous entrepreneurial activity. These are major factors leading to diversification of production, to the division of labor into various firms and to the specialization of each firm of the same entrepreneurial group in different fields of business.

In this perspective, the organization of firms is based on a decentralized model. Often, no member of the entrepreneurial family becomes too visible in the external world. Rather, each one becomes capable of working autonomously within the organization starting with the lowest tasks. There is a great care to maintain consensus among the original shareholders, even if this requires renouncement of partnerships with other entrepreneurs, or of an opportunity to expand the original firm.

On the other hand, the cooperation of the various members of the family allows an integrated management of financial resources and forms of strategic integration, which enable fast withdrawal from endeavours which are declining in order to concentrate the resources into new fields in rapid development.

Cooperative behavior also may be indicated by the existence of a favourable social climate and by relationships between entrepreneurs and their labor forces based on reciprocal esteem and trust. In fact, the "flexibility" of labor force is more important in national and international policy debates than as a crucial factor for SMEs. On the contrary, SMEs try to limit the turnover of employees and generally recognize that the quality of their labor force is a major factor in maintaining international competitiveness.

Although there is a wide social consensus in the role of individual firms in the local communities, the relationships between the firms and the municipal authorities often are characterized by conflicts, especially concerning the provision of transport services and, increasingly, rigid land use and environmental regulations. However, the entrepreneurs often seem to be unaware of the complexity of the management of public issues or lack the time and the cultural sensitivity needed to clearly identify and support regional policies in many economic and social fields (even on those which could have an important impact on their business activity). Notwithstanding the existence of various forms of cooperation, it may be concluded that a situation of "organizational deficit" or "institutional deficit" is clearly evident in North Italy, as recent technological and organizational changes have not yet been accompanied by an analogous change in the mechanisms of governance of the relations between the firms and the public sector.

Sectoral Development and Creation of New Groups of Firms

It is well known that the average size of firms in the manufacturing sector of North Italian regions is limited. Firms with less than 20 employees represent almost a third of total employment and firms with more than 500 employees represent less than 15 percent of total employment. The growth of employment results almost entirely from a process of entrepreneurial births, rather than to expansions of existing firms. In fact, the growth of employment is determined by the balance of employment decreases in existing firms, especially of medium and large size, and the employment increases in new firms.

The entrepreneurial dynamism is accompanied by high failure rates: many new firms die after two or three years, and the turnover of firms is very high. The survival of firms is influenced by a favourable local environment. Therefore, from a policy perspective, it is important to work with the local environment, as birth and growth of firms plays an important role in compensating the almost inevitable decrease of employment in existing firms and the closure of some established firms.

Firms which survive the first few years tend to develop a "natural" size, which differs according to their internal characteristics and the subjective aims of the entrepreneurs, and then to stop growth. Therefore, there is not a "natural evolution" of small and medium size firms into large firms. Many entrepreneurs are conscious of their limited capabilities and are satisfied with their role as subcontractors or specialized suppliers and do not aim at growth. Thus, a local production system is comprised of both large and small firms, often directly linked with each other.

Sectoral Diversification and New Firm Development

The development of new firms is a major factor contributing to sectoral restructuring of local economies and explains why local production systems of North Italy have become much more diversified than the traditional highly specialized industrial districts.

Within this evolution, subcontracting relationships have important effects. In fact, they stimulate small firms to develop relationships with more than one main contractor, as this may insure lower risk and access to differentiated knowledge-based inputs. This facilitates conversion of local firms towards new production sectors directed by the new needs of their clients.

New products emerge originally as the result of a process of learning and as a response to internal needs of the firms. This is linked tightly to the exploitation of complementary technological capabilities already existing. Secondly, new initiatives induce spin-offs or the creation of new specialized firms, which may develop autonomously from original firms. In fact, the creation of new firms normally is linked through the existence of dynamic economies to the know-how accumulated in the pre-existing production within other firms.

Thus, the process of vertical integration both upstream and downstream is related to the creation of new subcontracting agreements. It is aimed at strengthening small and medium size enterprises, and does not lead to an increase of firm size. In fact, the size of the firm may stay the same as the process of integration is accompanied by the dissemination of various activities which do not belong to the core business. Vertical integration through subcontracting, therefore, is designed to exploit economies of specialization, flexibility and specialized competencies which have been developed within the main contractor firm.

Sectoral Diversification and Creation of Groups of Firms

The system of SMEs is characterized by internal dynamism which is not only determined by the high turnover in industries, but also by frequent changes of ownership. Acquisitions and dispersals are often determined by crisis situations in the existing firms. In fact, they lead to a thorough restructuring of the firms and could, therefore, be considered as identical to a closure and the creation of a new firm.

The development of the small and medium size firms during the 1970's and 1980's led to the creation of many entrepreneurial groups which have the capability to compete with the traditional large industrial groups on the financial market. This is indicated by their success in the privatization of public firms (Italsider and SME have been sold to Riva and Benetton which may be considered as "new" entrepreneurial groups, notwithstanding the ambitions of the "traditional" entrepreneurial groups). There-

fore, an increasing number of SMEs are not autonomous but belong to either local or non-local entrepreneurial groups, which may be large.

In fact, when new market opportunities arise, the organizational strategy of these groups is characterized by the fact that they prefer to create a new firm, rather than to expand the size of the original firm. They seek to maintain a decentralized structure, emphasising the responsibility of the management of the individual firms and the division of risk.

The process of sectoral diversification of territorial production systems follows a natural trajectory, based on the aim of the individual firms to exploit new market opportunities and internal accumulated competencies. In fact, most entrepreneurs are aware of many potential market opportunities, even when they do not actually exploit them, owing to their subjective evaluation of the constraints determined by their actual organizational and financial resources. Their ability lies in being able to make a courageous choice between postponing new investments or off-loading previous investments, according to an evaluation of the risk of new production and the profitability of the actual production.

The following are obstacles that hinder the exploitation of perceived market opportunities by entrepreneurs:

- inexperience of the entrepreneurs and lack of managerial capabilities required to manage change in internal organization;
- the lack of capable and trusted collaborators;
- the impossibility to decentralize orders (which overcome the production capability of the individual firm) to other subcontractors;
- the absence of partners who can produce components that are complementary to the products of the firm;
- the existence of land use regulation hindering the physical expansion of the firms;
- the negative attitude toward the risk involved by a conversion from traditional activities to new activities;
- a long delay required by the need to negotiate with other firms and public authorities when the new projects require some form of cooperation;
- the lack of adequate technical and organizational consulting services to assist the firm in the process of change.

These characteristics of a highly decentralized process of start-up and sectorial conversion have clear implications for the role of public authorities. Authorities may be ineffective when they attempt to identify the sectors to convert existing product capabilities. It seems instead that the task of public authorities should be formulation of new policy instruments which may help in reducing the obstacles that hinder the exploitation of new market opportunities identified by entrepreneurs.

Employment Creation in Small and Medium Size Firms

Regions in Northern Italy are characterized by a high share of small and medium size firms in the manufacturing sector, and by a low unemployment rate. Data at the provincial level indicates that an inverse correlation exists between the share of SMEs and unemployment. The share of industrial employment is particularly high and increasing in Northern Italy. This trend sharply contrasts with that in most industrialised regions in Europe.

The share of exports and turnover of industrial firms also is high, in both large and small firms, and has increased continuously. These phenomena are related and can be interpreted according to the model

of industrial development based on SMEs, which has been described previously, and which is sharply different from the development model of areas where only large firms prevail.

This process can be interpreted as an endogenous growth model, where the material and non-material resources, such as capital stock, employment and know-how, which are made idle by the progress of technological change, are smoothly reinvested into new firms and production sectors, thus ensuring full employment of local resources. The process is closely related to the prevalence of small firms coupled with low barriers to entry, the family character of entrepreneurship and the high social cohesion in the relationships between management and labor. These factors ensure a strong embeddedness of firms in the regional community and promote the responsibility of firms to provide full employment of regional resources.

Therefore it is possible to identify a virtuous, cumulative process of endogenous development, which may be schematically articulated in various phases (Table 1). The process of endogenous development also can be formalised in an analytical model, which may be empirically tested. The model is based on the availability of data on firms (births and deaths). New statistical sources (ASPO and INPS data), which have been elaborated recently for the Lombardy region, and some other regions, allow access to time series statistics of the employment level of the individual firms, disaggregated according to their respective age, at the provincial or municipal level, and on a yearly basis for the last decade (panel data).

Table 1. The Relationship Between SMEs Births and Employment Growth

Given:

- an initial endowment of proprietary resources: labor capabilities of entrepreneurial families, a highly trained local labor force, local organizational capabilities, local technical know-how, production capital, etc.
- an initial level of production
- an exogenous increase of factor prices
- an exogenous increase of international cost competition

The development process is articulated in the following phases:

Phase 1:

- adoption of process innovation
- increase of productivity in existing production
- outsourcing of non-strategic production

Phase 2:

- accumulation of profits
- creation of an excess of proprietary resources
- identification of new production in order to insure the use of proprietary excess resources

Phase 3:

- self-financed investments
- adoption of product innovation and diversification towards new sectors
- creation of new production units that are autonomous with respect to the initial production units
- growth of external suppliers engaged in subcontracting relationships

Phase 4:

- crisis of some established firms and of many recently created firms
- acquisition of crisis ridden firms by different entrepreneurial groups

Phase 5:

- growth of the new firms
- growth of dependent employment

Phase 6:

- development of social consensus
- development of receptivity to technical and organizational change

Phase 7:

- decrease of transaction costs both in intraregional and interregional networking
- decrease of adjustment costs in the reallocation of local resources in the innovation process

In particular, the data in Table 2 demonstrates a useful method of analyzing the total change in employment level according to various contributions both owing to the various size classes and deaths, births and change in pre-existing firms. The model is based on the hypothesis that the employment level is the result of dynamic process. Thus, given the output levels, it is inappropriate to directly estimate the level of employment or the unemployment rate, since they are both the result of an algebraic summation of flows which preferably should be estimated separately.

Table 2. Employees by Size Classes (000's) - Stock and Flows, Lombardy Region 1981-1992

Category	Total	Size of firm		
		1-9	10-99	<100
1. Stock '81	3020	1125	1005	891
2. Deaths '81-'92	1338	602	435	301
3. Birth '81-'92	1498	818	483	198
4. Stock '92	3086	1357	1067	662
5. Overall balance	66	232	63	-229
6. Births-deaths balance	161	216	48	-103
7. Change of preexisting firms	-95	16	15	-126

Change in the level of employment in pre-existing firms may be positive or negative and is related to a positive or negative change in their output demand, or to process and organizational innovation, consisting in a better use of equipment (due to, for example, an increase of overtime and of the number of shifts or to work on weekends). It also may relate to an increase of outsourcing or of vertical integration of particular phases of the production process.

If the period considered has an adequate length, such as 5 or 10 years, the births and deaths of firms clearly assume a greater importance than the change in the employment level of pre-existing firms, as in the long run the population of firms is completely renewed. Moreover, if the period considered is rather long the data referring to employment level in new firms represent only the firms which have been born during that period and were still alive at the end of the period, and are thus automatically deflated by the usually large "infant mortality" of firms.

Empirical evidence in many regions indicates that employment growth in SMEs is normally positive owing to a process of size increase up to a "natural" size of the pre-existing small and very small firms (many of which have recently been created). Employment change in larger firms is normally negative owing to a continuous process of restructuring in the pre-existing large and very large firms and increase of their productivity. The overall variation in the pre-existing firms is usually negative owing to the crisis of many large firms.

Change in the number of firms or the level of production owing to the creation of new firms or expansion of existing firms normally is positive for the smaller size classes and zero for the larger size classes. Conversely, change in the number of firms or level of production owing to the decline or downsizing of existing firms has a large value for the major size classes, especially in the capital intensive basic industry sectors and a normal, higher value for the minor size classes, due to high turnover of firms. In turn, the net demographic balance has a positive value for the minor size classes, and a negative value for the major size classes. Moreover, the overall balance between births and deaths of firms normally has a positive value, which compensates at least partially the generally negative employment change in pre-existing firms.

The model does not illustrate completely the importance of the phenomenon of firm birth, owing to the limitations of available statistics. In fact, in addition to the creation of firms, one has to consider the increasingly important acquisition and losses of pre-existing firms. As indicated above, these flows correspond, *mutatis mutandis*, to disinvestments or closure of firms and to investments and creation of new firms, since they represent the logical alternative to avoid bankruptcy and closure of many crisis ridden firms.

The Internationalization Process of Firms

Analysis of Italian case studies demonstrates that SMEs do not operate only in a national framework (Cappellin, 1993d). SMEs contribute substantially to national exports. In 1985 their share of the national total was 53 percent and it has been increasing since.

The share of exports of total sales in Italian SMEs is not much different from that of large firms when only exporting firms are considered. The average share is actually 37 percent for SMEs and 45 percent in the mechanical sector. The examples of SMEs which export the largest share of their production are not rare. SMEs export primarily to nearby countries in the EU but are increasingly capable of exporting to distant non-European markets (e.g. the Far East countries).

Recent investigations indicate that employment in foreign firms controlled by Italian firms that are not among the largest 20 Italian multinationals has increased by 3.5 times in the period 1986-1992. Conversely, employment in foreign firms controlled by the 20 Italian multinationals has increased only 2.1 times (Cominotti and Mariotti, 1994). The technological and organizational capabilities of the SMEs affect their export potential and the internationalization process even more than price competitiveness. In fact, while a 40 percent devaluation of the Italian lira on the German mark has had a strong impact on export from the North Italian regions, the impact has been negligible in the South Italian region where the firms lack the technological and organizational capabilities to operate in international markets.

The Internationalization Strategies of Large Firms

The process of re-organization of firms affects expansion at an international level. The internationalization of firms requires decentralization of the operative functions and the creation of flexible alliances with foreign firms (Cappellin, 1990 and 1993b). SMEs in international markets are confronted with problems similar to those faced by large firms. In fact, large firms risk becoming too slow to manage

the fast changes required by the international markets. Internationalization requires the capability by firms to work in different environments, a greater decentralization of functions, and creation of flexible alliances with foreign firms. Thus, a decentralized organization, such as that of SMEs, is more efficient than a concentrated one. Even large industrial groups may adopt a new model of organizations by "localization" of various subsidiaries in foreign countries (Cappellin et al., 1994).

Thus each production unit becomes responsible for a specific group of products at the global level, or at least within a large transnational region, which may encompass various regions and countries. Therefore, each unit abroad has greater power than in the past, and is somewhat independent not only in marketing and service to clients, but also in the purchase of components, production organization and development of new products.

The presence of a foreign firm in each country should be stable and capable of insuring a local image and developing close relationships with the local production system. For this reason foreign firms often acquire local firms, local trademarks and distribution structures.

This increasing interdependence at the global level is compatible with two opposing trends. On the one hand is the trend toward an increasing specialization of each firm and toward selective concentration of individual specialized production within specific firms. On the other hand is a trend toward a greater dispersion at the international level and toward an increasing integration or cooperation with different foreign firms.

The Internationalization Strategy of SMEs

This new model of organization, which may be described as a network, suggests that SMEs aim to perform a global role, or at least be integrated with other SMEs in foreign countries within a large transnational region. Thus, the increasing integration of the international and European industrial system, and its structural transformation, create not only new challenges but also new opportunities for SMEs.

In fact, the results from recent studies (Cappellin, 1994a and Cappellin and Orsenigo, 1995) based on direct interviews with many large and medium size firms in regional economies highly characterized by the roles of industrial SMEs (e.g. Three-Veneto regions and Lombardy), indicate that the trends observed in the spatial organization of SMEs are similar to the well-known network model increasingly adopted by large firms. In particular, the internationalization process of SMEs can be interpreted as the extension at the international framework of specialization and cooperation with other firms, which has existed within a regional framework for a long time.

A major characteristic of the internationalization process of SMEs is the fact that it is a gradual "learning process" where the forms adopted by the individual firms change continuously in an effort to adapt pragmatically to the different environments of the various countries. The adoption of a very cautious approach is especially clear in the case of SMEs, which often disregard market opportunities that have been known for a long time, when their operational exploitation would require too large an investment of human resources and too high a risk.

The internationalization of SMEs through commercial agents or self-owned foreign commercial offices or subsidiaries is more important than that through foreign investment in production structures. The development of international subcontracting agreements and the sale of licenses, however, often represent a valid alternative to production investments.

Internationalization requires a high degree of decentralization of operations of these firms and the creation of flexible alliances with foreign firms. Agreements must be monitored through a direct

presence in the foreign country. In this perspective, the major obstacle to the internationalization of SMEs is internal to the firms, and is represented by the lack of qualified human resources or by the frequent existence of a parochial culture that is too different from that in the foreign countries considered. Moreover, the lack within the SMEs of qualified technical collaborators for the entrepreneur hinders the systematic effort that would be required for the implementation of a medium term strategy. Finally, the production capabilities of SMEs are largely incorporated in the qualifications of the local labor force, in the local network of suppliers and in other factors characterizing the local environment. This is difficult to reproduce abroad.

Therefore, SMEs often prefer to concentrate production and are reluctant to decentralize to less developed European regions and countries. This is especially true in the case of products the demand for which is unstable, and for which time and quality are the crucial factors of competition, as is typical for SMEs operating in specific segments of the international market (Cappellin, 1994a).

On the contrary, SMEs usually prefer to invest in marketing structures, especially in the most developed countries, aiming to integrate the value added that is created in the phases downstream from manufacturing.

The problem of control of distribution of their own products has become a factor of importance similar to technological innovation. It often requires investments that are greater than those aiming at increasing production capacity. This is indicated by the advent of acquisition of foreign firms having a well known trademark or a diffused network of retailers.

Only firms that maintain a specialization in traditional products, where the competition is determined mainly by costs, are interested in creating direct investments in foreign production plants in less developed countries. These firms often develop subcontracting agreements with firms in the Far East, in Eastern Europe or in North Africa, in order to close down production lines where costs have become too high.

The most dynamic SMEs are inspired by the example of firms that have experienced a fast development since the 1970's and have become multinational or very large industrial groups (such as Benetton, Luxottica, Riva, Radici, etc.). These now are capable of competing with the traditional Italian large industrial groups (Fiat, Pirelli, Montedison, etc.). These firms consider the opportunity to invest in foreign countries, such as the USA and Germany, to acquire access to specialized knowledge and complementary technological competencies. Moreover, when they recognize the opportunity to raise capital in the stock exchange they access international stock markets, such as that of New York, rather than that of Milan, because foreign markets represent a large part of their turnover.

New Challenges for the Internationalization of SMEs

There is wide agreement that there is a need to consolidate traditional export activities through a direct presence in various foreign countries. The advantage created by depreciation of the Italian lira may be temporary and can be exploited by investing increased revenues from export in the creation of stable commercial and/or production activities in the same foreign markets, rather than in the expansion of production plants at home. However, many exporting SMEs are incapable of using foreign commercial distribution channels that differ from those used on the internal market, where traditional small scale retail distribution still prevails. They cannot adapt to these markets with a restricted number of very large operators, such as buying consortia and large retail distribution companies.

Cooperation in exporting activity among SMEs operating in the same sector has been unsuccessful in spite of the fact that it requires much larger investments than those which could be afforded by individual SMEs. Therefore, a valid alternative to the direct creation of autonomous commercial

structures in foreign countries is to establish stable contracts with large distribution companies. However, a crucial constraint is the fact that small firms often lack the scale of production and reliability in terms of quality and time. Only medium size firms are capable of working with modern distribution companies.

Thus the development of efficient logistical structures abroad, of transport, warehousing, sorting, adapting products with special components, repairing and service to clients is becoming a crucial condition for the continuation of high flows of exports by SMEs. This requires considerable investments abroad, which are different from but essential to the future creation of production plants (Cappellin, 1992a; Cappellin et al. 1994).

In general, the development of the international activities of SMEs points out the need for closer integration between manufacturing activities and service activities, and for higher qualification of the labor force. In fact, the advent of "just in time" delivery in a modern organization and communication system, the guarantee of an adequate level of customer assistance through specialized personnel, the European quality certification of products, and the development of R & D functions are goals that require the retraining of human resources, and improvement of the technological background and international culture of the local labor force.

The Role of Foreign Multinationals in Local Production Systems

The internationalization of local firms, while important, should not over-shadow the increasing role of foreign firms in the regional economies of North Italy. In fact, the presence of highly specialized industrial districts (eg. white appliances or sport shoes), that are world leaders in specific segments of production, represents an important source of external economies. It has led multinational groups to localize production plants in the same areas or to acquire local SMEs.

In fact, SMEs increasingly are becoming the target of foreign acquisition, especially when they are endowed with good technology, and are capable of making quality improvements with the transfer of external technology and access to a modern commercial network. Foreign groups often have concentrated similar products in these firms that previously were scattered around the world. SMEs have benefitted from direct access to the large distribution organizations of the multinational groups, to greater financial resources and to technology transfers. This often has resulted in an increase of employment in foreign controlled local firms.

The devaluation of the Italian lira has had an even greater impact on production plants of foreign multinationals (for example: ABB and Electrolux) than on autonomous local firms. In fact, since foreign firms are capable of fast redistribution of their products among various foreign subsidiaries, the greater competitiveness of their Italian production plants has led to a greater increase of export share of total production.

On the other hand, the devaluation of the Italian lira had an opposite impact on those foreign multinationals that have Italian subsidiaries in order to serve the Italian market (for example: BMW and Bayer). In some cases, the need to reduce prices in Italy in order to maintain the share of the market has led to a rationing of supply and speculative diversion of the imported goods that are marketed in the domestic market. This demonstrates that the contribution of multinational firms to the internationalization process of a regional economy may lead to contradictory results.

A New "Market Oriented" Regional Industrial Policy

The dynamism of productivity and development of the capabilities to compete at the international level are fundamental criteria of the development strategy for regions that are closely integrated in the

European economy. The competitiveness of each individual firm depends on the competitiveness of the entire territorial system in which it is embedded. This includes the quality of the local labor force, the relationships with subcontractors, the system of producer services, local infrastructure and the efficiency of public institutions.

A modern industrial policy should first aim to be “market friendly”. This implies the following:

- use instruments of economic policy that do not distort the market mechanism;
- correct inefficiencies determined by market failures;
- correct, through redistributive instruments, development disparities determined by the market mechanism.

However, a new “market oriented” regional policy also should include the following general objectives:

- promote creation of new internationally competitive production activities;
- determine environmental and institutional preconditions in order to create market mechanisms where these are in fact not existent;
- promote a greater integration among the various actors by removing information barriers and transaction costs which hinder cooperative behaviors.

The model of subcontracting and networking among firms may indicate a new role for public institutions within a territorial production system. It appears possible to extend the partnership model within the public sector which regulates the relationships among the subcontractors and main contractors, or among the customers and the suppliers. These relationships are characterized by both a conflict of interest, which allows monitoring the overall performance of the relationship, and by increasing cooperation, which transforms both actors into partners interested in increasing their overall competitiveness with external competitors.

As an explanation of the industrial development of North Italian regions the cooperation/conflict relationships among firms producing different outputs appears to be more important than competition among firms producing the same output. Rather than extend the model of competition to the public sector, especially in those fields where privatization cannot allow real competition, decentralization or vertical and functional subsidiarity could be applied. This would not only increase specialization and flexibility, but also impact conflicts of interest or checks and balances that are the basis of a liberal and democratic system. In fact, the legitimacy of national public intervention in regional policy is challenged by the appearance of new public and private actors.

Thus, the principles of subsidiarity and of decentralization of decision-making have to be implemented not only in the relationship between the State and the Regions, but also between the regional administration and the different public and private organizations that exist within a specific region. The interventionist approach of the Welfare State should be substituted by the approach of partnership. An increasing number of public functions, among which are the promotion of industrial development and the creation of modern services and infrastructures, should be managed in the framework of mixed institutions that can group together public and private actors.

A modern regional policy requires that the functions of public institutions are neither the direct ownership and management of production activities and services nor legal regulation through framework laws and the creation of ad hoc High Authorities. Rather, it should assume the role of an “active interface” or of a “system integrator”, capable of integrating the policies of the different regional actors, stimulating their project design capabilities through the proposal of specific initiatives and supplying technical assistance in the implementation of projects.

The crucial issue is the management of complexity and flexibility. This requires that public authorities identify overall goals or broad strategies of development, rather than detailed objectives, in order to promote consensus and coordinate the synergies of the many different regional actors. The role of national and regional public administration is not hierarchical coordination of the policies of the various private and public actors and municipal authorities, but rather that of defining flexible mechanisms of governance of the relationships between public and private organizations.

In fact, the increasing decentralization of the economy and complexity of a modern industrialized society create new needs for an integration function. This could be performed by both public institutions and the collective organizations. The crucial issue is to promote an original role of the collective organizations in a process of self-organization of the regional society and economy. This strategy coincides with the shift from the hierarchy model of government to the network model, based on partnership.

This evolution is especially needed in regional policy, where private firms, chambers of commerce, entrepreneurial associations and other collective organizations must cooperate with the national and regional administrations. Areas of concern are technological transfers, promotion of exports and tourism, creation of infrastructures and general promotion of economic development.

Measures of regional policy should be promoted and implemented by all regional actors according to their respective aims and values. Each actor has a different and complementary role, while no single actor, even a public one, represents the privileged leader in the new regional policy. Different from technocratic and top-down economic planning, the new regional policy should be the result of a process of negotiation among the actors and be implemented by the integration of the actual policies of the various actors defined according to a common strategy. According to a network paradigm, a new regional policy should be characterized by the explicit adoption of a "transactional" approach, where, different from a "prescriptive" approach, the most important question is not "what" has to be done, but rather "how" and with "which" partners.

A correct equilibrium between free market and the role of the State requires that the public actors perform the function of defining general directives of economic and territorial planning and be the arbiter in conflicts among regions or local areas. Public institutions should redefine the rules, the procedures of interaction with private actors and incentive schemes. They should propose meaningful and innovative frameworks of general agreement in a flexible manner that recognizes the different characteristics of each problem.

Conversely, private actors and local subregional authorities should have the responsibility of taking initiatives for the implementation of operative projects. A specific and autonomous function should be insured to each actor, both in the phase of policy design and in that of policy implementation, in the framework of integrated actions.

Both public administration and private organizations require not only stringent monetary control, but also a clear strategic vision, a project-oriented approach and commitment to quality control and customer satisfaction. This involves a radical change of organizational culture.

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EARLY EMPLOYMENT IMPACTS OF THE NAFTA: A SEARCH FOR ADVERSELY AFFECTED WORKERS, PART I

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EARLY EMPLOYMENT IMPACTS OF THE NAFTA*

The implementation of the North American Free Trade Agreement (NAFTA) is expected to have significant, negative consequences for (at least some) U.S. workers. In this paper we contend that these consequences will have distinctive sectoral and spatial patterns. General theories of international trade and the profit cycle are used to develop a set of inter-related hypotheses predicting the sectors and locations of adversely affected workers. Data from the Department of Labor's Trade Adjustment Assistance Program are reviewed to compare predictions with the sectoral and spatial distributions of manufacturing workers who have already experienced some form of labor displacement as a result of recent changes in the North American trade arena.

Background

In August 1992, agreement was reached to create a North American free trade zone. The resulting legislation was approved by the U.S. Congress in November 1993 and became effective on January 1, 1994. The agreement phases out, over a period of 15 years, some trade and investment barriers between Canada, Mexico, and the United States.

Little public attention was paid to the NAFTA in the U.S. until it became an issue late in the 1992 presidential campaign. During the summer and fall of 1993 the congressional debates concerning the NAFTA generated a great deal of controversy. Many Americans were unsure why the U.S. would want to enter into a free trade agreement with Mexico, whose economy is so much less developed than its own. While there are several arguments on both sides of this issue, at least two are obvious. First, Mexico was seen as a growing economy with higher import tariff barriers than those of the United States. Businesses in the U.S. wanted more access to the Mexican consumer market for sale of both products and services.¹ Second, the United States has had problems with undocumented labor migration from Mexico and other Central and South American countries. Increasing employment opportunities in Mexico were seen as one way to stem the flow of illegal immigrants.

From Mexico's perspective, advantages of the NAFTA appear to have included better access to the U.S. market, and, hopefully, increased foreign direct investment (FDI) in Mexican industry.² Mexico

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hoped that increased FDI would lead to a more capital-intensive and productive manufacturing sector as well as an expanded services sector.

Pre-NAFTA Trade Relationships

Some insights into the future employment impacts of the NAFTA on U.S. workers were gained by reviewing past impacts of recent international trade relationships with Canada and Mexico. The U.S.-Canada Free Trade Agreement (FTA) enacted in 1989 was touted as a “win-win situation for all involved.”³ Despite predictions that Canada’s lower (aggregate) wage and nonwage compensation costs would lead to employment gains in that country,⁴ the reality was that Canada’s manufacturing sector lost nearly 160,000 jobs in 1989 alone.⁵ Of course, not all of these job losses could be attributed to the U.S.-Canada FTA, especially since 1989 was a recessionary year in Canada. Disregarding the impact of the recession on Canadian employment, when wage compensation in the two countries are compared at a disaggregated industry level, it becomes clear why the prediction of Canadian employment gains did not materialize. Although the U.S. offers higher average wages to workers at the executive level, compensation of manufacturing production workers in the U.S. is actually lower than in many of the other industrial countries, including Canada.⁶

With respect to the NAFTA, a wide differential does exist between the wages of U.S. and Mexican workers even at disaggregated industrial and occupational levels.⁷ Hence, there was concern that the U.S. manufacturing sector would experience significant employment losses under the newly enacted free trade agreement.

Additional information about potential employment impacts of the NAFTA was gained by examining the history of the *maquiladora* industries in Mexico.⁸ The *maquiladora* program was established by the Mexican government in 1965, but experienced little growth until the devaluation of the Mexican peso in 1982. Essentially, the *maquiladora* program allows duty-free import of production equipment, raw materials, and components from the United States into Mexico, provided that the products assembled from these materials are shipped back to the United States for final sale. The U.S., in turn, levies duties only on the value-added to the goods in Mexico. Mexican employment in the *maquiladora* plants has expanded rapidly—from 100,000 workers in 1982 to 472,000 workers in 1992, with hourly compensation averaging \$0.81 in 1987.⁹

In analyzing the U.S. employment impacts of the *maquiladora* program, Silvers and Pavlakovic (1992) estimate a loss of U.S. manufacturing employment regardless of whether wage savings are passed on to consumers or to shareholders, presuming that U.S. firms are operating under a competitive equilibrium.¹⁰ If, on the other hand, the movement of assembly-line jobs to Mexico allows the U.S. parent firm to remain competitive internationally and thereby stay in business, then the U.S. does realize a fairly large net employment benefit, at least in the short run. The employment impacts owing to implementation of the NAFTA are expected to be broader than those of the *maquiladora* program because of the broader range of industries affected and the influence of a third participant, Canada.

Early Predictions about Employment Impacts of the NAFTA

During and after the NAFTA negotiation and ratification processes, the U.S. government cited numerous public and private research projections of net national employment benefits; however, most of the cited works acknowledged the potential for a significant number of gross job losses.¹¹ Moreover, these analysts agreed that any labor displacement that did occur would not be randomly distributed across all workers. Instead, the existence of distinctive sectoral and spatial patterns was predicted.

Most quantitative studies predicting employment impacts of the NAFTA focus on macroeconomic effects. A few, however, provide numerical estimates of the Agreement's net employment impacts within individual industrial sectors. Unfortunately, as is often the case with economic analyses, each study makes different simplifying assumptions and each examines a slightly different aggregation of industries, making cross-study comparisons difficult. Despite these problems, the studies provide some insight into which industries are likely to experience a net gain (or net loss) of employment relative to what they would have experienced under a no-NAFTA scenario.¹²

Predictions of employment impacts of the NAFTA in specific industries vary tremendously (Table 1). For example, using a computable general equilibrium (CGE) model with assumptions of constant returns to scale technology, perfectly competitive goods markets, and full employment in the U.S., KPMG Peat Marwick predicted a loss of more than 4000 jobs in the Apparel industry.¹³ In contrast, using a different set of assumptions but the same technique (i.e., a CGE model), Stern, Deardorff, and Brown predicted a net gain of over 7000 jobs in the Apparel industry.¹⁴ Predictions about the impact of the NAFTA on the Electrical Equipment industry show even greater contrasts, ranging from a gain of almost 12,000 jobs to a loss of more than 33,000.¹⁵

Table 1. Predicted U.S. employment impacts of the NAFTA by industry

SOURCE	IEFR 5 yr	IERE 10 yr	DRI	KPMG	KPMG	STERN	STERN	
Industry Codes	Tariffs only	Tariffs only	Gradual	Full employment	Real wages constant	Tariffs only	Tariffs only + FDI	Industry
SIC 20,21	0	-200	544	550	1350	-239	1725	Food/Tobacco
22	600	700	-749	-1000	-700	8951	11851	Textiles
23	-2200	-2900	-1939	-4400	-2500	4390	7077	Apparel
24	-500	-400	-5235	-200	50	211	1063	Lumber & Wood
25	-200	0	-827	-800	-600	772	918	Furniture
26	400	400	555	-200	50	1512	1907	Paper & Allied
27	200	400	1299	-400	1100	638	903	Printing & Publishing
28	2300	2400	4975	900	1100	5322	6411	Chemicals & Allied
29	100	100	290	50	100	-72	-110	Petroleum & Coal
30	4700	5700	5590	600	1000	905	1826	Rubber & Plastics
31	200	-100	-1102	-50	200	-227	572	Leather & Footwear
32	1200	2000	-2142	-800	-600	-2498	-1390	Stone/Clay/Glass
33	2600	2300	1836	-1000	-600	-6774	-13716	Primary Metals
34	4600	5400	2868	-200	400	1566	1818	Fabricated Metals
351-6,4-9	11600	12400	20917	4500	5000	15631	16435	Machinery, except Computers
357	1400	1000	inc. above	-2700	-2600	inc. above	inc. above	Computers
361-2,4-9	11400	10700	11964	-5200	-5100	-14554	-33027	Electrical Equipment
363	0	-100	inc. above	-1000	-1000	inc. above	inc. above	HH Appliances
371	-200	-700	15654	2000	2900	-20328	-13583	Motor Vehicles
372-9	300	-200	inc. above	800	1800	inc. above	inc. above	Other Trans. Equipment
38	1300	1200	3440	11400	12200	12755	8686	Instruments
39	300	300	-416	?	?	?	?	Misc. Manufacturing
TOTAL	40100	40400	57522	2850	13550	7961	-634	

Other researchers refrain from attempts to predict specific numbers of job losses, and focus instead on identifying the characteristics of industrial sectors that might increase their vulnerability to direct impacts of the NAFTA. For example, Solocha (1992) used standard international trade theory to argue that manufacturing industries in which Mexico holds a comparative cost advantage vis-a-vis the U.S. and Canada (i.e., Tobacco—SIC 21, Iron and Steel and Non-ferrous Metals—part of Primary Metals SIC 33, Office and Computing Machinery—part of Industrial Machinery SIC 35, and Transport Equipment—SIC 37) are most likely to lose jobs, at least initially.¹⁶ These same industries, along with Textiles—SIC 22 and Apparel—SIC 23, also are identified in studies by the Office of Technology Assessment (OTA).¹⁷ The OTA study (1992) predicts labor displacements in industries using low-skill workers and producing standardized products. Based on their predictions, the OTA study warns that unless the NAFTA is accompanied by an emphasis on high productivity and high-wage production in the U.S., less-educated workers "...could expect to continue losing about 1 percent of their real wages annually..."¹⁸

Only a few of these early studies explore the possibility of spatial impacts of the NAFTA. Hansen (1992) suggests that Texas will be one of the main beneficiaries from the NAFTA, especially the cities of Austin, Dallas, and Houston with their emphasis on high-technology products and producer services.¹⁹ Sectors in which workers are expected to be adversely affected by the NAFTA are those that are often found in rural areas: fruit and vegetable production, food processing, textiles and apparel, and leather. Hansen also predicts losses in the steel industry which is primarily urban-based in the U.S. These job losses however, are much like those lost in the U.S. due to the *maquiladora* program, and should be considered in context. "...while *maquiladoras* no doubt take U.S. jobs, these jobs would probably have gone to Asian or other newly-developing countries if the *maquiladoras* did not exist" (p 10). U.S. jobs lost to Mexico owing to the NAFTA likely would have been lost to some developing country even without the trade agreement.

Drawing on the historical role of rural areas in the spatial division of labor within the United States, Conroy and Glasmeier (1992) hypothesize that "Rural America may carry the principal burden of adjustment under NAFTA."²⁰ Rural areas in the U.S. have long been dependent upon the manufacturing sector as a primary employer of the local labor force. These areas have historically attracted manufacturing firms by offering a pool of relatively low-skilled, low-wage labor suitable for assembly line production. As a result, rural areas may have to compete with low-wage regions of Mexico.

Conceptual Frameworks for Examining Employment Impacts of the NAFTA

Most of the early sectoral studies relied on a standard version of international trade theory. Early spatial studies, however, are derived from recent conceptual modifications of the profit cycle model. Some of the key issues addressed in these two conceptual frameworks are outlined in the following sections.

International Trade Theory

Standard trade theory (referred to as the HOS or Heckscher-Ohlin-Samuelson model) is built on the neoclassical economic general equilibrium assumptions of free, unrestricted trade, perfectly competitive market structures and constant returns to scale. According to standard trade theory, countries will export (to their trading partners) those goods in which they have a relative comparative cost advantage and will import those goods in which their trading partner(s) have the advantage. A country's comparative advantage vis-a-vis its trading partner derives primarily from differential factor endowments (i.e., capital, labor, and land/natural resources) in the two countries.

When applied to the current U.S.-Mexican trading patterns, the comparative advantage thesis suggests that Mexico, with its limited access to capital and its large, relatively unskilled labor force, will have a comparative cost advantage in (and thus will produce and export) those goods which are manufactured using a relatively labor intensive, routine production process. The United States and Canada, on the other hand, will have a comparative cost advantage producing those goods whose manufacture requires greater capital investments and more technologically advanced skills, Mexico will be expected to import these more capital-intensive goods from the United States or Canada, rather than produce them domestically.

This standard model of trade has been subject to increasing criticism from within the discipline of economics, with some economists proclaiming (and other denying) the birth of a new paradigm for explaining international trade. Recent critiques point to the inability of the standard HOS model of comparative advantage (i.e., the advantages deriving from differing factor endowments) to explain multinational corporations, foreign direct investments, and intra-industry trade. By questioning two fundamental assumptions of the factor endowment model of comparative advantage (i.e., the existence of perfect competition and constant returns to scale), some economists argue that imperfectly competitive market structures and their associated economies of scale must be included in explanations of international trade patterns.

The inclusion of economies of scale can alter the trade model significantly. External economies of scale (also referred to as "agglomeration economies" in the regional science and geography literatures) are those industry-wide costs savings that are achieved when an industry is large enough to dominate the demand for support services and labor. One of the most common examples of external economies of scale are those benefits that firms in a geographically concentrated area may derive from access to a local market with a greater variety of specialized supporting services and a labor force with industry-specific experience and training.²¹ Theoretically, as long as economies of scale can be realized by all firms in the industry, the industry itself remains competitive, and the pattern of international trade will still be determined by the relative factor endowments of the trading partners.²² Realistically, rural firms are rarely able to take advantage of these types of external scale economies.

Many economies of scale, however, are internal to the firm. Internal economies of scale are those firm-specific costs savings generated by the sharing of fixed costs within a single large firm. For example, a large multi-plant firm can realize costs savings by making the coordination services of its headquarters simultaneously available to separate plants in different locations or countries.²³ When increasing returns to scale are attached directly to only some firms in an industry, then the pattern of trade becomes significantly more complex. Internal economies of scale allow the favored firm to expand output, dominate the market and create monopolistic/oligopolistic conditions. Under these conditions, the largest firms compete less by lower prices, and more by product differentiation and expanded markets. These imperfectly competitive conditions also may lead to increased international *intra*-industry trade, which serves to open new markets and increase the variety of goods available to consumers.

The incidence of *intra*-industry international trade weakens the usefulness of the conventional model for understanding the impact of trade on domestic workers. As long as international trade occurs between industries, the comparative advantage model of differing factor endowments can be used to explain production locations (especially if transportation costs are included). However, when a country is importing and exporting relatively similar products embodying relatively similar factor proportions, the conventional model cannot predict which countries will produce which particular goods.

It remains to be seen whether recent additions to the trade theory of comparative advantage will result in a new scientific paradigm or simply one more important, but relatively small, adjustment to normal science.²⁴ Nevertheless, the inclusion of scale economies, imperfect competition, and *intra*-industry

trade is forcing international trade specialists to include questions of the technical and spatial organization of production.

While international trade theory provides an explanation for the existence of trading relationships, profit cycle theory provides an explanation for the choice of geographic location of firms, both within the U.S. and internationally.

Profit Cycle Theory of Industrial Development

According to profit cycle theory, the industrial development of new products and of new production processes go through a multi-stage cycle.²⁵ Furthermore, each stage in this cycle is associated with different sets of constraints on the way that production can be organized. Thus, the manner in which employers deal with these cyclically-induced pressures depends, to a large degree, on their place in the structure of the capital market. New industries emerge with the creation of new products. During this first stage, firms and entrepreneurs focus on research and experimentation, not only with the product itself, but also with the procedures used to produce it. Profits as well as the employment of production workers during this stage are limited.

As this innovation stage reaches its limit, a second stage of rapid expansion of new firm formation and large profits begins. This stage is characterized by a standardization of the product and the further development of production and marketing strategies. "Employment will grow rapidly, with occupations concentrated on the professional-technical end of the spectrum."²⁶

Eventually, this stage of rapid growth and extraordinary profits devolves into a stage of routinization of mass production processes and consolidation of markets. This stage is characterized by what Markusen calls "normal profits", along with a greater emphasis on efficiency and control in the production process, an increase in the number of production-related jobs and corresponding decrease in professional-technical jobs, and frequently a geographic expansion of markets.

The final stage of the profit cycle is reached as the industry matures, markets for the product become saturated, and profits begin to decline. In this stage, firms must seek lower production costs in order to successfully compete in the product market and/or begin again with a process of exploration and innovation for new products and new production procedures.

Given the segmentation of capital markets, Markusen and others argue that firms and industries can be expected to differ in the pace at which they move through these stages of the profit cycle.²⁷ The adoption/implementation of flexible manufacturing techniques tends to increase the pace, for at least some firms. For example, large oligopolistic firms are better able to maintain large research and development departments and to produce a variety of products at different stages in the cycle. Other firms in competitive industries typically do not have the resources necessary to invest in an on-going process of innovation and thus develop at a much more uneven rate.

According to several writers, there is a connection between the technical requirements of production and both the social organization and the location of production. Thus, by bringing workers together in the cities (a trend from the early days of the industrial revolution through the end of World War II), employers faced the possibility of an increasingly organized and powerful workforce. During the 1970's, considerable effort went into documenting how some employers responded to the threat of more powerful workers by modifying the technical relations of production, creating barriers between workers and organizationally separating the control over production from the actual process of production.²⁸ More recently, there has been a growing interest in the tendency of employers to respond to cyclical pressures by modifying the spatial relations of production. For example, some employers may choose to take advantage of existing spatial barriers between workers, and relocate the firm from a local labor market

with a relatively powerful workforce to one where the strength of local workers is minimal. Thus, Massey posits that:

“Production change (the development of the forces of production, changes in the labour process, etc.) and locational change may often be alternative ways in which capital can achieve the same ends...If a production process is potentially mobile it may be easier to move to an area of low wages than to introduce, through investment in technical change, a shift in the nature of the labour process. Either strategy, production change or location change can be used to achieve the same result - a lowering of labour costs.”²⁹

Still other employers may respond by altering both the technical and the spatial relations of production. For instance, some multi-branch firms have used both organizational and locational factors to separate the control over production from the production process. Thus, in addition to this evidence for the location of entire industries, there is growing evidence of a socio-spatial division of labor within industries that is related to the industry's stage in the profit cycle.

To summarize briefly, it is the conjunction of technological and organizational possibilities and the structural constraints on those options that has led to the observed distribution of employment among rural and urban local labor markets.³⁰ Just as sectors of the economy have developed unevenly over the years, so too have different areas of the country, and different countries, developed unevenly. In general, uneven development has led to a concentration of employment opportunities in upper-level white collar occupations and expanding industries in the geographic centers of the economy (i.e., in the cities) and a concentration of routine production occupations and declining industries in the geographic periphery (i.e., in rural areas and in less-developed countries).

During the recessions of the 1970s and 1980s, changes in production technology, work organization, and competition from foreign producers combined to alter the role of location in the distribution of employment, earnings, and human resources. Advances in communications and computer technology in the 1980s made the “just-in-time” input purchases and small product runs of the “flexible” manufacturing process possible. These advances also allowed for the automation of many production processes formerly performed by labor, allowing manufacturing firms to downsize their labor force without affecting output levels. Adding to these labor force reductions have been a streamlining of manufacturing payrolls, sending business managers to outside firms to contract with temporary help agencies, legal and computer specialists, and other business services. Given their well-established, routinized production processes, fewer requirements for daily, face-to-face contacts with information sources and decision-makers, and greater emphasis on cutting production costs, industries in the later stages of their profit cycles are expected to be increasingly likely to locate in smaller towns and rural areas, both here and abroad.

Hypotheses from Trade and Profit Cycle Theories

One of the key questions in this research is “What are the sectoral and spatial patterns of labor displacements due to the implementation of the NAFTA?” Both of the theories reviewed above offer hypotheses about which industrial sectors are most likely to be negatively affected by the NAFTA. From standard trade theory, we derive the hypothesis that manufacturing sectors using a labor intensive production process will have a comparative advantage in Mexico relative to the United States and Canada, resulting in the possible loss of U.S. and Canadian jobs. From profit cycle theory, we add the hypothesis that sectors with low levels of productivity and those using a routine production process will be more likely to relocate to Mexico where labor productivity levels are less certain but labor costs are low. Thus, we expect that sectors with already low levels of productivity have less to lose and are less likely to be as sensitive to the possibility of reduced productivity in Mexico. And labor-dependent sectors using a

relatively simple, routinized production will be better able to take advantage of Mexico's abundant supply of cheap, less-skilled labor.

In addition, modifications of the profit cycle model offer a hypothesis about the spatial impacts of the NAFTA. Specifically, we derive the hypothesis that the more peripheral a firm's location, the more likely its workers will be directly competing with Mexican labor. Thus, we expect to find a disproportionate impact on workers in the smaller cities and more rural areas of the U.S. and Canada.

To evaluate these hypotheses, we constructed a dataset from information released by the U.S. Department of Labor's Trade Adjustment Assistance program. During the period January 1, 1994 to the end of October 1995, 631 petitions for NAFTA transitional adjustment assistance (TAA) were received by the Department of Labor. More than forty seven thousand (47,650) workers in 342 of these petitions were certified to receive assistance, with 86% of them employed in manufacturing firms. For each of the 342 petitions that were certified, we know the number of workers included, their industrial sector, their work location, and whether the certification was based on 1) a shift in production from the United States to Mexico or Canada, or 2) an increase in imports (either by customers or companies).

We begin by noting that the number of manufacturing workers certified for NAFTA-TAA benefits is small (Table 2).³¹ The total number of certified workers (N=40,753) between January 1, 1994 and October 31, 1995 made up less than a quarter of one percent of the total number of manufacturing workers in 1994.³² Nationally, shifts in the location of production were responsible for just about half (50.7%) of the total manufacturing labor displacements. Increased imports (N=20,085) were responsible for the other 49% of manufacturing job losses.

In the following analyses, this dataset is used to describe the sectoral and spatial patterns of NAFTA-related job impacts. The NAFTA-TAA database allows separation of production shifts to Mexico from production shifts to Canada. It does not, however, allow separation of some of the workers certified on the basis of increased imports by the source (i.e., from Mexico or from Canada). The greatest factor-endowment differentials are thought to exist between the United States and Mexico. Consistent with hypotheses derived from standard trade theory and the profit cycle model, at least for the economy as a whole, labor-displacements attributed to the inclusion of Mexico in the NAFTA were significantly more prevalent than impacts due to Canada: 56% of the 40,753 workers were displaced by the movement of production to, or increased competition from Mexico, compared to the 29% who were negatively affected by Canadian goods and production (an additional 15% of the certifications could not be attributed to a specific country).

Table 2. U.S. job losses identified by NAFTA-TAA benefits

TAA certifications based on:	Total number	Percent of total
Production shifts	20,668	50.7
To Mexico	15,952	39.1
To Canada	4,716	11.6
Increased imports	20,085	49.3
From Mexico	6,921	17.0
From Canada	6,925	17.0
Not identified	6,239	15.3
Totals	40,753	100.0

The remainder of the analysis focuses on the sectoral and spatial distributions of the 34,514 manufacturing workers certified on the basis of production shifts to and (identified) increased imports from Mexico and Canada. We adjust the number of workers certified for TAA benefits by the total number of workers in a sector or a location to operationalize negative impacts of the NAFTA.

Early Sectoral Impacts of the NAFTA

Since the employment size of the manufacturing sectors varies considerably, Table 3 includes an index (SECTORAL IMPACT_i) comparing the portion of all manufacturing workers (MFG_i) in each sector with the portion of NAFTA-TAA certified workers (NAFTA_i) in each sector:

$$\text{SECTORAL IMPACT}_i = \frac{\text{NAFTA}_i / \text{sum}(\text{NAFTA}_i)}{\text{MFG}_i / \text{sum}(\text{MFG}_i)} \quad i = 1, \dots, n \text{ manufacturing sectors}$$

Workers in those industrial sectors with values greater than one have been disproportionately impacted by the NAFTA. For example, of the 22,873 NAFTA-TAA certified manufacturing workers affected by trade with Mexico, almost 30% (6,755) were employed in the Apparel sector (SIC 23), and 18% (4,302) were employed in Electrical Equipment (SIC 36). When these percentages are adjusted by the relative size of the Apparel sector (5.8 percent of all manufacturing workers) and the Electrical Equipment sector (8.4 percent share of all manufacturing employment), we find index values for the two sectors of 5.1 and 2.2 respectively. Other industries that lost more than their share of jobs to Mexico include the already small and shrinking Leather industries (SIC 31) and the Miscellaneous Manufacturing sector (SIC 39). At the other end of the continuum, Tobacco (SIC 21) and the Petroleum and Coal industries (SIC 29) had no NAFTA-TAA certified workers. Several other industrial sectors lost a fairly large number of workers, but less than would be expected based on their percentage of all manufacturing workers.

Table 3. Sectoral impacts of Mexico

Sector name	SIC	Total # of certified workers	Sector's % of certified workers	Sector's % of all workers, 1993	Index of relative impact
Food & Kindred	20	196	0.86	8.86	0.10
Tobacco	21	0	0.00	0.22	0.00
Textiles	22	501	2.19	3.64	0.60
Apparel	23	6,755	29.53	5.75	5.14
Lumber & Wood	24	5	0.02	3.99	0.01
Furniture	25	470	2.05	2.82	0.73
Paper	26	296	1.29	3.71	0.35
Printing/Publishing	27	158	0.69	8.87	0.08
Chemicals	28	605	2.65	5.03	0.53
Petroleum/Coal	29	0	0.00	0.67	0.00
Rubber/Misc. Plastics	30	757	3.31	5.41	0.61
Leather	31	188	0.82	0.62	1.32
Stone/Clay/Glass	32	666	2.91	2.79	1.04
Primary Metal	33	210	0.92	3.88	0.24
Fabricated Metal	34	1,410	6.16	8.11	0.76
Machinery	35	1,910	8.35	10.34	0.81
Electrical Equipment	36	4,302	18.81	8.42	2.23
Transport Equipment	37	2,202	9.63	9.47	1.02
Instruments	38	1,437	6.28	5.19	1.21
Misc. Manufacturing	39	805	3.52	2.22	1.58
Total		22,873	100.00	100.00	

The sectoral impact of production shifts to and increased imports from Canada exhibit a distinctively different pattern (Table 4). Although the strongest impacts were felt among workers in the Leather sector (SIC 31) (which was also heavily affected by competition from Mexico), three different sectors (Lumber and Wood Products—SIC 24, Primary Metal—SIC 33, and Stone/Clay/Glass—SIC 32) sectors experienced a disproportionate share of the employment impacts of Canada.

In sum, we do find distinctive sectoral patterns to the employment impacts of the NAFTA. Not surprisingly, given the significant differences between the Mexican and the Canadian economies, these sectoral patterns appear to depend on whether the production shifts and increased imports originate from Mexico or Canada.

Table 4. Sectoral impacts of Canada

Sector name	SIC	Total # of certified workers	Sector's % of certified workers	Sector's % of all workers, 1993	Index of relative impact
Food & Kindred	20	306	2.63	8.86	0.30
Tobacco	21	0	0.00	0.22	0.00
Textiles	22	85	0.73	3.64	0.20
Apparel	23	151	1.30	5.75	0.23
Lumber & Wood	24	2,221	19.08	3.99	4.78
Furniture	25	300	2.58	2.82	0.91
Paper	26	600	5.15	3.71	1.39
Printing/Publishing	27	0	0.00	8.87	0.00
Chemicals	28	699	6.00	5.03	1.19
Petroleum/Coal	29	0	0.00	0.67	0.00
Rubber/Misc. Plastics	30	185	1.59	5.41	0.29
Leather	31	2,400	20.62	0.62	33.26
Stone/Clay/Glass	32	854	7.34	2.79	2.63
Primary Metal	33	1,425	12.24	3.88	3.15
Fabricated Metal	34	1,025	8.81	8.11	1.09
Machinery	35	326	2.80	10.34	0.27
Electrical Equipment	36	546	4.69	8.42	0.56
Transport Equipment	37	117	1.01	9.47	0.11
Instruments	38	359	3.08	5.19	0.59
Misc. Manufacturing	39	42	0.36	2.22	0.16
Total		11,641	100.00	100.00	

The 20 manufacturing sectors are grouped into 1) the four sectors with the highest Index of Relative Impact of Mexican competition; 2) the four sectors with the highest Index of Relative Impact of Canadian competition; and 3) the thirteen sectors that experienced little or no disproportionate impacts of the NAFTA.³³ We then compare the average labor intensity (defined using payroll as a percent of the total value of shipments) of the three groups in Figure 1a, the average level of productivity (measured with the value added per production worker) in Figure 1b, and the average routinization of the production process (defined as the percent of the workforce employed in blue collar occupations) in Figure 1c. As described above, we expect that the greatest impacts of the NAFTA will be experienced among industrial sectors that are relatively labor intensive, less productive, and more routinized.

As predicted, labor costs made up a larger percentage of total shipments, at least on average, in the four sectors most hurt by production shifts to and increased imports from Mexico, while the reliance on labor inputs was smallest in the sectors experiencing little or no impacts of the NAFTA. Although these sectoral patterns follow our expectations, the differences between the three groups are small. The average

levels of productivity (shown in Figure 1b) demonstrate larger differences between the highly impacted and lightly impacted sectors. In fact, the average productivity levels of the four sectors with high Mexican impacts are less than half the average productivity levels of the sectors with little or no impacts.

Figure 1a

Average Labor Intensity of Highly and Lightly Impacted Sectors

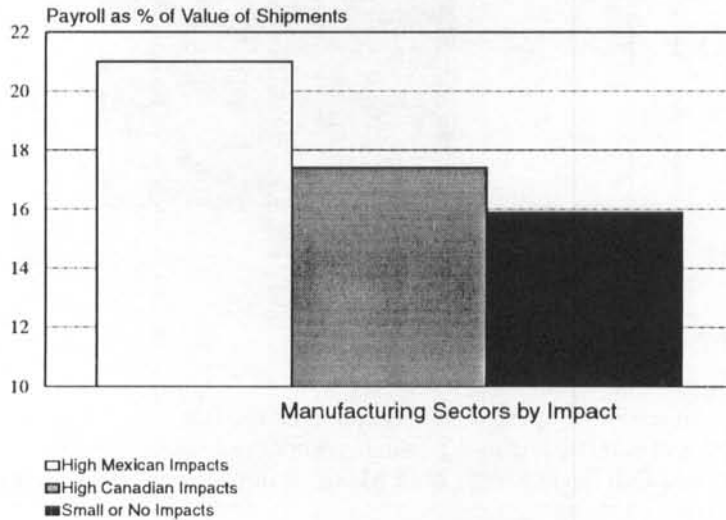


Figure 1b

Average Productivity of Highly and Lightly Impacted Sectors

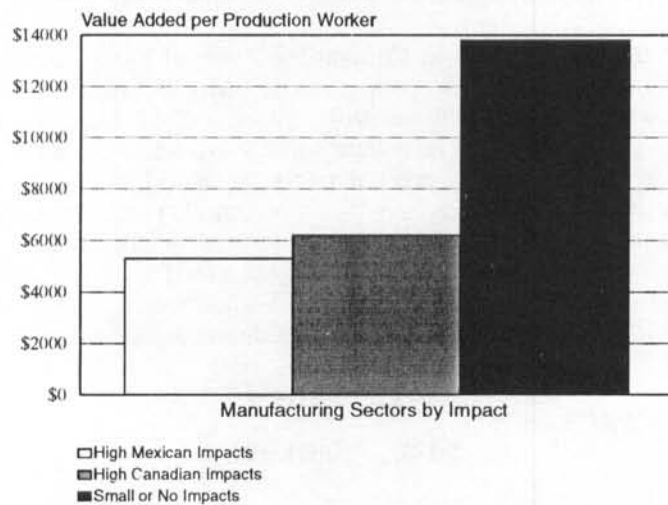
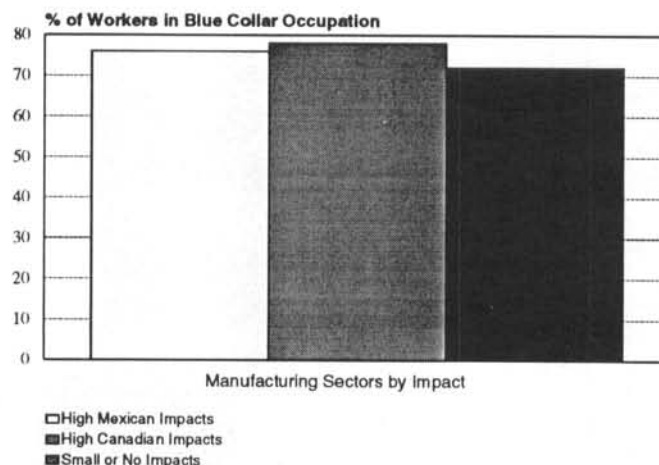


Figure 1c

Average Routinization of Highly and Lightly Impacted Sectors



An interesting variation to the expected sectoral patterns is evident in Figure 1c. The four sectors with high employment impacts owing to Canadian competition used the most routine production processes, followed by the four sectors with high Mexican impacts and then sectors with little or no impacts.

At least at this broad level of aggregation (i.e., two-digit SIC), results suggest that both standard trade theory and the profit cycle model are moderately useful in anticipating the sectoral impacts of the NAFTA. With more detailed information for less aggregated industries, the theoretical frameworks could prove to be even more helpful in anticipating the sectoral consequences of the NAFTA. Next we turn to an analysis of the early spatial impacts of the trade agreement.

Early Spatial Impacts of the NAFTA

We use the size of the largest place in Commuting Zones (CZs) to assign each NAFTA-TAA certification to one of six urban hierarchy categories: 1) Major Metro Centers; 2) Medium Metro Centers; 3) Small Metro Centers, 4) Larger Urban (Nonmetro) Centers, 5) Small Urban (Nonmetro) Centers; and 6) Small Town/Rural. CZs are clusters of counties that share relatively high levels of inter-county commuting, and represent the local labor market arena for the majority of local residents.³⁴ Almost by construction, the largest (Major Metro) CZs have the largest employment base, containing 48% of U.S. jobs in 1993, while less than 1 percent of the jobs are located in the smallest CZs (BEA-Regional Economic Information Systems). Therefore, we again computed an index (SPATIAL IMPACT_{CZ}) comparing the portion of all manufacturing workers (MFG_{CZ}) in the *CZ*th location type with the portion of NAFTA-TAA certified workers (NAFTA_{CZ}) in each of the six location types:

$$SPATIAL\ IMPACT_{CZ} = \frac{NAFTA_{CZ} / \sum(NAFTA_{CZ})}{MFG_{CZ} / \sum(MFG_{CZ})}$$

Three CZ types experienced a disproportionate impact of labor displacement due to Mexican participation in the NAFTA: Medium and Small Metro CZs, and Nonmetro CZs with a Small Urban Center all had an index of relative impact greater than one (Table 5). Although this spatial distribution does not follow the hypothesized pattern of increasing employment impacts as one moves down the urban hierarchy, it is interesting to note that the largest metropolitan places experienced significantly less impact than did many of the smaller locations.³⁵

Table 5. Spatial impacts of Mexico (CZ-Size of Largest Place)

Commuting Zone Type	Total # of certified workers	CZ type's % of certified workers	CZ type's % of all workers, 1993	Index of relative impact
Major metro center	7,291	31.9	47.8	0.67
Medium metro center	8,006	35.1	23.3	1.51
Small metro center	4,607	20.2	15.5	1.30
Larger urban center	859	3.8	5.9	0.64
Small urban center	1,952	8.6	6.8	1.25
Small town/rural	118	0.5	0.6	0.83
Total	22,833	100.0	100.0	

The observed spatial distribution of the impacts of Canadian competition (Table 6) follow the predicted pattern more closely. Nonmetro commuting zones with larger urban centers and those with no urban center appear to be affected most by the shift of production to and increased imports from Canada.

Table 6. Spatial impacts of Canada (CZ-size of largest place)

Commuting Zone Type	Total # of certified workers	CZ type's % of certified workers	CZ type's % of all workers, 1993	Index of relative impact
Major metro center	3,398	29.6	47.8	0.62
Medium metro center	3,607	31.5	23.3	1.35
Small metro center	1,251	10.9	15.5	0.70
Larger urban center	2,500	21.8	5.9	3.68
Small urban center	465	4.1	6.8	0.59
Small town/rural	245	2.1	0.6	3.39
Total	11,466	100.0	100.0	

Conclusions

As the global business environment changes, local firms and communities must respond and adapt to these changes in order to remain viable. International trade theory implies that a more open international trade environment has a potentially negative (job-losing) impact on less-productive industries within (and perhaps beyond) the manufacturing sector. This indeed appears to be the case with the NAFTA. Similarly, product/profit cycle theory implies that less-productive industries will already be located in peripheral areas. Thus in the U.S., manufacturing enterprises located in rural (or less-urbanized) areas are most likely to face negative impacts from an easing of trade restrictions. Again, the available evidence points toward this conclusion.

A few issues should be kept in mind. First, although the problem is small when examined on a national scale, it is not trivial at the local level.³⁶ This is primarily because small local labor markets tend to be less diverse than large ones and offer fewer options for alternative employment for those whose jobs are lost. Second, this paper examines only those jobs lost where workers were certified to receive benefits under a federal government program. This can be considered a minimum of jobs impacted by the NAFTA. Neither secondary effects, nor all jobs lost due to the NAFTA are counted in the TAA data set. Third, it is important to remember that NAFTA is not necessarily the important issue. The NAFTA is merely one facet of the global change in production processes. Changes in technology are another facet. The changing global business environment is the real issue. Communities and firms must devise responses not only to the NAFTA, but also to the new world economy. These responses will likely entail a variety of strategies ranging from increased technological training for workers and stronger school-to-work, education-business ties to enhancement of locally-owned and operated businesses, mobility strategies for workers, and improvement of electronic communication infrastructure. Communities may begin to devise strategies by asking, "How might a given firm in our particular local labor market respond to the changes in their competitive environment brought about by the NAFTA (or other global change)?" Good, locally-oriented answers to this question will help local communities anticipate and prepare for future impacts of the global economy on their own local economies.

FOOTNOTES

1. Recent events in the Mexican economy have curbed the rate of growth; however, the general trend is still that of an expanding Mexican consumer market.
2. The same events referred to in endnote 1 above have also resulted in a less than expected rate of U.S. direct investment in Mexico.
3. J.J. Schott, "The Fruits of Free Trade: The Canada-United States Agreement in Perspective." *Economic Development Quarterly* 3(1) (1989): 3-8.
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6. Wall Street Journal, "Executive Pay: An International Survey. Managers' Income Aren't Worlds Apart." October 12, 1992, Section B: 1.
7. N. Hansen, "The North American Free Trade Agreement and U.S. Regional Development." Paper presented at the annual meetings of the North American Regional Science Association, Chicago, IL (November 1992).
8. From *maquila*, meaning the share of grain given to the miller in payment for grinding a farmer's grain into flour.
9. N. Hansen, "The North American Free Trade Agreement and U.S. Regional Development."

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 KPMG Peat Marwick, Policy Economics Group. *The Effects of a Free Trade Agreement Between the United States and Mexico*. Washington, DC: U.S. Council of the Mexico-U.S. Business Committee, 1991. See also, Bachrach, C., and L. Mizrahi, "The Economic Impact of a Free Trade Agreement Between the United States and Mexico: A CGE Analysis." Pp. 39-79 in U.S. International Trade Commission, *Economy-Wide Modeling of the Economic Implication of a FTA with Mexico and a NAFTA with Canada and Mexico*. USITC Publication 2508. Washington, DC: U.S. International Trade Commission, May 1992.
 R.M. Stern, A.V. Deardorff, and D.K. Brown, "A U.S.-Mexico-Canada Free Trade Agreement: Sectoral Employment Effects and Regional/Occupational Employment Realignment in the United States." University of Michigan, Institute of Public Policy Studies, September 2, 1992. Appendix A in National Commission for Employment Policy, *The Employment Effects of the North American Free Trade Agreement: Recommendations and Background Studies*. Special Report No. 33. Washington, DC: National Commission for Employment Policy (October).
13. The static CGE model employed by KPMG Peat Marwick assumes constant returns to scale technology and perfectly competitive goods markets. Although one scenario of this model allows for change in FDI in Mexico, it does not allow for international migration. Under this scenario, two sets of assumptions are postulated. The first assumes full employment in the U.S. and allows real wages to vary. By definition, this assumption implies no net loss of employment. The second scenario assumes constant real wages in the U.S. and allows employment to vary. One would expect to see employment increase under this assumption since wages are held at what may be an artificially low level. This model uses 1989 as a base year with predicted employment under each NAFTA scenario compared to 1989 employment with no NAFTA in place. Results for employment in individual sectors under both scenarios showed largest losses in the Apparel—SIC 23 and Electrical Equipment—SIC 36 industries. Largest employment gains were predicted in the Instruments—SIC 38 and Transportation Equipment—SIC 37 industries.
14. Stern, Deardorff, and Brown predictions are also based on a static CGE model using 1989 as a base year. They consider nine different scenarios, ranging from a NAFTA under which only tariffs on trade are removed to a NAFTA under which tariffs on trade are removed, Mexico's capital stock is increased by 10 percent due to increased FDI, and 5 percent of the Mexican labor force migrates to the U.S. Employment estimates are made under the assumptions of fixed relative wages across industries, occupations, and locations, full employment in each economy, balanced

trade (or maintenance of the current trade balance), and a fixed labor supply in each country (relaxed in some scenarios). The 'tariff removal only' scenario is considered the base case as it is most similar to the Canada-US Free Trade Agreement. Under this scenario (A), largest employment losses in the U.S. are predicted in Nonferrous Metals—SIC 33, Electrical Machinery—SIC 36, and Transportation Equipment—SIC 37. Largest employment gains are predicted in Non-electrical Machinery—SIC 35, Miscellaneous manufacturing—SIC 39, and wearing Apparel—SIC 23. The result for Apparel represents a departure from the results of most other studies of industry-specific effects. The only scenarios under which a reduction in employment in the Apparel industry is predicted are the two in which labor migration from the United States into Mexico occurs (scenarios F and H).

15. Large employment gains in the Electrical Equipment industry are predicted by the IERF's 5 and 10 year models and DRI's gradual model. The first, prepared in 1990 by the Interindustry Economic Research Fund (University of Maryland) and Centro de Investigaciones Matematicas (University of Guanajuato, Mexico) under a U.S. Department of Labor contract, estimates employment impacts for 53 industries. The model is estimated under two scenarios, one assuming immediate removal of tariff barriers to trade between Mexico and the U.S., and another assuming elimination of tariffs and a gradual (10 year) reduction of nontariff barriers. The model compares these results with those from a no-NAFTA baseline scenario, assuming no change in FDI in Mexico and no international migration. Both mid-term (5 year) and long-term (10 year) results are reported. Under both scenarios the model predicted largest employment losses in the Apparel—SIC 23 and Wood Products—SIC 24 industries. Largest employment gains are predicted in the Non-electrical—SIC 35 and Electrical Machinery—SIC 36 industries.
DRI/McGraw-Hill also uses a macroeconomic forecasting model to predict employment change by industry and region of the U.S. Three scenarios are compared: a baseline or no-NAFTA scenario, a scenario of immediate elimination of all tariff and nontariff barriers to trade with Mexico, and a gradual elimination of trade barriers scenario (over 10 years). Simulations are run for the period 1993-2000. This model also assumes no FDI in Mexico and no international migration. Under the gradual scenario (similar to the NAFTA which was enacted), largest employment losses are predicted in the Wood Products—SIC 24 and Stone, Clay, and Glass—SIC 32 industries, with Apparel running a close third. Largest employment gains are predicted in Non-electrical Machinery—SIC 35, Transportation Equipment—SIC 37, and Electrical Equipment—SIC 36.
Job losses in the Electrical Equipment industry are predicted by KPMG and by Stern, et al., with the largest losses predicted in the same model used by Stern, et al. to predict the fairly substantial Apparel job gain described above.
16. A. Solocha, "The Nature of Comparative Cost Advantage Between Mexico, Canada, and the United States." Paper presented at the annual meetings of the North American Regional Science Association, Chicago, IL (November 1992).
17. Office of Technology Assessment (OTA), U.S. Congress. *U.S.-Mexico Trade: Pulling Together or Pulling Apart?* ITE-545.
18. Office of Technology Assessment (OTA), U.S. Congress. *U.S.-Mexico Trade: Pulling Together or Pulling Apart?* p. 4.
19. N. Hansen, "The North American Free Trade Agreement and U.S. Regional Development".
20. M.E. Conroy, and A.K. Glasmeier, "Winners and Losers on the NAFTA 'Fast-Track'."

21. P.R. Krugman and M. Obstfeld. *International Economics: Theory and Policy*, Third Edition. New York: HarperCollins College Publishers, 1994, pp. 115-116.
22. L. Gomes, *Neoclassical International Economics: An Historical Survey*. New York: St. Martin's Press. 1990:137.
23. E. Helpman and P.R. Krugman. *Market Structure and Foreign Trade*. Cambridge: MIT Press. 1985.
24. T.S. Kuhn. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press. 1970.
25. A.R. Markusen, "Industrial Restructuring and Regional Politics." in Beauregard, R.A. (ed) *Economic Restructuring and Political Response*. Newbury Park, CA: Sage Publications, 1989; R. Vernon, "The Product Cycle Hypothesis in a New International Environment." *Oxford Bulletin of Economics and Statistics*. 41, 1979, pp 255-67; D. Massey, *Spatial Divisions of Labor: Social Structures and the Geography of Production*. New York: Meuthen. 1984.
There is some disagreement in the literature regarding the number of stages in this product cycle of industrial development. But the basic patterns of growth and decline are similar in most of the literature.
26. Markusen. 1985:31.
27. D.M. Gordon, R. Edwards, and M. Reich, *Segmented Work, Divided Workers: The Historical Transformation of Labor in the United States*. Cambridge: Cambridge University Press, 1982; Storper, M. and R. Walker, "The Spatial Division of Labor: Labor and the Location of Industries" in L. Saywers and W.K. Tabb (eds.) *Sunbelt/Snowbelt: Urban Development and Regional Restructuring*. New York: Oxford University Press, 1984, pp. 19-47; Markusen, 1985.
28. For example, R. Edwards, *Contested Terrain: The Transformation of the Workplace in the Twentieth Century*. New York: Basic Books, 1979; E.O. Wright, *Class Structure and Income Determination*. New York: Academic Press, 1979.
29. Massey. 1984:53.
30. Massey, 1984:80.
31. These numbers support Krugman and Lawrence's argument that trade agreements, which make up only 2.5% of the GNP, do not have significant employment impact in the overall national economy.
32. U.S. Bureau of the Census. 1994. *County Business Patterns*.
33. **High Mexican Impact sectors**=Apparel—SIC 23, Leather—SIC 31, Electrical Equipment—SIC 36, Miscellaneous Manufacturing—SIC 39; **High Canadian Impact sectors** = Lumber and Wood Products—SIC 24, Leather—SIC 31, Stone/Clay/Glass Products—SIC 32, Primary Metals—SIC 33; **Small or No Impact sectors**=Food—SIC 20, Tobacco—SIC 21, Textiles—SIC 22, Furniture—SIC 25, Paper—SIC 26, Printing and Publishing—SIC 27, Chemicals—SIC 28, Petroleum—SIC 29, Rubber/Plastics—SIC 30, Fabricated Metals—SIC 34, Machinery—SIC 35, Transportation Equipment—SIC 37, Instruments—SIC 38.

34. See Tolbert and Sizer (forthcoming) for a complete description of the Commuting Zones and the classification by size of largest place.
35. In an additional analysis, we found that the greatest relative impacts were felt among the nonmetro areas of commuting zones with small and medium metropolitan centers, providing somewhat more support for the spatial impact hypothesis from the profit cycle model.
36. Leach, Belinda and Anthony Wilson. 1995. "Bringing "Globalization" Down to Earth: Restructuring and Labour in Rural Communities." *Canadian Review of Sociology and Anthropology* 32(3): 341-364.