R E V I S T A | J O U R N A L | R E V I S T A
Globalización, Competitividad y Gobernabilidad | Globalization, Competitiveness & Governability | Globalização, Competitividade e Governabilidade

GCG

GEORGETOWN UNIVERSITY | universia

Revista cuatrimestral | Four-monthly Journal | Revista Cuatrimestral

Vol. 6 Num. 1
ENERO-ABRIL 2012
ISSN: 1988-7116

http://gcg.universia.net

CARTA DEL EDITOR IN CHIEF

EDITOR IN CHIEF

En el presente número se analizan las relaciones entre dos regiones que han experimentado un importante desarrollo: Latino América y Asia. Es un número especial que trata un tema relevante y actual ha sido posible gracias al conocimiento, rigor y dedicación del Profesor Álvaro Cuervo-Cazurra (Northeastern University, College of Business Administration). El Comité de Dirección y el Consejo Editorial desean agradecer el magnífico trabajo realizado, así como todo el esfuerzo editorial para identificar a los autores, realizar los procesos de revisión y aceptar los trabajos que reúnen los requisitos establecidos en GCG.

Los artículos de este especial tratan de ayudar a comprender mejor las relaciones económicas entre América Latina y Asia y explicar el crecimiento tan importante de las regiones implicadas en los últimos años. Estas investigaciones se presentaron a la conferencia que tuvo lugar en el Tecnológico de Monterrey en Guadalajara en agosto 2010. Todos los trabajos seleccionados para este número especial pasaron por un proceso de revisión doble ciego.

Después de la presentación del especial por parte del profesor Cuervo-Cazurra, los cuatro artículos siguientes se centran en la relación entre América Latina y Asia desde el lado de América Latina, los dos primeros analizan las relaciones directas y los otros dos comparan situaciones entre México y China.

Los tres últimos se centran en la visión desde la perspectiva asiática, con dos análisis de las relaciones directas y otro que nos proporciona algunas lecciones a partir del análisis de la experiencia en China.

De nuevo queremos agradecer la labor realizada por le profesor Cuervo-Cazurra y la de todos aquellos que hacen posible el buen funcionamiento de la revista: miembros del Consejo Consultivo, Consejo Editorial, Editores y Editores Asociados de área, evaluadores, autores, y sobre todo de los lectores.

GCG
GEORGETOWN UNIVERSITY universia

SUMARIO | SUMMARY | SUMÁRIO

DOI SUMARIO: **10.3232/GCG.2012.V6.N1.00** DOI 2012 V6 N1: **10.3232/GCG.2012.V6.N1**

STAFF

CONSEJO CONSULTIVO / ADVISORY BOARD / CONSELHO CONSULTIVO

CONSEJO EDITORIAL / EDITORIAL BOARD / CONSELHO EDITORIAL

COMITÉ EJECUTIVO / EXECUTIVE BOARD / COMITÊ EXECUTIVO

EDITORES Y EDITORES DE ÁREA / EDITORS AND AREA EDITORS / EDITORES E EDITORES DE ÁREA

EDITORES DE ÁREA / AREA EDITORS / EDITORES DE ÁREA

1. COMPETITIVIDAD LOCAL Y GLOBAL, Y PRODUCTIVIDAD E INNOVACIÓN TECNOLÓGICA / LOCAL AND GLOBAL COMPETITIVENESS; PRODUCTIVITY AND TECHNOLOGICAL INNOVATION / COMPETITIVIDADE LOCAL E GLOBAL, E PRODUTIVIDADE E INOVAÇÃO TECNOLÓGICA

SELECCIÓN | PROCEDURE | PROCEDIMENTO

INSTRUCCIONES PARA AUTORES Y PROCEDIMIENTO DE SELECCIÓN

La revista esta dirigida a quienes tienen la responsabilidad de gobernar empresas o dirigir organismos e instituciones públicas o privadas para proporcionarles ideas originales y propuestas innovadoras que contribuyan a la mejora de la competitividad y gobernabilidad de las empresas y los países iberoamericanos en un mundo globalizado. La revista también aspira a servir a la comunidad universitaria y científica de la región como publicación de referencia sobre nuevas ideas. Para ello facilitará la comunicación entre las distintas comunidades universitarias iberoamericanas, las acercará y las articulará alrededor del estudio de áreas concretas, debidamente analizadas mediante aportaciones teóricas, aplicaciones prácticas y estudio de casos reales.

Miembros del mundo universitario, empresarial e institucional podrán remitir sus trabajos originales, no postulados simultáneamente en otras publicaciones, para que sean evaluados y eventualmente publicados en la revista. Los autores que aspiren a la publicación de sus artículos deberán someterse a las siguientes normas:

- Los artículos deben ser **inéditos.**

- Los trabajos podrán escribirse en **español, portugués o inglés**. Su extensión será entre **4500 y 5000 palabras**. Sin embargo, se admitirá cierta flexibilidad atendiendo a la naturaleza del tema abordado.

- Cada artículo deberá ir precedido de un **resumen ejecutivo de no más de cien palabras** en el idioma en que ha sido escrito originalmente. Adicionalmente se incluirá la **categoría en las que se sitúa el artículo**: una de las seis áreas (6) y perspectiva desde la cual se aborda el tema (Teoría, Aplicación y Casos). Además, se incorporará la clasificación del trabajo conforme a los descriptores utilizados por el **Journal of Economic Literature**.

- **El nombre del autor/es no podrá aparecer** en ninguna de las hojas del artículo. Ello facilita el proceso de evaluación, pues los datos se incorporarán en el formulario digital.

- Los originales deben incorporar el **título del trabajo**. Dichos originales estarán editados electrónicamente en formato “Word” o compatible, y se enviarán por vía electrónica (gcg.universia.net). Los autores rellenarán sus datos en la ficha electrónica, especificando el área de estudio. Tan pronto como los autores introduzcan la información completa en el formulario de gestión de artículos, se les enviará acuse de recibo de la recepción de su trabajo.

- Las **referencias bibliográficas** se incluirán en el texto indicando el nombre del autor, fecha de publicación, letra y página. La letra, a continuación del año, sólo se utilizará en caso de que se citen obras de un autor pertenecientes a un mismo año. Se incluirán, al final del trabajo, las obras citadas en el texto atendiendo a la información requerida en las normas **ISO 690/1987** y su equivalente **UNE 50-104-94** que establecen los criterios a seguir para la elaboración de referencias bibliográficas:

Libros: Dornier, P.P.; Ernst, R.; Fendel, M.; Kouvelis, P; (1998), "Global Operations and Logistics: Text and Cases", John Wiley & Son, New Jersey.
Artículos: Campa, J.M.; Guillen, M. (1999), "The Internalization of Exports: Ownership and Location-Specific Factors in a Middle-Income Country", Management Science, Vol. 45, Num. 11, pp. 1463-1478
Artículos con DOI's: Cuervo-Cazurra, A.; Un, C. A. (2007).- "Regional economic integration and R&D investment", Research Policy, Vol. 36, Num. 2, pp. 227-246. doi:10.1016/j.respol.2006.11.003

- La revista se reserva la **facultad de editar formalmente los artículos**, y de separar y recuadrar determinadas porciones del texto particularmente relevantes, aunque respetando siempre el espíritu del original. Los autores tendrán oportunidad de autorizar el formato final de los artículos antes de su publicación.

- Los autores deberán estar en disposición de **ceder los beneficios derivados** de sus derechos de autor a la revista.

- Corresponde al **Editor en Jefe** determinar si el artículo es admisible para su publicación. En caso de que así sea, lo enviará al director de área correspondiente, quien iniciará a su vez el proceso de evaluación.

- Cada artículo será sometido a consideración anónima de al menos **2 evaluadores**, expertos externos a la entidad editora de la revista y a su consejo de editorial.

- La revista se compromete a **responder a los autores** con una decisión editorial en un **plazo aproximado de tres meses** (primera evaluación).

- La **lista de evaluadores** se hará pública anualmente.

INSTRUCTIONS FOR AUTHORS AND PROCEDURE

The journal is aimed at the people with responsibility for governing companies or managing public or private sectors and institutions. Its goal is to provide such people with original ideas and innovative proposals to help improve the competitiveness and governability of companies and the Ibro-American countries in a globalized world. The journal also aims to serve the region's academic and scientific communities by becoming the publication of reference for new ideas. It will do this by facilitating communication among the various Ibero-American academic communities, bringing them closer together and structuring them around the study of specific areas, duly analyzed by means of theoretical contributions, practical applications, and real case studies.

Original papers may be submitted for evaluation and potential publication in the journal by members of the academic, business and institutional spheres. Authors hoping to publish their articles must adhere to the following rules:

- The articles must be previously **unpublished**.

- The papers may be written in **Spanish, English or Portuguese** and must be between **4,500 and 5,000 words long**, although this may be subject to a certain degree of flexibility depending on the nature of the subject.

- Each article must be preceded by an **abstract of no more than one hundred words** in the original language of the article. **The category in which the article is included must also be specified:** area of knowledge (6) and perspective from which the subject is being addressed (theory, application, case study). You must also state how the work is classified according to the **Journal of Economic Literature**'s descriptors.

- **The author's or authors' name(s)** may not appear anywhere in the article. This facilitates the evaluation process since the data will be included in the digital form.

- **The title of the work** must be included in the original. Originals must be presented in digital format – either in Word or in a Word-compatible format – and be sent electronically (gcg.universia.net). Authors must fill out their details on the electronic record, specifying the area under study. Authors will receive an acknowledgement of receipt of their work as soon as they have entered all the information in the article management form.

- **Bibliographic references** must be included in the text, indicating the author's name, date of publication, letter and page. Years must be followed by a letter only when citing works by the same author and from the same year. Works mentioned in the text must be cited at the end of the article as stipulated in the **ISO 690/1987** standard and its equivalent Spanish standard **UNE 50-104-94**, which lay down the criteria for presenting bibliographic references:

> **Books:** Dornier, P.P.; Ernst, R.; Fendel, M.; Kouvelis, P; (1998), "Global Operations and Logistics: Text and Cases", John Wiley & Son, New Jersey.
> **Papers:** Campa, J.M.; Guillen, M. (1999), "The Internalization of Exports: Ownership and Location-Specific Factors in a Middle-Income Country", Management Science, Vol. 45, Num. 11, pp. 1463-1478
> **Papers with DOI's:** Cuervo-Cazurra, A.; Un, C. A. (2007).- "Regional economic integration and R&D investment", Research Policy, Vol. 36, Num. 2, pp. 227-246. doi:10.1016/j.respol.2006.11.003

- The journal reserves **the right to formally edit the articles** and to separate particularly relevant parts thereof and put them in boxes, always in accordance with the spirit of the original. Authors will be given the chance to authorize the final format of their articles prior to publication.

- **Authors must be willing to assign all the benefits** of their copyright to the journal.

- Responsibility for deciding whether the article is fit for publication lies with the **Editor-in-Chief**. If this is the case, the Editor-in-Chief will send it to the relevant area director.

- Each article shall be subject to consideration on an anonymous basis by at least **2 expert assessors** not belonging to the magazine's publisher or to its editorial board.

- The journal undertakes **to notify authors** of an editorial decision within **approximately three months** (first evaluation).

- **The list of referees** will be published on an annual basis.

INSTRUÇÕES PARA AUTORES E PROCEDIMENTO DE SELECÇÃO

A revista é dirigida a quem tem a responsabilidade de administrar empresas ou dirigir organismos e instituições públicas ou privadas para lhes proporcionar ideias originais e propostas inovadoras que contribuam para a melhoria da competitividade e governabilidade das empresas e dos países ibero-americanos num mundo globalizado. A revista aspira igualmente a servir a comunidade universitária e científica da região, como publicação de referência sobre novas ideias. Para isso irá facilitar a comunicação entre as diferentes comunidades universitárias ibero-americanas, irá aproximá-las e articulá-las à volta do estudo de áreas concretas, devidamente analisadas através de contribuições teóricas, aplicações práticas e estudo de casos reais.

Membros do mundo universitário, empresarial e institucional poderão enviar trabalhos originais para serem avaliados e eventualmente publicados na revista. Os autores que desejem publicar os seus artigos deverão submeter-se às seguintes normas:

- Os artigos devem ser **inéditos**.

- Os trabalhos podem ser escritos em **espanhol, português ou inglês**. A sua extensão deverá ser entre **4500 e 5000 palavras**. No entanto, será admitida uma certa flexibilidade, atendendo à natureza do tema abordado.

- Cada artigo deverá ser precedido de um **resumo com o máximo de cem palavras** na língua em que tenha sido escrito originalmente. Adicionalmente será incluída a **categoria na qual se situa o artigo**: uma das seis (6) áreas e perspectiva a partir da qual o tema é abordado (Teoria, Aplicação e Casos). Será, além disso, incorporada a classificação do trabalho de acordo com as descrições utilizadas pelo **Journal of Economic Literature**.

- **O nome do(s) autor(es) não poderá aparece**r em nenhuma das páginas do artigo. Isso facilita o processo de avaliação, pois os dados serão introduzidos no formulário digital.

- Os originais devem conter o **título do trabalho**. Estes originais serão editados electronicamente em formato «Word» ou compatível, e serão enviados por via electrónica (gcg.universia.net). Os autores preencherão os seus dados na ficha electrónica, especificando a área do estudo. Logo que os autores introduzem a informação completa no formulário de gestão de artigos, é-lhes enviado um aviso de recepção do seu trabalho.

- As **referências bibliográficas** serão incluídas no texto, indicando o nome do autor, a data da publicação, título e página. A letra, a seguir ao ano, só será utilizada caso sejam citadas obras de um autor pertencentes a um mesmo ano. Serão incluídas, no final do trabalho, as obras citadas no texto, considerando a informação requerida nas normas **ISO 690/1987** e equivalente **UNE 50-104-94**, que estabelecem os critérios a seguir para a elaboração de referências bibliográficas:

> **Livros:** Dornier, P.P.; Ernst, R.; Fendel, M.; Kouvelis, P; (1998), "Global Operations and Logistics: Text and Cases", John Wiley & Son, New Jersey.
> **Artigos:** Campa, J.M.; Guillen, M. (1999), "The Internalization of Exports: Ownership and Location-Specific Factors in a Middle-Income Country", Management Science, Vol. 45, Num. 11, pp. 1463-1478
> **Artigos com DOI (Identificador de Objecto Digital):** Cuervo-Cazurra, A.; Un, C. A. (2007).- "Regional economic integration and R&D investment", Research Policy, Vol. 36, Num. 2, pp. 227-246. doi:10.1016/j.respol.2006.11.003

- A revista reserva-se a **faculdade de editar formalmente os artigos**, e de separar e reenquadrar determinadas porções do texto particularmente relevantes, embora respeitando sempre o espírito do original. Os autores terão oportunidade de autorizar o formato final dos artigos antes da respectiva publicação.

- Os autores deverão estar disponíveis para **ceder os benefícios derivados** dos seus direitos de autor à revista.

- Incumbe ao **Editor Chefe** determinar se o artigo é admissível para publicação. Caso assim seja, irá enviá-lo ao director da área correspondente que, por sua vez, iniciará o processo de avaliação.

- Cada artigo será submetido a consideração anónima de pelo menos **2 avaliadores**, especialistas exteriores à entidade editora da revista e ao seu conselho editorial.

- A revista compromete-se a **responder aos autores** com uma decisão editorial num **prazo aproximado de três meses** (primeira avaliação).

- A **lista de avaliadores** será tornada pública anualmente.

Enviar los Artículos / Submit articles / Enviar os Artigos:
gcg.universia.net

Consultas / Suggestions / Consultas:
gcg@universia.net

INDEXACIÓN | INDEXING | INDEXAÇÃO

INDICIOS DE CALIDAD DE LA REVISTA DE GLOBALIZACIÓN, COMPETITIVIDAD Y GOBERNABILIDAD (GCG)

GCG: Revista de Globalización, Competitividad y Gobernabilidad está indexada y presente en los siguientes catálogos y bases de datos:

- EconLit (American Economic Association)
- DICE (Difusión y Calidad Editorial de las Revistas Españolas de Humanidades, Ciencias Sociales y Jurídicas, CSIC-ANECA). Area Economía. Cumpliendo el 100 % de los criterios de calidad auditados
- Directorio, CATÁLOGO e Indice LATINDEX (cumpliendo el 100 % de los 33 criterios de calidad)
- EBSCO Publishing's databases
- ABI/Inform ProQuest
- Ulrich's Periodicals Directory
- ISOC-Ciencias Sociales y Humanidades (CSIC)
- DIALNET
- DOAJ (Directory of Open Access Journals)

Ciudad Grupo Santander. Avda. de Cantabria, s/n. Edif. Arrecife, planta 00. 28660. Boadilla del Monte. Madrid, España. Telf: (+34) 91 289 59 23. Fax: (+34) 91 257 15 06.

ISSN: 1988-7116

GCG
GEORGETOWN UNIVERSITY universia

Economic Relationships between Latin America and Asia: A new Research Frontier*

AREA: 2
TYPE: Theory

Relaciones económicas entre Latinoamérica y Asia: Una nueva frontera de análisis
Relações económicas entre América Latina e Ásia: Uma nova fronteira de investigação

AUTHOR
Alvaro Cuervo-Cazurra[1]
College of Business Administration
Northeastern University
a.cuervocazurra@neu.edu

1. Corresponding Author: Northeastern University, College of Business Administration; 313 Hayden Hall, 360 Huntington Avenue, Boston, MA 02115, USA

The recent and rapid increase in economic relationships between Latin America and Asia has created an interest in understanding them better. I review a few of the key transformations of the business relationships and discuss how they form the basis for a new research frontier that authors can explore in the future.

El reciente y rápido aumento de las relaciones económicas entre Latinoamérica y Asia ha suscitado cierto interés en cuanto a la mejor comprensión de las mismas. Examino algunas de las principales transformaciones en las relaciones comerciales y analizo el modo en el que forman la base de una nueva frontera de análisis que los autores podrán explorar en el futuro.

O rápido aumento recente das relações económicas entre a América Latina e a Ásia criou o interesse em compreendê-las melhor. Realizei um estudo sobre algumas das transformações chave nas relações comerciais e analisei de que forma estas criam a base para uma nova fronteira de investigação que os autores podem explorar no futuro.

* I thank the Robert Morrison fellowship at Northeastern University for financial support. All errors are mine.

DOI
10.3232/GCG.2012.V6.N1.01

Received
09.04.2012

Accepted
12.04.2012

1. Introduction

The recent and rapid increase in economic relationships between Latin America and Asia has created an interest in understanding them better. For example, the Inter-American Development Bank has created a series of monographs analyzing the impact of the growth and foreign expansion of particular Asian countries on Latin America; many focus on the importance of China for Latin America (Cesa-Bianchi et al., 2011; Devlin, Estevadeordal and Rodríguez-Clare, 2005; Lora, 2005; Moreira, 2010a), but recent ones have studied the impact of other countries, such as India (Moreira, 2010b) and South Korea (Moreira, 2011). The United Nations' Economic Commission for Latin America and the Caribbean has also contributed to a better understanding of the impact of China on Latin America (Rosales, 2010, 2011); of foreign direct investment in Latin America by China (ECLAC, 2011) and by South Korea (ECLAC, 2007); and of the trading relationships between these two regions (Rosales and Kuwayama, 2010; Rosales and Mulder, 2011). These reports discuss in detail not only how the relationships between the two regions are increasing and deepening, but also how they are modifying long-standing historic relationships that Latin America has maintained with the United States and Europe.

The relationships between Latin America and Asia are not completely new. Historical relationships included the ships that operated the silk route linking China to Mexico via the Philippines at the time of the Spanish Empire, and the large migration flows from China to Peru or from Japan to Brazil later on, among others. However, the two regions maintained limited economic relationships in the 19th century, with Latin America focused on serving the US and European markets after independence, and much of Asia, under the influence of the United States and European countries, focused its own economic relationships with them. The 20th century did not lead to large cross-border economic linkages. In contrast, most of the countries in Latin America and many in Asia engaged in import substitution regimes, or followed communist economic systems, which limited economic relationships with the rest of the world (Yergin and Stanislav, 1998).

The pro-market reforms of the late 20th century changed the paucity of relationships. Both Latin American and Asian countries liberalized their economies and became more integrated with the world, although some Asian countries had started earlier by adopting an export led model of development. The pro-market reforms resulted in an overall increase in the levels of exports and foreign direct investment (Cuervo-Cazurra, 2007; Cuervo-Cazurra and Dau, 2009). In the 2000s, Latin America saw a significant increase in the level and importance of economic flows with Asia. The active promulgation of trade by the Chinese government, with government officials visiting Latin American countries to promote trade relationships, strengthened them.

The increase in economic relationships between Latin America and Asia reflects not only an increase in the importance of Asia as an economic center that requires natural resources from Latin America, but also the rise of Latin America as a consumer center that demands new products from Asia as part of the emergence of a middle class (Economist, 2007). The economic relationships have also resulted in competition in the world arena, especially in manufacturing from China, and emerging recently in services from India (ECLAC, 2011; Moreira, 2010a, 2010b).

Key words
Multinationals, firms, trade, foreign direct investment, Asia, Latin America

Palabras clave
Multinacionales, empresas, comercio, inversión extranjera directa, Asia, Latinoamérica

Palavras-chave
Multinacionais, empresas, comércio, investimento estrangeiro directo, Ásia, América Latina

JEL Codes
F59; 054; 057

Thus, these relationships are modifying older patterns of relationships that Latin America had maintained with other parts of the world, notably the United States and Europe. Table 1 summarizes the evolution of bilateral merchandise exports between Latin America and Asia between 1995 and 2010. The 2000s saw a significant rise in trade between the two regions. Total exports from Latin America to Asia increased sixfold in the period, from US$30.0bn in 1995 to US$186.7bn in 2010, while total imports into Latin America from Asia increase eightfold, from US$28.7bn in 1995 to US$186.7. More significantly, these increases reflect a heightened importance of the relationship, as trade with Asia grew from being about 10% of total exports or imports in the late 1990s to reaching 21.5% of exports from Latin America and 26.8% of imports into Latin America in 2010.

Table 1. Merchandise International Trade of Latin America and the Caribbean, 1995-2010

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Imports of merchandise from world, US$bn	243.0	272.8	327.7	343.0	329.2	383.6	372.4	346.9	361.7	438.5	516.8	615.0	730.7	896.4	670.3	865.2
Imports of merchandise from Asia, US$bn	28.7	30.2	35.6	34.0	33.8	41.7	46.0	47.4	53.1	73.7	95.0	128.3	162.4	203.8	161.1	231.5
Imports of merchandise from Asia, % world	11.8	11.1	10.9	9.9	10.3	10.9	12.4	13.7	14.7	16.8	18.4	20.9	22.2	22.7	24.0	26.8
Exports of merchandise to world, US$bn	230.3	257.5	286.1	281.4	300.8	362.2	350.0	351.6	386.2	478.6	575.9	684.9	769.8	898.5	688.8	868.5
Exports of merchandise to Asia, US$bn	30.0	30.4	34.8	32.0	29.0	33.4	37.2	40.2	46.3	59.3	75.7	92.7	118.1	143.7	133.5	186.7
Exports of merchandise from Asia, % world	13.0	11.8	12.2	11.4	9.6	9.2	10.6	11.4	12.0	12.4	13.1	13.5	15.3	16.0	19.4	21.5

Source: UNCTAD (2012).

The increase in merchandise trade was accompanied by a growth in foreign direct investment (FDI) links. However, these are still relatively limited in comparison to other regions. According to the list of the largest net foreign direct investments between Latin American and Asian countries compiled by ECLAC, only Japan appears among the top net investors in Brazil, Chile, and Paraguay; Taiwan in Dominica; China in Ecuador; and India in Trinidad and Tobago (ECLAC, 2010). Despite the significant growth of Chinese FDI and its economy, not much of it goes to Latin America once tax havens are excluded, and the investments tend to be concentrated in natural resources, while little FDI from Latin America goes to China (ECLAC, 2011).

In addition to trade, there are other economic relationships like immigration and the accompanying remittance flows between the two regions. The analysis of 2010 data from the World Bank (2012) reveals that the estimated stock of immigrants from Latin America in Asia was 419,187, and they remitted an estimated US$1247mn to Latin America, while the estimated stock of Asian immigrants in Latin America was 204,166, and they remitted an estimated US$576mn. The migratory relationship between Brazil and Japan dominates these relationships, with 320,624 Brazilians in Japan and 71,367 Japanese in Brazil. Nevertheless, although important, these migratory flows pale in comparison with others; just the number of Mexican immigrants in the United States was 11,635,995, and they sent back an estimated US$22,190mn in 2010.

2. Special Issue on Economic Relationships between Asia and Latin-America

The papers in the special issue provide a better understanding of these and other economic relationships between Latin America and Asia. They are the outcome of a conference that took place at the Monterrey Tec in Guadalajara on August 19-20, 2010, which was organized by the center for Asia-Pacific under the direction of Clemente Hernández and Mauricio Cervantes. The focus of the conference was to gain a better understanding on the relationships between Latin America and Asia. Of the 17 presentations given, the seven best were selected for inclusion in this special issue, and the rest were selected for inclusion in an edited volume (Hernández Rodríguez, 2012). The papers selected for this special issue went through a double-blind review process and appear in this issue after the inclusion of suggestions.

The papers reflect not only the importance of relationships and the need for a better understanding of them, but also the ability to use this novel and unusual relationship as the basis for a new research frontier that can be explored in detail.

Four of the papers focus on the relationship between Latin America and Asia from the Latin America side, with two of the papers analyzing direct relationships and another two providing comparisons. Montoya (2012) uses the case of the international joint venture between the Mexican conglomerate Grupo Salinas and the Chinese automobile firm FAW to analyze how international joint ventures between firms from developing countries challenge some of the assumptions discussed in the literature. He argues that while the danger of collaborating and creating a competitor is diminished, the challenge of selling products from developing countries is maintained and limits the success of the international joint venture. Falck Reyes (2012) analyzes in detail the evolution of Japanese foreign direct investment in Mexico. She documents how Japanese firms increased investments in the 1980s with the transformation of the economy as pro-market reforms were implemented and especially after the North American Free Trade Agreement was established in 1994, facilitating the expansion of export-led assembly plants (maquiladoras). Hernández Rodríguez and Montalvo Corzo (2012) review the characteristics that lead to the success of clusters of firms. They compare the

experiences of China and Mexico and make recommendations for the creation of more successful clusters in Mexico based on the Chinese experience. Gerber (2012) compares the long-term evolution of the determinants of growth of China and Mexico. Among the multiple explanations for the differences in growth, he concentrates on geographic and institutional determinants, providing detailed recommendations for policy makers.

Three of the papers discuss the relationship from the Asian side, with two analyzing direct relationships and another providing some lessons from the analysis of the Chinese experience. Liu (2012) discusses the relationship between China and Latin America and reviews the common challenges that they face. He reviews historical and current relationships and documents the change and deepening of relationships. Zhu (2012) provides a detailed historical account of the economic relationships between China and Latin America, the impact of the financial crisis, and the continued deepening of the relationships. He details both the benefits and the challenges that the imbalances are creating in the relationships and provides recommendations for policy makers. Wong (2012) reviews the process by which China has been moving up the value chain, providing a detailed framework for better understanding upgrading that can be useful for decision makers.

These papers open avenues for future research on the relationship between Latin America and Asia. Both regions have been changing quickly after the pro-market reforms of the late 20th century and these changes have helped the countries grow and prosper and become more internationally integrated. Future research needs to go deeper into these relationships and use them as a laboratory for providing better academic insights and policy-making recommendations.

References

Cesa-Bianchi, A., Pesaran, M. H., Rebucci, A., and Xu, T.T. 2011. China's Emergence in the World Economy and Business Cycles in Latin America. Inter-American Development Bank working paper IDB-WP-266.

Cuervo-Cazurra, A. 2007. Liberalización económica y Multilatinas (Economic liberalization and Multilatinas). Globalization, Competitiveness and Governability, 1 (1): 66-87.

Cuervo-Cazurra, A., and Dau, L. A. 2009. Structural reform and firm exports. Management International Review, 49 (4): 479-507.

Devlin, R.; Estevadeordal, A.; Rodríguez-Clare, A. 2005. The Emergence of China: Opportunities and Challenges for Latin America and the Caribbean. Inter-American Development Bank and David Rockefeller Center for the Analysis of Latin America at Harvard University.

ECLAC. 2007. Foreign Investment in Latin America and the Caribbean 2006. Santiago de Chile: Economic Commission for Latin America and the Caribbean, United Nations.

ECLAC. 2010. Foreign Investment in Latin America and the Caribbean 2009. Santiago de Chile: Economic Commission for Latin America and the Caribbean, United Nations.

ECLAC. 2011. Foreign Investment in Latin America and the Caribbean 2010. Santiago de Chile: Economic Commission for Latin America and the Caribbean, United Nations.

Economist. 2007. Latin America's middle class: Adiós to poverty, hola to consumption. The Economist, Aug 16th. http://www.economist.com/node/9645142. Accessed April 8, 2012.

Falck Reyes, M. 2012. Japanese Foreign Direct Investment in Mexico and the Impact of the Global Crisis. Globalization, Competitiveness and Governability, this issue.

Gerber, J. 2012. Why Isn't Mexico on China's Growth Path?. Globalization, Competitiveness and Governability, this issue.

Hernández Rodríguez, C. (Ed.) 2011. Cuenca Asia Pacífico: Temas de Economía, Negocios y Competitividad (Asia-Pacific Basic: Economy, Business and Competitiveness Themes). Astra Ediciones: Zapopan, Jalisco, Mexico.

Hernández Rodríguez, C. and Montalvo Corzo, R. F. 2012. Entrepreneurial clusters in China and Mexico: Implications for Competitiveness. Globalization, Competitiveness and Governability, this issue.

Liu, Y. 2012. Promote China-Latin American Relations in the 21st Century. Globalization, Competitiveness and Governability, this issue.

Lora, E. 2005. Should Latin America Fear China? Inter-American Development Bank working paper WP-531.

Montoya, M. A. 2012. International joint ventures among developing country multinationals: The case of Grupo Salinas-FAW. Globalization, Competitiveness and Governability, this issue.

Moreira, M. M. 2010a. Ten Years After the Take-off -Taking Stock of China-Latin America and the Caribbean Economic Relations. Washington D.C.: Inter-American Development Bank.

Moreira, M. M. 2010b. India: Latin America's Next Big Thing? Washington D.C.: Inter-American Development Bank.

Moreira, M. M. 2011. Korea Breaking the Mold of the Asia-Latin America Relationship. Washington, D.C.: Inter-American Development Bank.

Rosales, O. 2010. La República Popular China y America Latina y el Caribe: Hacia una Relación Estratégica. (The People Republic of China and Latin America: Towards a Strategic Relationship). Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile.

Rosales, O. 2011. La República Popular China y America Latina y el Caribe: Hacia una Nueva Fase en el Vínculo Económico y Comercial. (The People Republic of China and Latin America: Towards a New Phase in the Economic and Commercial Relationship). Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile.

Rosales, O. and Mulder, N. 2011. Panorama de la Inserción Internacional de América Latina y el Caribe 2010-2011. La Región en la Década de las Economías Emergentes (Latin America and the Caribbean in the World Economy 2010-2011: The Region in the Decade of Emerging Economies). Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile.

Rosales, O. and Kuwayama, M. 2010. Panorama de la inserción internacional de América Latina y el Caribe 2009-2010: Crisis Originada en el Centro y Recuperación Impulsada por las Economías Emergentes (Latin America and the Caribbean in the World Economy 2009 - 2010. A Crisis Generated in the Centre and a Recovery Driven by the Emerging Economies). Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile.

UNCTAD. 2012. UNCTADstat. International Trade. http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx. Accessed April 6, 2012.

Wong, E. 2012. China's move up the value chain: A Framework for Analysis. Globalization, Competitiveness and Governability, this issue.

World Bank. 2012. Bilateral migration and remittances 2010. http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:22803131~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html. Accessed April 6, 2012.

Yergin, D. and Stanislaw, J. 1998. The Commanding Heights. New York: Touchstone.

Zhu, H. 2012. Building the New Silk Road across the Pacific: Economic and trade relations between China and Latin America after the Financial Crisis in 2008. Globalization, Competitiveness and Governability, this issue.

GCG
GEORGETOWN UNIVERSITY universia

International Joint Ventures among Developing Country Multinationals: The Case of Salinas Group-Faw*

AREA: 2
TYPE: Case

Joint Ventures Internacionales entre multinacionales de países en vías de desarrollo: El caso del Grupo Salinas-Faw

Joint Ventures Internacionais entre multinacionais de países em desenvolvimento: O caso de Salinas Group-Faw

AUTHOR
Miguel A. Montoya[1]
Tecnológico de Monterrey, Campus Guadalajara
mmontoya@itesm.mx

1. Corresponding Author: Tecnológico de Monterrey, Campus Guadalajara; Av. General Ramon Corona 2514; Zapopan; Jalisco 45201; Mexico

I study the determinants of the success of international joint ventures (IJVs) among developing country multinational companies. From the analysis of the case of the IJV between the Mexican conglomerate Salinas Group and the Chinese automobile producer FAW I conclude two points. First, IJVs among developing country firms reveal an implicit assumption of a tension due to helping an industry competitor and gaining market knowledge and technology. Second, IJVs among developing country firms reveal the unique challenge of having to face the perceived disadvantage of lower quality of products created by developing country firms.

Analizo los factores determinantes del éxito de las joint ventures internacionales (IJV, por sus siglas en inglés) entre multinacionales de países en vías de desarrollo. A partir del análisis del caso de las IJV entre el conglomerado mejicano Grupo Salinas y el fabricante chino de automóviles FAW, concluyo lo siguiente: primero, que las IJV entre empresas de países en vías de desarrollo revelan una asunción implícita de cierta tensión derivada de la ayuda a un competidor del sector y de la adquisición de conocimientos de mercado y tecnología; y segundo, que las IJV entre empresas de países en vías de desarrollo revelan el único reto de tenerse que enfrentar a la desventaja percibida de contar con unos productos de calidad inferior creados por las empresas de países en vías de desarrollo.

Estudei as determinantes do êxito de joint ventures internacionais (JVI) entre empresas multinacionais de países em desenvolvimento. A partir da análise do caso da JVI entre o conglomerado mexicano Salinas Group e o fabricante de automóveis chinês FAW, cheguei a duas conclusões. Primeiro, as JVI entre empresas de países em desenvolvimento revelam uma ideia implícita de tensão, por ajudar um concorrente da indústria, e ao ganhar conhecimento de mercado e tecnologia. Em segundo lugar, as JVI entre empresas de países em desenvolvimento revelam o desafio único de ter de enfrentar a desvantagem visível da qualidade inferior dos produtos criados pelas empresas de países em desenvolvimento.

* I thank Alvaro Cuervo-Cazurra and anonymous reviewers for useful suggestions for improvement and Karla Navarro for excellent research assistance. I also thank Ricardo Salinas and the managers at Salinas Group and government officials from the State of Michoacán for the insights on the operations of the firm. All errors are mine.

DOI 10.3232/GCG.2012.V6.N1.02 | Received 03.05.2011 | Accepted 01.03.2012

1. Introduction

I study the determinants of the success of international joint ventures (IJVs) among developing country multinational companies (DMNCs). Although there is a large literature analyzing IJVs (see reviews in Inkpen and Beamish, 1997; Parkhe, 1993; Reus and Rottig, 2009; Salk and Lyles, 2007), most of it has focused on studying IJVs with one partner coming from an advanced economy, the local partner being in a developing country, and both operating in the same industry. In this type of alliances, the implicit assumption is that the local partner provides the knowledge on how to navigate the challenging developing country conditions and gains expertise in technology, while the foreign partner provides the technological expertise and gains knowledge on how to operate in the developing country. This specialization in roles of partners operating in the same industry and the potential of strengthening a competitor, be it the foreign firm gaining a foothold in the developing country or the local firm upgrading its technology, has led researchers to caution about IJVs and the transfer of capabilities to competitors.

However, in contrast to these studies I focus on analyzing IJVs among developing country firms. These challenge the implicit assumption of the specialization of partners since neither partner may be at the technological frontier or lack knowledge on how to operate in developing countries. To gain a better understanding I study the case of the IJV between the Mexican conglomerate Salinas and the Chinese automaker FAW for the creation of a car assembly operation in Mexico in 2007. Although the IJV collapsed by 2009, it reveals several interesting ideas regarding the success of IJVs in general and IJVs among developing countries in particular. First, the case reveals a different logic of specialization since the two companies were operating in different industries and thus the fear of creating a competitor was not present. Instead, the two companies were truly specialized, one in the industry and technology and the other in the market access and navigation of institutional conditions. Thus, this created the opportunity for a deep collaboration and reduced the fear of helping a competitor. Second, external events led to the failure of the IJV as the partners could not solve the challenge of being developing country multinationals; the recession of 2008 and the perceived lower quality of cars created by developing country firms limited their ability to sell.

The paper thus contributes to the literature by providing a better understanding of some of the unique challenges that IJVs among developing country firms face that were little discussed in the literature before. In so doing, it identifies one implicit theoretical assumption of IJV studies: the tension between collaborating for mutual gain and the competition among firms operating in the same industry.

The paper is also useful for managers of developing country firms. It helps them better understand the benefits and challenges of establishing IJVs with other developing country firms. It encourages the specialization of the firms into market or technology to avoid the challenges of helping a competitor, but at the same time cautions about the challenges of undertaking IJVs with other developing country firms since these IJVs, although strategic and potentially profitable, suffer from the perception of lower quality of products generated by developing country firms.

Key words
Alliances, International joint ventures, Developing country multinationals, Emerging markets, China, Mexico, Failure

Palabras clave
Alianzas, joint ventures internacionales, multinacionales de países en vías de desarrollo, mercados emergentes, China, Méjico, fracaso

Palavras-chave
Alianças, Joint ventures internacionais, Multinacionais de países em desenvolvimento, Mercados emergentes, China, México, Falha

JEL Codes
M16; F23

The rest of the paper is organized as follows. In the next section I describe the research design. I then present the case study. I conclude with the lessons from the case study.

2. Research Design

I analyzed the IJV between the Mexican conglomerate Salinas Group and the Chinese automaker FAW that was established in 2007 and lasted until 2009. In 2007 Ricardo Salinas, the president of Salinas Group, one of the largest business groups of Mexico, started negotiations with FAW, a leading Chinese car company, to import Chinese cars to Mexico as a first step towards the manufacturing of Chinese automobiles in Mexico.

I focus on this case study because it is one of the rare instances of IJVs between companies from developing countries. As a result, it can serve as a laboratory for better understanding IJVs, given that this literature has usually studied IJVs between a foreign partner that is an advanced economy firm and a local partner that is a developing or advanced economy firm, or among firms from advanced countries. In these cases, the foreign firm provides the technological sophistication while the local partner provides the access to the market; however, there is a tension in the relationship because the companies operate in the same industry and thus are helping competitors (see Brandenburger and Nalebuff 1996 for a discussion of co-opetition and the tensions).

With the help of a graduate assistant, I gathered public information on the IJV between the two firms and created a timeline of events, identifying the what, when, who, how and why of the actions taken. I conducted in-depth interviews lasting several hours with the owner of the group, Ricardo Salinas, and with Kathleen Ligocki, Salinas Motors Group's director in 2009. These interviews were complemented with a visit to the site of the plant and additional interviews with officials of the Michoacán Ministry of Economic Development, who requested to remain anonymous.

I then followed recommendations of Eisenhardt (1989) and Yin (1994) on how to structure the case study and analyze the information, going back and forth between case study materials and the literature to identify what is unique to this case that can inform theory directly.

3. IJV between Salinas Group and Faw to build Chinese Cars in Mexico

3.1. History of Salinas Group

Salinas Group (SG) started operations in 1906 in Monterrey in the state of Nuevo Leon in Northern Mexico with a furniture factory that Benjamin Salinas opened with his brother-in-law Joel Rocha. In the 1920s, they established the first furniture store called Salinas y Rocha in downtown Monterrey, beginning with their sales system which consisted of microcredit with weekly payments. Different from other companies at the time, they not only sold furniture but also provided the credit to purchase the furniture. By the end of the 1920s they had three stores in the city. These two entrepreneurs understood the value of lending money in order to close the sales, and unknowingly created the business model that today underpins Elektra and Banco Azteca (Salinas Group, 2009).

In 1950 Benjamin Salinas' son, Hugo Salinas R., ventured into the business of manufacturing radios and televisions. In 1952 Hugo Salinas P., the grandson of the founders and son of Hugo Salinas R., was appointed general manager of the business. In 1959 the first store opened, which he named "Elektra", and there he orchestrated a scheme of credit buying and selling goods directly door to door. By 1968 Elektra had 12 stores in Monterrey. In 1976 the devaluation of the peso against the dollar forced the company to temporarily suspend its credit scheme, but it was then resumed until 1989.

In 1987 Hugo Salinas P. retired and named Ricardo Salinas, his son, as the new CEO of Grupo Elektra. In the middle of a strong economic crisis and facing the possibility of the bankruptcy of the business, Ricardo Salinas made a deep restructuration of the Elektra operations. He designed a new business model: low margins, an only cash payment policy and a basic product line. These measures radically changed the path of the company, which slowly but steadily returned to profitability in its operations. In 1993 the company started quoting in the Mexican Stock Exchange. In 1996 Elektra created "Dinero Express" (delivery & payment system of money in Mexico).

As part of its strategy of meeting the lower segments of the population, in 2002 the group obtained a license to create Azteca Bank, which operates in the Elektra stores. In 2003 they also got permission to operate an Afore (management service retirement fund) which rounds out its financial services. In addition, Azteca Bank opened 813 branches in Grupo Elektra stores.

In 1993 a group of shareholders led by Ricardo Salinas made a successful bid for Imevisión public television network, changing the name to TV Azteca. By 1996 TV Azteca began to produce soap operas, establishing Digital Azteca and Azteca Music. In 1997 TV Azteca began quoting in the Mexican Stock Exchange and the New York Stock Exchange. By 2011 TV Azteca was the second largest Mexican television network after Televisa.

In 1998 Azteca TV made a strategic investment in Unefon, a wireless telephone services company. In 2003 the company acquired a stock majority in Iusacell, which became the third largest mobile operator in Mexico, with approximately 7% of the mobile phone market in Mexico and a presence in 90% of the Mexican mobile market.

As part of its expansion in Latin America, in 2005 the company began to franchise its brand Elektra. By 2010 it had 795 stores in Mexico. Between 1997 and 2010 the company expanded its operations in Latin America to 50 stores in Peru, 47 in Guatemala, 23 in Honduras, 12 in Panama, 13 in Argentina and 7 in Brazil.

3.2. Building Chinese Cars in Mexico

The entry into the car industry was an incremental process. In 2003, Elektra started selling automobile tires in its stores, and it became the third largest dealer in Mexico by 2010. In 2005 it started selling motorcycles in the Elektra stores under the brand name Italika; the motorcycles were Chinese made and sold under a brand owned by Electra. In three years they reached 56% of the total units sold in the country[1].

The success of the experience selling motorcycles induced mangers to try to repeat it selling cars to people with low income who did not otherwise have access to the established brands. According to Javier Sarro, chairman of the transportation division of Salinas, it took two years of analysis and research. Thus this was not an improvised business for the company, and they visualized having the best after-sales service worldwide[2].

In 2007 Salinas started a formal search for a Chinese partner to enter the car industry. The major Chinese manufacturers were: FAW, Geely, BAW Beijing Automobile Works, Beigi Futon Chery Automotive, Dongo Feng Motor, and Chana. Salinas had talks with over 10 manufacturers, but there was the most progress with Geely. However, after much analysis, the partnership with Geely did not come to fruition and instead Salinas partnered with FAW. The reason for selecting FAW as the best option was its resources and higher international experience. For Salinas, FAW was the best partner for the successful development of an automotive project.

3.3. History of FAW

First Automobile Works (FAW) was founded in 1953. In 1956, under the guidance of China's Central Committee and with assistance from the former Soviet Union, the construction of China's first automotive production base was completed. The period from the start of production in 1956 until the end of 1978 was a critical growth and development period for FAW. In 1978, reforms were initiated by the Chinese government to assist FAW and other state enterprises in catching up with the economic targets temporarily pushed back by the environment of the "Cultural Revolution". FAW pushed forward with new technology, tripling the number of product offerings and increasing production from 30,000 to 60,000 units. In Shanghai, FAW had a Development and Testing Center that was the leader in automotive research, was the largest in China, and was the only vehicle-testing center in the country for cold and semi-tropical climates.

1. Martinez (2007).

2. See interviews in Aviles (2007) and Hoyo (2007).

During the 1983-88 period, the company based its new policies on moving the corporation away from the priorities of a traditional state-owned enterprise to that of a modern profit-driven organization. Profitability and sales growth were infused into the company culture. Taking a cue from overseas, many Japanese production techniques were incorporated into FAW´s manufacturing process to enhance efficiency. With the support of China´s Central Committee, FAW received enhanced rights for selling products through its proprietary sales channels and for overseas trade, and self-empowerment for enterprise planning. By 2010, FAW was present in Egypt, Iraq, Kenya, Pakistan, Russia, South Africa, Ecuador and Uruguay. The resulting new company atmosphere allowed FAW to follow the global trend in revising and replacing models at a much more rapid pace to meet increasing market demands. New light, medium and heavy trucks were planned in conjunction with a new range of automobiles.

In 1991 FAW created a joint venture with Volkswagen. In the period between 1991 and 2001 there were joint ventures formed with other foreign firms like Toyota and Mazda, Volkswagen and Audi. At the same time, FAW maintained its own brand of luxury models.

Its technology allowed the manufacture of cheap vehicles with basic standards worldwide. The United States, the EU and Japan adopted the NCAP (New Car Assessment Program) system, by which an authoritative institution or an industrial organization regularly conducted impact tests on new vehicles for sale in the market by applying standards more stringent than the safety regulations stipulated by the government. In China the level of safety standards was different. The China Automotive Technology and Research Center (CATARC) developed the C-NCAP, or China New Car Assessment Program, allowing for China's automotive standards and technological and economic development conditions. The distinct differences between countries in respect to the composition of the auto population, the typical types of impact accidents and the technical levels resulted in differences in the NCAP systems implemented by countries in terms of the organizing and implementing organizations, test items and test conditions. C-NCAP, too, was formulated on the basis of China's national conditions, road traffic conditions and accident analyses (China New Car Assessment Program, 2009).

3.4. Mexican automobile industry[3]

The automotive industry represented 3.5% of the Mexican economy and was the principal domestic manufacturing engine. Some 650,000 people worked directly in it, with 2.5 million people employed once machine shops, vulcanizing, parts stores, gas stations and toll booths are included. The role of the automotive industry in Mexico's economy was important because it affected other industries like glass, steel and rubber. In addition, this industry contributed significantly to job creation and attracting foreign direct investment. Transportation equipment manufacturing represented 19% of manufacturing GDP, exports of auto parts accounted for 12% of total exports, employment generated by the auto industry represented 13% of manufacturing employment and flows of foreign direct investment in auto parts were 15% of total FDI flows to the manufacturing industry.

3. All data from this subsection came from International Congress of the Automotive Industry in México (CIIAM).

In 1999, Mexico was eleventh in world car production, competing with major producers such as Italy, Belgium and Brazil. The proximity to Mexico made the U.S. a major supplier of finished goods and intermediate products for the major automakers, as growing demand for the world's biggest market and dissatisfaction with working conditions in that country led U.S. companies to move to Mexico.

From 2004 to 2007, the demand for new cars exceeded one million sales in the country. This was considered a very positive market performance and suitable for the introduction of a product accessible to a social sector that was an untapped economic laggard in the market.

By 2007 Mexico produced about 2 million light vehicles, of which 1.5 million were exported. Vehicles produced in Mexico included the Chevy HHR crossover Chevrolet, the GM pickup trucks by Chrysler, the VW Beetle and Jetta, the Honda Accord, the Tiida, the Nissan Versa and Tsuru, and the Ford Fusion, Milan and Lincoln MKZ, among others.

In Mexico, 1.2 million vehicles entered with temporary permits or were legally imported. The marketing of these cars was informal and unfunded, and they are also generated high levels of pollution, with limited utility to generate jobs or investment and no income to the state or country. This was because there was an unmet demand in the market for the middle and lower class consumers, between 25 and 54 years of age, who represented 63% of the national population pyramid. Of these consumers 75% did not have a car, meaning 31 million were potential consumers who needed a cheap and reliable car.

The regulation of the industry affected its growth. In 1989, seeking to consolidate the export pattern of industry and looking for better expertise to compete internationally, a decree was enacted for the Promotion Automotive Industry Modernization, which entered into force in November 1990. This decree addressed a deficit in trade balance in the industry, which was mainly caused by its reliance on imported materials for assembly.

3.5. Salinas Motors Group - FAW Business Plan

Salinas and FAW signed a memorandum of understanding in 2007 to start marketing cars in Mexico by the first quarter of 2008. They had a long-term project and plans to introduce a new line of automobiles in Mexico in order to reach a market that had not been explored and also to comply with safety standards and the emission control system to boost the automotive industry.

Initially the vehicles would be imported from China and it was projected that in three years they would be produced in Mexico. To produce the cars, a plant in Zinapécuaro in the state of Michoacán (West of Mexico) was planned. Its aim was to manufacture and export compact cars at affordable prices incorporating the national automotive parts suppliers. This plant was supposed to begin production by 2010, so it could meet the increasing demand in the country. It was also intended to produce and export to Latin America, starting with countries where they already had a presence such as Brazil, Argentina, Guatemala, Peru, Honduras and Panama. FAW also had a particular interest in exploring the markets of USA and Canada.

According to the National Auto Decree 2005, any company wishing to import vehicles into Mexico duty-free had to make a minimum investment of US$100 million in a new plant with an output of 50 thousand vehicles per year. The Decree required that all imported automotive vehicles not manufactured in Mexico pay a fee. In the case of Chinese cars, this was 50% of the value of the unit. Applying such a tax made the consumer price unprofitable and uncompetitive. This is the reason why that Salinas Group and FAW were interested in producing in Mexico rather than merely importing Chinese cars.

The price of vehicles was set a little below the average of those sold in the country. The three models offered by FAW were the FI line (1.0-liter engine) in its sedan and hatchback versions; the F4 with 1.4-liter engine also had the same platform and basic versions and equipment. In addition, the F5 was offered in sedan and hatchback, although it was only available in the equipped version. The prices of the cars introduced in Mexico were: (1) F1 Hatchback Básico: US$ 6,300; (2) F1 Hatchback de Lujo: US$ 6,850; (3) F1 Luxury Sedán: US$ 7,900; (4) F4 Sedán Base: US$ 8,180; (5) F4 Sedán de Lujo: US$ 8,815; (6) F5 Hatchback de Lujo: US$9,536; and (7) F5 Sedán de Lujo: US$ 10,445[4].

FAW cars were sold under the weekly payment scheme commonly used in Elektra. Funding for the acquisition of the two models of FAW cars was granted by Azteca Bank with a down payment of 10 to 30% and interest rates ranging from 12% to 20%, while *Seguros Azteca* (the insurance company of the Salina Group) would provide insurance. There were several financing schemes. For example, the F1 Hatchback, basic version, sold with 30% down and 60 months to pay and credits of US$30 per week. Furthermore, this included vehicle maintenance. For US$ 4.50 more per month, the insurance of the unit was covered. The rate charged on credit was around 20% annually and was provided by Azteca Bank.

On November 23rd, 2007, with the presence of the President of Mexico, Felipe Calderon; President of Salina Group, Ricardo Salinas; President and CEO of FAW, Zhu Yan Feng; and Michoacán governor, Lázaro Cárdenas, the first stone was placed where the FAW automobile assembly plant was supposed to be built in Zinpapécuaro, Michoacán. This was applauded by the federal agent after pointing out that the strategic alliance between Salina Group and one of the biggest car producer in China would generate about 2,000 direct jobs and about 14,000 indirect jobs. This started a new stage that was to be the largest investment from China in Mexico to date. In the opening ceremony, Felipe Calderon said that the automaker would benefit the social sectors with little chance of getting a car, since they would be able to acquire one at modest prices.

Ricardo Salinas explained that as a first step the vehicles would come from China and that in three years they would be produced in Mexico. Once the assembly plant was built, it would have a production capacity of one hundred thousand cars annually. Ricardo Salinas added: «Today is an important day for Salinas Group because we started a business line that we do not know, we will learn and we will do a lot of cars and very well done». Ricardo Salinas said that for Mexico this was a very important investment, because a Chinese company was seeing the country as a very good area for investment. He thanked the General President of FAW Group, Zhu Yanfeng, which took into account the Mexican entrepreneurs.

4. Original prices in Mexican Pesos (exchange rate: MXP 11 per US$ 1) at http://www.elektra.com.mx/

The assembly line in the town of Zinapécuaro was to have an initial investment of US$ 150 million. Then it was expected to have an additional US$100 million investment in order to have a distribution network and service workshops. Thus the total investment would add up to more than US$ 250 million.

Salinas and FAW Group considered that in order to be competitive in the segment of inexpensive cars, they must generate high production volumes. Therefore, they would need a second phase to bring the plant's capacity to 200,000 units per year, considering both domestic and export markets. This second phase was to include a body-stamping process. The Automotive Plant had two access paths, one from Mexico-Guadalajara Highway, and the other from the old road to Zinapécuaro, Michoacán, which connected to the port and thus allowed for an easy export.

On April 7th, 2008, as part of the plant project, the FAW Group President Wang Gang and the President of Salinas Group Motors Javier Sarro signed a commitment letter in order to create a research and development center. The main objective of this center was to link the education sector with the activities of the vehicle assembly plant. At this event the Minister for Economic Development, Eloy Vargas, announced that universities were presented with the model of placement of students with the productive sector. This program sought to link careers to the needs for the Center for Automotive Technological Innovation and Development to produce cars in Mexico designed by Mexicans with Chinese technologies. Vargas said the graduating skilled labor from Universities will contribute to the development of Michoacán[5].

The Ministry for Economic Development of Michoacán explained that both companies intended to set up R&D laboratories in Mexico. The main objective was the designing of vehicles and bodies for markets in Mexico and Latin America (Panama, Guatemala, Honduras, El Salvador, Brazil, Peru and Argentina). Likewise, the estimated investment for the construction of this center of research and development was US$ 12 million. Among the benefits for Michoacán from the investment, the government of Michoacán found: triggering the industrial development of the state; anchoring the new industrial zone in the state; increasing more than 5% of the economically active population; creating a center of research and development of world class body design; and being China's largest investment state receptor in the country.

This strategic project was crucial in the industrial development of Michoacán, promoting the opportunity to move into the automotive sector. This was one of the segments of the heavy and technology industries that was most likely to generate economic income and jobs, attracting investment through plants that generate and require the products and services of local companies. All of these characteristics facilitated an increase in job creation and in the generation of new poles of development. All these concepts and the need for national components for automobile assembly opened the door for the consolidation of the automotive cluster. Additionally, they also triggered the creation of a research and development center, which would help attract companies that are specialized in the field. This promoted the consolidation and positioning of the State of Michoacán as the best option in the sector given its geographical location, logistics and technology. In the same way, all the above would contribute to developing local talent through linkage programs with 12 universities in

5. Estrada (2008).

the state of Michoacán; additionally, a 5% increase in the GDP of Michoacán was expected as the home of the popular car in Mexico and Latin America.

In 2007, officials from the Ministry of Economy authorized the importation of approximately 5,000 vehicles from the F1 and F5 models from China, which arrived in the country in October 2007. The cars were disembarked in December of that year, at the port of Lázaro Cárdenas Las Truchas, Michoacán in Mexico's Pacific coast. These remained on board until they got a permit to be released, and were commercialized from mid-January in the company stores, mainly in the Federal District and the central states of Mexico and Morelos. They were also sold in the western state of Michoacán and Guerrero, a state from the southeast of Mexico.

3.6. External Shock: Economic Crisis

The U.S. economic crisis, the international economic recession, unemployment and the crisis being experienced by the global automotive industry negatively affected the mood of consumers in an atmosphere of uncertainty. All these factors made it difficult to invest in the purchase of a vehicle or other high-cost product.

According to The International Organization of Automobile Manufacturers (IOCA) the volume of world production in 2008 declined 4.1% over the previous year. The Mexican Association of the Automotive Industry (Asociación Mexicana de la Industria Automotriz, AMIA, 2009) announced that in the first quarter of 2009, 246,878 vehicles were sold, 100,182 fewer than were sold in the same period the year before. The AMIA attributed the lack of credits to job insecurity and to the drastic drop in sales. But to these must be added the general rise in prices for cars, as well as the constant increase in gasoline prices, the crushing taxes that raise prices of vehicles (VAT, ISAN, *tenencia* which is an annual payment for having a vehicle), and payments services such as verification, plates and insurance against theft and accidents. Consumers, fearful of adversity, stopped buying cars and new vehicle sales in December fell nearly 20%, and closed the year with a contraction of 6.8%. Recent analysis from Frost & Sullivan "How the Economic Crisis is Affecting the Passenger and Light Commercial Vehicle Market in Mexico" revealed that the market sold 1,025,520 units in 2008 and it was estimated to be reduced by approximately 175,500 units in 2009 due to the economic crisis.

In 2007, Mexico's automobile credit fell one percent, while in 2008 it decreased by 12 percent. It is not just financial institutions that are reluctant to provide credit, but also the automotive and banking institutions who are also putting restrictions on lending money. Mexico's federal government gave the automobile industry a rescue package to stay afloat in these difficult conditions. For example, the Technical Stoppage Program developed by the Mexican government helped about 60 major companies related to the automotive industry, and was designed to help companies through the third payment of salaries to avoid layoffs.

3.7. Dissolution of Agreement

During the partnership between Salinas Group and FAW between 2008 and 2009, about 5,000 FAW cars were sold in Mexico. By February 2010, Salinas Group announced the end of the partnership with FAW and its automotive operations. «I believe that this world does not need another (automotive) plant», said Ricardo Salinas on April 12th, 2009, when he announced the suspension of the construction of the FAW factory in Mexico. In his opinion, the Mexican market did not provide the same growth prospects and economics of scale for the business.

Several problems limited the success of the alliance. First, at the macroeconomic level, the international economic recession and the crisis being experienced by the global automotive industry scuttled the plans of the Salinas Group-FAW project in Mexico. FAW found a great deal of mistrust and low acceptance of its products by Mexican consumers, leading to a reduction in the supply of vehicles in the current year. These factors also lead to a delay in the investment for the assembly plant in national territory.

Second, at the industry level, there was very strong competition and the cars sold were not as competitive as thought. As Salinas realized, the Mexican automotive market was quite mature, there were a variety of cars at all price levels (Chrysler, Ford, General Motors, Nissan, Volkswagen, BMW, Honda, Toyota, Peugeot, Renault, Suzuki, Fiat, Subaru, Mercedes Benz, Jaguar, Mazda and Volvo, among others, have a presence in the Mexican market) so it was difficult to participate in the market with a car from a country with little automotive tradition and with a perception of poor quality.

Salinas also found that the inexperience of FAW for export, since they only had experience in developing countries with less sophisticated automotive markets, was a barrier to business growth. FAW had no experience in the selling and marketing of cars in markets with high competition. In the Chinese automotive market in the last two decades, the local demand for vehicles had always grown at a higher rate than the supply.

Another weakness of the alliance Salinas Group-FAW was that the price of cars was not much lower than its competitors (only 5 to 7% lower than a GM-Chevy, for example). Salinas thought that their own credit through the Azteca Bank and the insurance of the same company would be enough to make FAW cars attractive in the Mexican market. But other automakers' distributors also had their own, very competitive, credit system. Also, in Mexico, bank and savings houses' credit to buy new cars were popular. Furthermore, in Mexico any new reduced-price compact car had very strong competition in the imported used cars from the neighboring U.S., which had a low price and often do not require the payment of all the taxes and insurance for circulation. Finally, Salinas failed to sell FAW cars to buyers groups, such as taxi companies or syndicates, local or state government or large companies (except their own, like TV Azteca).

Third, at the firm level, the commercialization of automobiles by Salinas Group also faced a challenge of infrastructure and logistics. Unlike motorcycles, cars could not be sold at the Elektra store which offered appliances or furniture. The sale of vehicles required the creation of a network of distributors and mechanical workshops separate from Elektra stores. Those new car stores increase the fixed costs of the operation.

Furthermore, the cars did not meet Department of Transportation safety and pollution standards in the United States, a market that they wanted to access from Mexico. Due to this, FAW did not put much effort into the partnership with Salinas Group, as they found the Mexican market came with high competition. On the other hand, demand for automobiles in China continued to grow, causing FAW to focus on its domestic market. This, along with the crisis in the North American automotive industry and the boom of their business in China, made the FAW partners give little attention and effort to the Mexican adventure.

4. Conclusions

The case supports the idea that specialization is good and thus does not create problem of competition. It initially appeared that there was a good complementarity between partners. FAW was a specialist in the mass production of cars at affordable prices in China and Salinas Group was a specialist in the sale of goods on credit to the middle and lower-middle class of Mexico and other Latin America markets. The case reveals a different style of specialization since the two companies were operating in different industries and thus the fear of creating a competitor was not present. As mentioned, the two companies were truly specialized, one on the industry and technology and the other in the market access and navigation of institutional conditions. Thus, this created the opportunity for a deep collaboration.

A lesson for managers of emerging country firms is that unlike other consumer products that can be imported from low cost regions (China, Southeast Asia, India), importing durable goods, where a popular and renowned brand and its local distributors are important because of the high price (more than fifteen months of household income) and regular maintenance, is more difficult. The market introduction of these goods in a competition with developed countries' multinationals is challenging and requires different strategies than those used for selling consumer goods (less than three months of household income) with no substitutes and perception of better quality-price relation.

Being developing country firms, they do not solve the perception that products are of lower quality. The perception of low quality of the goods imported from a developing country multinational company in a market with competition from large multinational firms from developed countries, along with the inexperience of the local partner in that specific market, where its competitive advantages (existing stores and immediate credit) was not valuable, leads to a failure of the association. Some of the most notable challenges that the alliance between Salinas Groups and FAW faced were: (i) FAW cars were not high quality, even though they were acceptable for small markets (Libya, Iran, Syria, Ecuador, etc.); (ii) the sale of the cars required new sales and service spaces; (iii) there were no interested buyers groups (taxis, government or business); (iv) communication between the parties was not good; and (v) the economic crisis being experienced by the global automotive industry negatively affected the mood of consumers in an atmosphere of uncertainty. Thus, the case cautions about the challenges of undertaking IJVs with other developing country firms since these IJVs, although strategic and potentially profitable, suffer from the perception of lower quality of products generated by developing country firms.

References

Asociación Mexicana de la Industria Automotriz, AMIA (2009). Estadísticas 2009. Asociación Mexicana de la Industria Automotriz. http://www.amia.com.mx/estadisticasvm.html. Accessed on April, 15th, 2010.

Aviles, R. (2007). Comercializará Elektra autos chinos. Mural, December, 1th. www.mural.com. Accessed on May, 15th, 2009.

Brandenburger, A. and Nalebuff, B. (1996). Co-opetition. New York: Broadway Business.

China New Car Assessment Program (2009). Document. http://www.c-ncap.org/C-NCAP/index.htmhttp://www.c-ncap.org/C-NCAP/index.htm . Accessed June, 20th, 2009.

CNN Expansión (2009). Reversa a planta de Salinas Motors en Michoacán . CNN Expansion, April 13th. http://blogs.cnnexpansion.com/informacion-privilegiada/2009/04/13/reversa-a-planta-de-salinas-motors-en-michoacan/. Accessed June, 20th, 2009.

Congreso Internacional de la Industria Automotriz en México, CIIAM (2008). http://www.ciiam.com/graficas/cifras2009.pdf. Accessed September, 13th, 2009.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research, Academy of Management Review, 14 (4): 532-550.

Estrada, A. (2008). Generará planta automotriz 12 mil empleos: Sedeco. Reporte Digital, Agencia de Noticias de Michoacán, January, 21th. http://www.reportedigital.com.mx/noticias/negocios/10134.html. Accessed June, 20th, 2009.

Frost & Sullivan Research Service (2009) How the Economic Crisis is Affecting the Passenger and Light Commercial Vehicle Market in Mexico. Frost & Sullivan Research Service, June, 4th http://www.frost.com/prod/servlet/report-brochure.pag?id=N61D-01-00-00-00. Accessed on April, 4th, 2011.

Hoyo, R. (2007) Llegaron los autos Chinos FAW de la mano de Grupo Salinas. Autocosmos, December, 4th http://noticias.autocosmos.com.mx/2007/12/04/llegaron-los-autos-chinos-faw-de-la-mano-de-grupo-salinas. Accessed on May, 15th, 2009.

Inkpen, A. C. and Beamish, P. W. (1997). Knowledge, bargaining power, and the instability of international joint ventures. Academy of Management Review, 22 (1): 177-202.

International Organization of Automobile Manufacturers, IOCA (2009). Production Statistics 2008. http://oica.net/category/production-statistics/2008-statistics/ Accessed on April, 15th, 2010.

Martinez, J. (2007). Autos chinos desde 350 pesos semanales. CNN-Expansión November, 30th. http://www.cnnexpansion.com/negocios/2007/11/29/autos-chinos-desde-350-pesos-semanales . Accessed May, 15th, 2009.

Parkhe, A. (1993). «Messy» research, methodological predispositions, and theory development in international joint ventures. Academy of Management Review, 18 (2), 227-268.

Reus, T. and Rottig, D. (2009). Meta-analyses of International Joint Venture Performance Determinants. Management International Review, 49 (5): 607-640.

Salinas Group (2009). Ricardo Salinas web. https://www.ricardosalinas.com/bio/es/benjamin_salinas_westrup.htm. Accessed May, 7th, 2009.

Salk, J. and Lyles, M. A. (2007). Gratitude, nostalgia and what now? Knowledge acquisition and learning a decade later. Journal of International Business Studies, 38 (1): 19-26.

Yin, R. K. (1994). Case Study Research. Design and Methods. London: SAGE.

R E V I S T A
Globalización, Competitividad y Gobernabilidad
J O U R N A L
Globalization, Competitiveness & Governability
R E V I S T A
Globalização, Competitividade e Governabilidade

GCG
GEORGETOWN UNIVERSITY universia

Japanese Foreign Direct Investment in Mexico and the Impact of the Global Crisis

AREA: 2
TYPE: Case

La inversión extranjera directa japonesa en Méjico y el impacto de la Crisis Global
Investimento Directo Estrangeiro Japonês no México e o Impacto da Crise Global

AUTHOR
Melba Falck Reyes[1]
Pacific Studies Department
University Center of Social Sciences and Humanities
University of Guadalajara
mefalck@gmail.com

1. Corresponding Author: Pacific Studies Department; University Center of Social Sciences and Humanities; University of Guadalajara; Jalisco, MEXICO

This paper aims to analyze the evolution and main characteristics of Japanese Foreign Direct Investment in Mexico, since Japan has been the main source of investment in Mexico coming from Asia. Attracted by Mexico´s liberalization trade policy since the eighties, Japanese subsidiaries already established in the United States transferred some of their production activities into Mexico, contributing to the leading automotive and electronic exporting sectors. Both the North American Free Trade Agreement and the Japan-Mexico Economic Partnership Agreement have incentivized the location of Japanese plants in Mexico. Given the concentration of Japanese Foreign Direct Investment in the manufacturing exporting sector, it is playing a role in the formation of production networks with connections not only to North America but to Asian countries as well.

En el presente artículo se pretende analizar la evolución y las características principales de la inversión extranjera directa japonesa en Méjico, dado que Japón ha sido la principal fuente de inversión asiática en Méjico. Atraídas por la política comercial de liberalización de Méjico imperante desde la década de 1980, las filiales japonesas ya establecidas en Estados Unidos transfirieron algunas de sus actividades de producción a Méjico, contribuyendo a los principales sectores de exportación electrónico y de automoción. Tanto el Tratado de Libre Comercio de América del Norte como el Acuerdo de Asociación Económica Japón-Méjico han incentivado la ubicación de las plantas japonesas en Méjico. Dada la concentración de inversión extranjera directa japonesa en el sector de exportación industrial, ésta desempeña un papel importante en la formación de redes de producción con conexiones no sólo con Norteamérica sino también con países asiáticos.

Este estudo visa analisar a evolução e as principais características do Investimento Directo Estrangeiro Japonês no México, desde que o Japão se tornou a principal fonte de investimento no México, proveniente da Ásia. Atraídas pela política de liberalização comercial do México desde os Anos oitenta, as subsidiárias japonesas já estabelecidas nos Estados Unidos transferiram algumas das suas actividades de produção para o México, contribuindo para os sectores automóvel e electrónico, líderes em exportação. Tanto o Acordo de Livre Comércio Norte-Americano como o Acordo de Parceria Económica Japão-México incentivaram a localização de fábricas japonesas no México. Tendo em conta a concentração de Investimento Directo Estrangeiro Japonês no sector da produção para exportação, este está a desempenhar um papel importante na formação de redes de produção, com ligações não só à América do Norte como aos países asiáticos.

* I thank the Robert Morrison fellowship at Northeastern University for financial support. All errors are mine.

DOI
10.3232/GCG.2012.V6.N1.03

Received
03.05.2011

Accepted
01.03.2012

1. Introduction

When Mexico liberalized its economy in the mid-eighties, foreign direct investment (FDI) became the main source for financing development. One decade later, Mexico undertook an active preferential trade policy by signing free trade agreements with many countries, the most important being the North American Free Trade Agreement (NAFTA) of 1994. This policy made the Mexican economy very attractive to foreign investors, especially as a platform to export to the United States (US) market, which was the biggest market in the world at that time.

At the same time, Japanese transnationals (TNs) already had a well-established platform of subsidiaries in the US, which had arrived among other factors to avoid trade barriers and to overcome the negative impact of the appreciation of the yen in 1985. In turn, the Mexican economy had integrated closely with the US economy through NAFTA. US subsidiaries began to transfer their plants to Mexico and thus contribute to the formation of production networks, especially in the automobile and electronic sectors. This factor, and the differentials in costs between the US and Mexico, became an incentive for the Japanese subsidiaries established in the US to also transfer parts of their production to Mexico. Ten years after NAFTA, Mexico signed an Economic Partnership Agreement (EPA) with Japan. This was the first transpacific agreement for both countries, and both were seeking to overcome their loss of competitiveness in the global economy at the turn of the century.

In East Asia[1], Japan has been the main source of investment in Mexico. Although China´s investment role has been marginal, as a trade partner this country has recently displaced Japan, establishing a relationship that is marked by a growing trade deficit. In the past few years, China has been exporting not only final but also intermediate goods demanded by production networks established in Mexico. Since Japan has been an important source of inward investment in China, it is likely that Japanese firms in Mexico are sourcing part of their input imports from that country. In this way, China enters the picture with two seemingly opposing roles. On the one hand, it competes with Mexico in attracting flows of FDI from Japan, and on the other, it participates in the consolidation of production networks in Mexico through its role as intermediate goods supplier.

This paper constitutes the first phase of a more comprehensive and pioneering research project to study the role of Japanese TNs in fostering production networks in Mexico by means of arm's length trade and/or intra-firm and inter-firm trade relationships, and with the participation of suppliers not only from the domestic market but also with those from North America and East Asian regions. This research project also aims to get insight on the approach that the Japanese firms have taken to locate their plants in the North American region as compared to the important role they have played in the formation of production networks in Asia.

As a first step to the above project, this paper analyzes the evolution and main characteristics of Japanese FDI in Mexico based at this point on national-level data, leaving for

1. For the purpose of this paper, East Asia includes China, Japan and South Korea.

Key words
Foreign investment, trade agreements, NAFTA, Mexico-Japan EPA, production networks, Japanese subsidiaries, global crisis

Palabras clave
Inversión extranjera; acuerdos comerciales; NAFTA; AAE Méjico-Japón; redes de producción; filiales japonesas; crisis global

Palavras-chave
Investimento estrangeiro; acordos comerciais; NAFTA; APE México--Japão; redes de produção; subsidiárias japonesas; crise global

JEL Codes
O57; F21

a second phase of the project the analysis of firm-level data. In order to better understand the reasons why inward investment became an important source of financing investment in Mexico, and also the conditions by which outward investment in Japan became a new strategy for Japanese firms to continue to be competitive in a globalized world in the nineties, the first two sections of the paper summarize the conditions of FDI in both countries. The following three sections analyze the patterns followed by Japanese FDI in Mexico as a response to the signing of both NAFTA and the EPA, and the recent developments of Japanese FDI flows into Mexico in the framework of the current economic crisis. Some conclusions round out the paper.

2. Inward FDI in Mexico

Traditional economic theory claims that capital moves to other geographic locations due to profit differences. Nevertheless, recent research in the area of political economy points out that the present tendencies in technological progress and the fragmentation of production processes have induced TN companies to design their production location plans on the basis of global considerations that do not necessarily have to do with profit differentials among the countries (Ibarra 2005; Gilpin 2001). In this sense, geographic proximity still plays an important role, along with the size of the domestic market and its dynamism, the integration of production networks, a climate of security, the level of training of the labor force, the capacity for absorbing technology and the cost of factors of production (Helpman 2006; Kimura & Ando 2005; Jones, et. al. 2005; Navareti & Venables 2004).

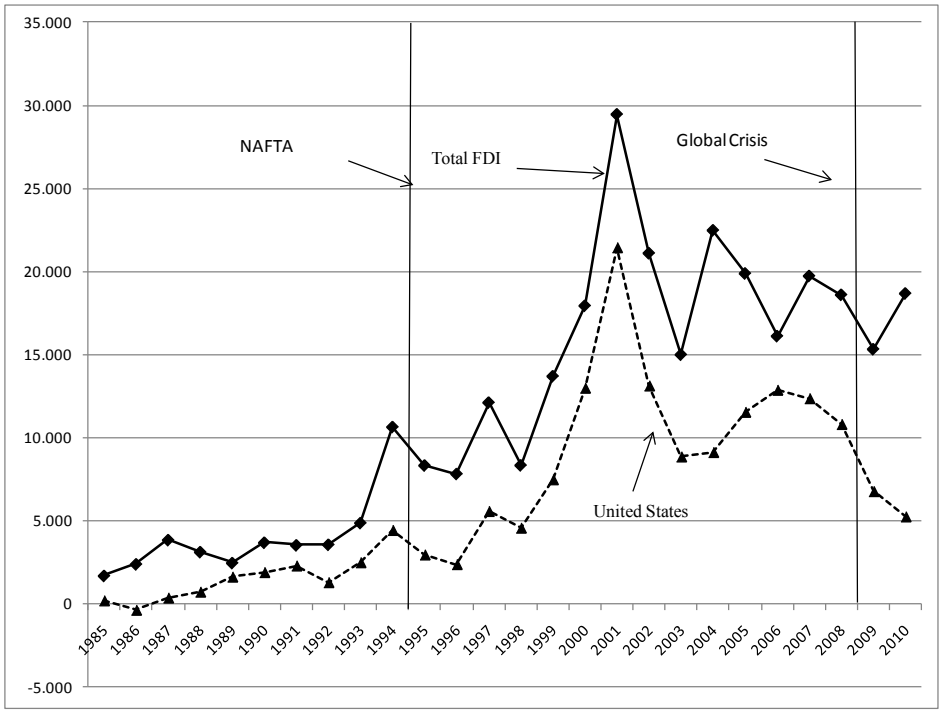
Liberalization of FDI in Mexico started in the mid-eighties, when the sources and the uses of development financing were privatized. In Mexico, the proximity of the US market – the largest in the world – has played a very important role in the location of FDI in this country, especially after the signing of NAFTA in 1994, which among other things implied the partial liberalization (some sensitive sectors were kept protected) of the foreign investment regime and the granting of national treatment to US and Canadian TNs (Dussel Peters 2007). Furthermore, the network of foreign subsidiaries established in the US has favored the flow of investment towards Mexico (see the case of the Japanese subsidiaries further below) as has the difference in the cost of labor among the member countries of NAFTA. Recently, the formation of production clusters at the Mexican-US border in the electronic and automobile sectors has become an important factor for attracting investment not only from American TNs but also European and Asian ones (Carrillo & Barajas 2007).

Thus the inward FDI flows to Mexico increased considerably with the implementation of NAFTA. During the period from 1999 to 2010[2], the total inward FDI accumulated was 228 billion dollars, which means an average annual flow of 19 billion dollars, well above the average flows that entered the country during the period of Mexico's trade policy of unilateral

2. Even though Post-NAFTA initiates in 1994, I take here 1999 as a starting point since the methodology to calculate the FDI was changed by Bank of Mexico starting that year and therefore data for previous years is not strictly comparable.

liberalization (1985-1993), (Figure 1). Approximately half of this flow targeted the manufacturing sector, and a third the services sector, including financial services. However, depending on their country of origin, TNs have shown different interest in sectors' investment. The financial sector, for instance, is practically in the hands of Spanish and North American enterprises; in the distribution sector, the big North American commercial chains are displacing the local retail distributors; and recently, there have been mergers and acquisitions (M&A) in the alcoholic and beverages sub-sector of the Mexican agro-industrial sector. Japanese investment, on the other hand, is concentrated in the manufacturing sector. The largest FDI proportion has been linked with the Mexican export sector and it has concentrated on the automobile and electronic sectors.

Figure 1. Mexico Inward Foreign Direct Investment 1985-2010*.
Million US dollars



Source: own ellaboration with data from National Institute of Statistics and Geography (INEGI), Statistical Information Bank, available at: http://dgcnesyp.inegi.org.mx/cgi-win/bdieintsi.exe/NIVZ101490#ARBOL and Mexico´s Ministry of Economy (Secretaría de Economía); Foreign Direct Investment General Management Office (DGIE); (http://www.economia.gob.mx/?P=1228)

*From 1999 on, the institution in charge of preparing the official statistics of Foreign Direct Investment, the Bank of Mexico, changed the methodology. Therefore, the data for previous years to 1999 is not exactly comparable and it is included in this graph with the only purpose to show previous tendencies.

For their part, the East Asian investment flows have entered the country by two routes: directly from their countries of origin and indirectly from their subsidiaries established in the US. One of the main characteristics of the FDI flows coming from East Asia is that they are closely linked with Mexico´s imports from that region. Hence, Mexico's chronic deficit with East Asia has its roots in both its trade policy, which is greatly dependent on the US market for its exports, and in imports caused by the intra-firm, inter-firm and arm's trade relations of Asian companies (mainly Japanese and South Korean) established in Mexico.

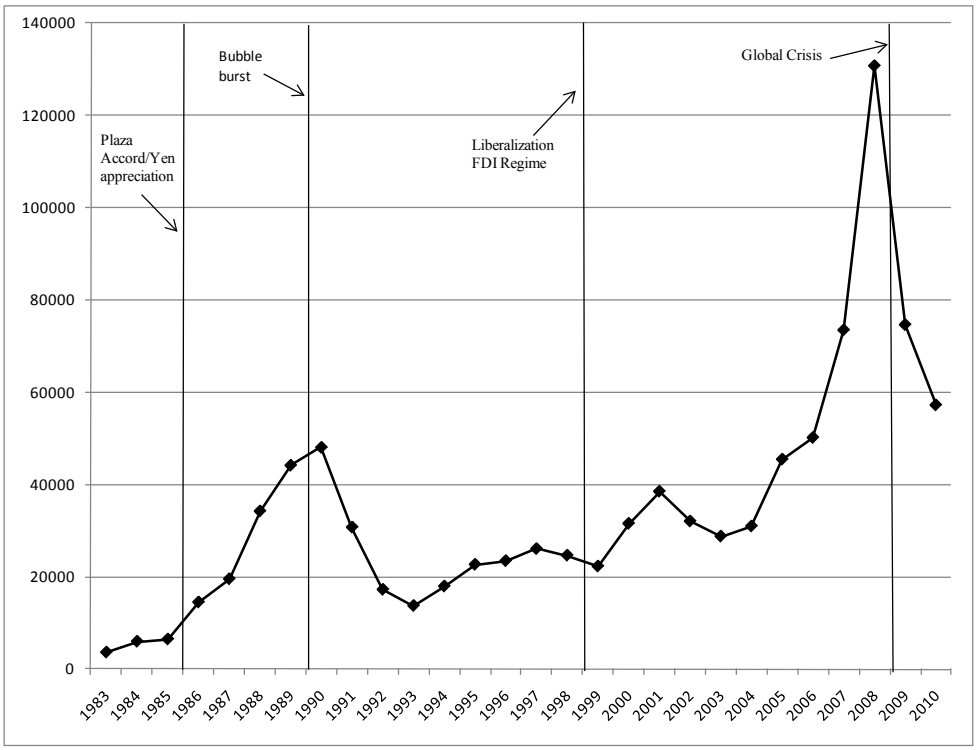
In fact, since NAFTA was signed, exports to the US have increased in relative terms notwithstanding that Mexico has signed FTAs with other major economic powers (the European Union and Japan). And although Mexican exports to Asian countries have increased in absolute terms, they remain low in relative terms, indicating that Mexico has not taking into consideration the great potential offered by the growing and rich Asian markets. However, on the imports side, the US has lost importance in favor of Asia. The main partners of Mexico in that region, Japan, South Korea and China, have increased their share of Mexican imports from 7.9% in 1993 to 20.9% in 2008, a fact that shows the strong link with Asian TNs established in Mexico (Falck Reyes and León-Manríquez, 2010b: 117-119).

Finally, in the first decade of this century, inward investment flows in Mexico have shown less dynamism, signaling the need for deepening the investment liberalization process started in the nineties that has to do with the more protected sectors of energy, oil and telecommunications. Other bottlenecks are found in the need to create more physical infrastructure to support the current high levels of trade volume, to develop human capital and medium and small enterprises and to deepen the penetration of the financial sector in the economy (Urata & Sasuya 2007; OCDE 2007). Notwithstanding these challenges, in the last two decades Mexico has managed to construct a strong trade sector on the basis of foreign direct investment, which has placed the Mexican economy among the top 15 major exporters and importers of the world.

3. Outward FDI from Japan

In the nineties, the Japanese economy slowed its growth rate and faced serious structural problems characterized by a high cost structure that hindered the nation's competitiveness. The traditionally protected sectors, such as agriculture, distribution and financing, began to become a burden for the economy. This was reflected in high food, housing, energy and transportation prices, which caused Japan to have one of the highest costs of living among the industrialized nations. Also during this decade, Japanese outward FDI increased substantially, a pattern that continued during the next decade and made Japan one of the main sources of foreign investment. As Figure 2 shows, Japanese outward FDI presented an increasing pattern, except for the four years following the bursting of the 'bubble' economy in 1989 and the last two years given the effect of the global crisis.

Figure 2. Japan. Evolution of outward Foreign Direct Investment 1983-2010.
Million US dollars



Source: Own elaboration with data from Japan External Trade Organization, JETRO (http://www.jetro.go.jp/en/reports/statistics/).

Among the factors that explain the increased outflow of Japanese investment funds are the appreciation of the yen since the mid-eighties, the high costs of production faced by Japanese firms in the domestic market that induced them to look for lower cost locations (Saxonhouse & Stern 2004; Okina, et al. 2001; Bailey 2003), the opening of the foreign investment regime in Japan in the late nineties (Solís 2005) and the development of new technology that allowed firms to fragment their production processes in different locations. In addition to these were Japan's commercial frictions due to its high trade surplus, especially with the US, which stimulated the Japanese TNs to transfer their production in order to dodge these trade barriers during the eighties (Koido 2003).

Therefore, during the eighties, outward Japanese FDI flows were directed mainly towards the US, targeting the domestic market. In the next decade, Asian countries also became main receivers of Japanese investment and China, which barely attracted Japanese FDI in the eighties, has become at present an important receiver. Unlike investment in the US, the Japanese investment that flows towards China and other neighbors in Southeast Asia is concentrated in the exporting sector. In fact, Japanese investment in Asia has been the engine that promoted that region to become the 'factory' of the world. It has fostered production

networks that have intensified trade in intermediate goods under the modalities of arms' length trade and intra-firms and inter-firms relations, developing in the process the sector of local suppliers in less developed countries of the region (Falck Reyes 2011a).

This pattern of development of Japanese FDI since the eighties has had two major effects on Mexico as a host country: on the one hand it benefited from the flow of Japanese FDI to the US, as that flow promoted the formation of production networks in Mexico not only with the US but also with East Asia, and on the other hand, it faced a greater challenge as it increasingly had to compete with Asian countries for Japanese FDI. It must be pointed out, though, that as labor costs in China have risen lately, some foreign firms have considered Mexico as a good alternative to locate their production.

4. Japanese FDI before the signing of the EPA with Mexico

Until the end of the nineties, Mexico's trade relations with Japan were characterized by a very low penetration of Mexican products in the Japanese market, while imports from Japan were closely linked to the Japanese investment established in Mexico. For exports, the absence of a long-term strategy to penetrate the Japanese market kept Mexico from taking advantage of the opportunities emerging in this market in the nineties due to the deregularization and gradual liberalization undertaken by Japan. The NAFTA absorbed all of Mexico's attention. For imports, the absence of an industrial strategy with emphasis on the development of the small and medium-size enterprises (SME) sector as suppliers to the exporting sector reflected the strong dependence on the inputs imported by the Japanese plants and the cross-border plants known as maquiladoras.

As it has been pointed out, the foreign direct investment flows into Mexico increased significantly after the NAFTA was signed in 1994; according to official data from the Ministry of Economy, Japanese FDI represented about 2.5% of total inflows. However, this statistic does not reflect the whole story regarding the Japanese FDI in Mexico, due to the fact that it does not include the investment from Japanese subsidiary companies established in the US. With the information provided by the survey "The Japanese companies in Mexico 2000", carried out by the Japanese embassy in Mexico, JETRO-Mexico and the Japanese Chamber of Commerce and Industry of Mexico, A.C., it has been estimated that the ratio of the FDI coming from the Japanese subsidiaries in the US to that from the companies in Japan is 3.4:1. The same source estimates that the Japanese FDI represents about 20% of the total FDI in Mexico (JETRO-Mexico). These findings coincide with those obtained by academic research on the maquiladora plants in Mexico, published in a book coordinated by Carrillo & Barajas 2007. According to this study, East Asian investment has been gaining particular importance in the states on the border with the US, where the FDI from Japanese TNs showed a participation of 11% in 2002, concentrated on the electronic and automobile parts industries (Almaraz 2007). In the same study, Carrillo and Hualde refer to the transfer of Japanese subsidiaries from the U.S. to the northern city of Tijuana, most of which have concentrated on the manufacturing of TV sets. This sector has contributed to the high participation Mexico enjoys in the US market.

Concerning the flow of Japanese FDI to Mexico, while the maquiladora plant system began attracting Japanese investment to the country from its establishment in 1964, it was during the eighties that the establishment of new companies began to accelerate: 26 in the eighties, 45 in the nineties and 37 between 2000 and 2007 (Table 1). The attraction factors on the part of Mexico and those of impulse on the part of Japan have changed with time. In the eighties, Mexico's crisis in 1982 coincided with the revaluation of the Japanese yen, as discussed above. In the nineties, the signing of the NAFTA in 1994 was a strong incentive for attracting Japanese FDI. On the other hand, at the end of that decade the liberalization of the regime of capital movement control consolidated in Japan. In the present decade, the two countries' needs to improve their competitiveness in the global markets induced them to create synergies: while Mexico has a consolidated exporting basis that has prospered with the gradual formation of production clusters in the electronic and transport sectors integrated with North American activities; Japan has an important basis of establishments in the US that are interested in taking the advantages Mexico has to offer. Thus, the entrance of Japanese FDI into Mexico is explained to a great extent by both countries' economic relation with the US (Falck Reyes 2009c).

Table 1. Flow of Japanese Maquiladora plants into Mexico, Selected Periods.
Flow data by periods and distribution by State. Number of plants

Flow by periods		Geographical Distribution by State				
Period	Number *	Baja California	Chihuahua	Nuevo León	Tamaulipas	Total**
Total	110	42	18	36	8	104
1978-1979	2	1	1	0	0	2
1982-1989	26	12	5	5	1	23
1990-1999	45	23	6	8	7	44
2000-2004	22	4	4	13	0	21
2005-2007	15	2	2	10	0	14

Source: Own elaboration with data from Yamazaki, Benito (2008).

*The source does not report the year of establishment of two maquiladora plants.

** The source does not report the year of establishment of four maquiladora plants.

Of the total number of Japanese companies established in Mexico until the year 2010 (387), 34% was in the manufacturing sector, 26% in trade activities and the remainder in services and other (Table 2); one third of the companies operate under the maquiladora scheme. According to the survey by the Japanese Maquiladora Association, which collected data from 70 companies in 2004, 46% concentrated on services including banking; 43% concentrated on the production of molds and components and the remaining 13% concentrated on the assembly of products[3].

3. Japanese Maquiladora Association, "Activity Presentation 2004". http://www.economia.gob.mx/pics/p/p1776/Sakae.pdf

Table 2. Japanese firms in Mexico: Establishments and Accumulated Foreign Direct Investment. Distribution by Main Sectors. In percentages.

Sector	Establishments*	Foreign Direct Investment **
Total	100	100
Agricultural	1.1	-6.0
Mining	0.6	0.9
Manufacturing industry	34.2	75.5
Automotive industry	9.2	44.2
Electronic equipment	3.4	10.0
Electricity and water	0.9	0.1
Construction	6.6	5.0
Commerce	25.9	11.7
Transport and communication	0.9	-1.0
Financial services	3.7	0.6
Others	26.1	13.0

Source: Secretaría de Economía (Ministry of Economy), Dirección General de Inversión Extranjera Directa, DGIE; (http://www.economia.gob.mx/?P=1156)

*In 2008 there were 348 Japanese companies.

** Data refers to the distribution of accumulated FDI from 1999-2008.

According to the total value invested, one of the main characteristics of the Japanese FDI in Mexico is its concentration in the manufacturing sector (75.5%), with a positive impact on employment, exports and technical training. According to research done by JETRO, the Japanese companies established in Mexico contribute three of every 100 formal jobs in the manufacturing industry (JETRO-México 2004b). Within this sector, the automobile and electric and electronic sub-sectors have received the greatest Japanese investment flows. On the other hand, according to information provided by JETRO and based on data from Customs agencies about the 100 largest exporting companies in Mexico, 13 Japanese companies[4] have an important role in the exports to the US market, contributing to the surplus that Mexico maintains with the latter country. As a result, Japanese companies have tended to locate their plants in the border states of Baja California and Nuevo León, as well as the center region in the States of Aguascalientes and Morelos where two Nissan plants have attracted more investors (Dussel Peters 2007; Almaraz 2007).

In sum, in the period just before the EPA with Japan, the NAFTA was the spark that triggered the interest of Japanese FDI in Mexico and it coincided with the consolidation of liberalization of the FDI in Japan. The proximity to the US consumer market was a key factor, as was the ability of the Japanese subsidiaries already established in the US to facilitate the integration of Japanese companies in the region, taking advantage of the infrastructure, quality and lower labor costs in Mexico. However, despite the positive impact of Japanese FDI on

4. Nissan Mexicana (11), Matsushita TV (15), Sony Tijuana (24), Alcoa Fujikura (31), Pims (Mitsubishi) (44), Sony de Mexicali (45), Hitachi Consumer Products (61), JVC Industrial (66), Sharp Electronica (67), Sony Nuevo Laredo (74), Honda de México (88), Toshiba Eletromex (96) and Sanyo Energy (100). The number in parenthesis indicates the place occupied by the company (JETRO-México, 2004b).

exports and jobs in the manufacturing sectors, the sum total invested was still low relative to both the FDI received by Mexico and Japan's flows to other countries.

It was in this context that the agreement with Mexico was proposed, and negotiations began in 2001. The complementary nature of the economies, given their respective availability of resources, made the approach more attractive through an EPA. For Mexico, the high potential of the Japanese market, due to the high level of income of its inhabitants, and the high FDI flows that Japan had made since the mid-eighties were powerful incentives to enter through the big gates in Asia. For Japanese firms established in Mexico, 2001 represented a turning point because in that year a certain NAFTA clause took effect, which mandated that companies established in Mexico that had been importing inputs from outside the North American region had to start paying tariffs. Japanese companies started to lose competitiveness in favor of their North American counterparts operating in Mexico. Additionally, Mexico was still an attractive export platform due to the many agreements in which the country participated, and above all due to its proximity to the US market.

5. The Japanese FDI after the EPA with Mexico

What has been achieved five years after the Mexico-Japan EPA was signed? Given the strong link between the Japanese FDI and the trade between the two countries, let's look first to the evolution of trade and then turn to that of FDI.

Total trade between the two countries has accelerated, averaging 17.7 billion dollars a year in the 2005-2010 period, which means that trade more than doubled with respect to the 1993-2004 average. Before the global crisis (2005-2008), exports showed a more accelerated growth (14% a year) as compared to that of imports (7.7%). The global crisis had a negative effect on trade growth in 2009, but the next year it started to recover both for trade with Japan and for trade with the world (Table 3).

Notwithstanding the improved performance of exports after the agreement, exports continue to represent just 23% of the imports, a fact reflected in the deficit in the trade balance, which tripled as an average with respect to the period prior to the agreement. As was already pointed out, this deficit originates in the close relationship between Japanese investment in Mexico and its dependency on the import of inputs, above all parts and components, for the automobile and electronic industries. In this regard, it is important to notice that under the cooperation chapter included in the EPA, JETRO-Mexico and the Ministry of Economy have put in place a program to develop local suppliers for the Japanese automotive industry established in Mexico.

Table 3. Mexico´s Trade with Japan and the World, 1993-2010.
Million dollars

	Japan				World			
	Exports*	Imports	Total Trade	Balance of Trade	Exports	Imports	Total Trade	Balance of Trade
1993	1,077	3,929	5,006	-2,852	51,832	65,367	117,199	-13,535
1994	1,343	4,780	6,123	-3,437	60,817	79,346	140,163	-18,529
1995	1,493	3,952	5,445	-2,459	79,541	72,453	151,994	7,088
1996	1,891	4,132	6,023	-2,241	96,004	89,469	185,473	6,535
1997	1,618	4,334	5,951	-2,716	110,237	109,808	220,045	429
1998	1,225	4,537	5,762	-3,312	117,539	125,373	242,912	-7,834
1999	1,653	5,083	6,736	-3,431	136,362	141,975	278,337	-5,613
2000	2,397	6,466	8,863	-4,069	166,121	174,458	340,579	-8,337
2001	2,019	8,086	10,104	-6,067	158,780	168,396	327,176	-9,617
2002	1,785	9,349	11,134	-7,563	161,046	168,679	329,725	-7,633
2003	1,770	7,595	9,365	-5,825	164,766	170,546	335,312	-5,779
2004	2,170	10,583	12,753	-8,414	187,999	196,810	384,808	-8,811
2005	2,552	13,078	15,629	-10,526	214,233	221,820	436,053	-7,587
2006	2,823	15,295	18,118	-12,472	249,925	256,052	505,977	-6,127
2007	3,153	16,360	19,513	-13,207	272,044	283,233	555,278	-11,189
2008	3,783	16,326	20,109	-12,543	292,637	310,132	602,769	-17,496
2009	2,799	11,397	14,196	-8,598	229,620	234,385	464,005	-4,765
2010	3,473	15,015	18,488	-11,542	298,138	301,482	599,620	-3,344
Period's average								
1993-2004	1,703	6,069	7,772	-4,365	124,254	130,223	254,477	-5,970
2005-2008	3,078	15,265	18,343	-12,187	257,210	267,809	525,019	-10,600
2005-2010	3,097	14,579	17,676	-11,481	259,433	267,851	527,284	-8,418
Average annual growth (%)								
1993-2004	6.6	9.4	8.9		12.4	10.5	11.4	
2005-2008	14.0	7.7	8.8		11.0	11.8	11.4	
2005-2010	6.4	2.8	3.4		6.8	6.3	6.6	

Source: Own elaboration with data from Ministry of Economy (Secretaría de Economía): International Trade Statistics; (http:www.economia.gob.mx/?P=5400; United Nations Commodity Trade Statistics Database, COMTRADE and Japan External Trade Organization, JETRO (http://www.jetro.go.jp/en/reports/statistics/)

*The source for Mexico's exports to Japan is Japan's imports.

In addition, the import flows have been favored by the gradual reduction of duties that used to average 16% before the EPA was signed; the impact of this change has been felt especially in the automobile sector. With the EPA, the Japanese car manufacturers established in the country may import duty-free the equivalent of 5% of the units sold in the Mexican market in the preceding year, and the general duty was lowered from 50% to 20-30% (Japan Ministry of Economy and Trade 2007). Companies such as Isuzu, Hino Motors of the Toyota Group and Mazda have taken advantage of this opportunity and have established a wide network of distributors throughout the country.

Table 4. Participation of Japanese firms in Mexico's automotive industry, 2007-2010. Units and Percentages

	Automotive industry in Mexico					Japanese automotive industry in Mexico				Japan's participation in the automotive industry					
	National production (Qm)	*Domestic market sales (Sm)*	*Exports (Xm)*	*Imports (Mm)*	*Xm/Qm %*	*Production (Qj)*	*Domestic market sales (Sj)*	*Exports *(Xj)*	*Imports (Mj)*	*Production %*	*Domestic market sales (Sj) %*	*Exports %*	*Xj/Qj %*	*Mj/Mm %*	*Mj/Sm %*
2007	2,022,241	1,099,866	1,613,313	690,938	80	556,911	375,975	362,273	181,337	28	34	22	65	26	16
2008	2,102,801	1,025,520	1,661,406	584,125	79	550,579	380,260	364,955	194,636	26	37	22	66	33	19
2009	1,507,527	754,918	1,223,333	n/a	81	445,838	287,417	305,251	n/a	30	38	25	68	n/a	n/a
2010	2,260,776	820,406	1,859,185	n/a	82	615,773	323,571	439,645	n/a	27	39	24	71	n/a	n/a
Growth 2008	3.98	-6.76	2.98	-15.46	-0.96	-1.14	1.14	0.74	7.33	-4.92	8.47	-2.18	1.9	26.96	15.12
Growth 2009	-28.31	-26.39	-26.37	n/a	2.71	-19.02	-24.42	-16.36	n/a	13.75	2.90	13.64	3.29	n/a	n/a
Growth 2010	49.97	8.67	51.98	n/a	1.34	38.12	12.58	44.03	n/a	-7.90	3.59	-5.41	4.28	n/a	n/a

Source: Own elaboration with data from Mexico's Ministry of Economy (Secretaría de Economía); Office of Mexico-Japan Economic Partnership Agreement (http://www.mexictradeandinvestment.com); and Mexican Automotive Manufacturesers Association, AMIA; (http://www.amia.com.mx/index.php)

Note: m=Mexico; j=Japan; Q=National Production; S=Sales; M=imports; X=exports.

At present three Japanese companies – Nissan, Toyota and Honda – have a very important role in the Mexican automobile market, providing more than one fourth of the total production (615,773 units of the total 2.3 million units in 2010). Moreover, these companies export 71% of their total production (439,645 units), which represent 24% of Mexico's total exports in this sector. On the other hand, their share of the domestic market has increased from 34% to 39% from 2007 to 2010. These indicators show the relevance of Japanese FDI in a key sector for Mexico where the country has proven to have comparative advantages (Table 4).

As Japanese FDI is receiving national treatment like its US and European counterparts since the EPA was signed, it has exhibited a strong impulse. According to information obtained from the daily reports by the Mexican Office of the Ministry of Economy in Tokyo, in the post-EPA period (2005-2007) and before the global crisis of 2008, forty Japanese companies announced a total investment of $3,426 million, which is substantially higher than the $2,498 million accumulated between 1999 and 2004 (Table 5). Of the investment announced, 45% is for setting up new plants, and the rest for expanding the productive capacity already installed. The bulk of the FDI planned will be destined for the automobile industry (70% of the announcements) and the electronic industry. Of this planned investment, four states in the republic are the largest recipients: Aguascalientes (45%), Guerrero (17%) and Baja California and Nuevo León (10% each)[5]. If these investment plans become a reality (considering the negative impact of the economic crisis), the Japanese FDI oriented to exports will consolidate and show a greater impulse in the formation of productive chains, which will imply less pressure on imports and more jobs.

5. These statistics correspond to the investment announced both by new companies and by Japanese companies already established in México.

Table 5. Japanese companies: Direct Foreign Investment Announcements plans in Mexico after EPA. Thousand US dollars

Period	Announced investment by sector	Value
2005-2007 Post EPA Mexico-Japan	*Automotive sector*	2,539,600
	Electronic sector	211,300
	Other sectors	675,200
	Total announced in the period	3,426,100
2008-2009 Global Crisis	*Automotive sector*	94,700
	Electronic sector	66,500
	Total announced in the period	161,200
2010 Post-Crisis	*Automotive sector*	211,000
	Electronic sector	2,500,000
	Total announced in the period	2,711,000
2005-2010	**Total announced in the period**	**6,298,300**

Source: Own elaboration with daily data from Mexico's Ministry of Economy (Secretaría de Economía). Office of Mexico-Japan Economic Partnership Agreement: "Síntesis de información. Acuerdo para el Fortalecimiento de las Asociación Económica México-Japón" and JETRO-México (http://www.jetro.go.jp/mexico/economicas/inversion/).

However, the EPA continues to present challenges in terms of investment. In the Committee to Improve the Climate for Business established in the framework of the EPA, which has met four times since it was set up, the priority issues on the Japanese agenda are the development of the support industry in Mexico in order to support the automobile and the electronic sectors, the improvement of the environment of security, the expediting of customs procedures and the participation of Japanese companies in the National Infrastructure Program put in place recently. With the exception of the last point, these issues are relevant to the attraction of FDI in general, and they imply improving the levels of competitiveness of the Mexican economy.

6. The impact of the crisis on FDI in the context of the EPA

The global crisis has had a strong negative impact on global trade and investment flows. In its latest Global Investment Trends Monitor, UNCTAD reported that FDI fell in 2009 by 39%, a decline that was widespread among all major groups of economies (UNCTAD 2010).

Within the group of developed countries, Japan has been one of the countries most affected by the crisis. In spite of the fact that it had exhibited an economic recovery between 2002 and 2007 after the *lost decade* in the nineties, in November 2007 it again entered a recession. The GDP in 2008 decreased 1.2% and in 2009 fell 5.2%, eliminating the gains of the last five years. In the 5-year period ending in 2007, the growth of the Japanese economy was driven by a greater dynamism of exports, which went from 11% to 17% of the GDP. This outcome was in part based on a devaluated yen and a spate of US consumption. The

Japanese companies increased their investments assuming that such conditions would remain (The Economist April 2, 2009; Dewitt & Harris 2009). According to UNCTAD (2010), in 2008 Japan was among a small group of developed countries that increase FDI outward flows by as much as 74% to $128 billion. This growth was triggered by the TNs' strong increase in cross-border equity investments oriented to domestic as well as foreign markets.

Table 6. Economic Growth for selected countries, 2007-2010 and forecast for 2011. Annual percentage change

	Japan	United States	Mexico	World
2007	2.3	1.9	3.3	5.1
2008	-1.2	0.4	1.5	3.1
2009	-5.2	-2.5	-6.6	-0.8
2010	2.8	2.7	4.9	3.9
2011*	1.5	2.3	3.9	4.3

Source: International Monetary Fund, World Economic Outlook Database.

*IMF forecast.

As the recession deepened, however, the reevaluation of the yen and the decrease in US consumption has had a strong negative impact on the Japanese economy, especially in the manufacturing sector and in employment. The Japanese government responded with a broad program for the stimulation of the economy, centered on driving domestic demand, improving efficiency in energy and improving the services to the elderly[6]. Considering that exports will hardly be a growth factor in the short run and that the increase in public expenditure is limited by Japan's large public debt, all hopes are set on stimulating domestic consumption. Therefore, in 2009, TNs were affected by tighter credit conditions and rapidly declining sales and profits, both domestic and foreign, affecting their investment expenditures plans.

In the case of the Mexican economy, the GDP in 2008 grew only 1.5% (one half of the previous year) and for 2009 the economy suffered a deep downturn with a GDP drop of 6.6% (Table 6). The recession had a strong impact on the exporting sector due to its high dependence on the US market, whose GDP contracted 2.5% in that same year. This crisis caught Mexico with solid macroeconomic indicators (low inflation and fiscal deficit, high international reserves and a controllable trade deficit), but with an economy that has been losing international competitiveness. On top of that, the Mexican economy was badly affected in 2009 by the impact of the H1N1 influenza. This seriously affected tourism, an important source of foreign currency for Mexico, and also the services sector, especially the activities of restaurants and transportation.

Under this somber outlook, in 2009 trade and investment flows diminished in an important way (Graph 1). Regarding Japanese inward FDI, the director of JETRO in Mexico, Tadashi Minemura, announced that: "the interest of Japanese companies to invest in Mexico is paralyzed", especially because one of the sectors most affected by the crisis in the world

6. Kyodo News, "Aso unveils growth plan to double Asia economy by 2020", 9 April 2009.

is the automobile and automobile parts industries[7]. In fact, the announcement of new investment plans by Japanese companies in Mexico fell to an average of $80 million in 2008 and 2009 from an annual average of $1,142 million in the three previous years (Table 5).

According to data gathered by the author, ten Japanese TNs operating in Mexico announced in the first three quarters of 2009 measures that contemplated a downward shift in their investment expenditures as part of their global strategy. Three of them considered postponement of their investment plans, three decided to close some of their plants in Mexico, three more chose to temporary shut down production, and one sold its TV assembling plant to a Taiwanese company.

However, a less discouraging panorama emerged in 2010. Announcements of new investment plans by Japanese enterprises have shown up again. So far the US rescue plans, especially subsidies to automobile consumption, have had a positive impact on Mexican exports, increasing their volume 52%; Japanese exports of cars from Mexico increased by 44% (Table 4). Of course, continued investment flows will depend on the recovery of the Mexican export sector, which in turn depends on the US economy. This tendency will be reinforced by the impact that the US crisis has on the Japanese FDI in that country, due to the close connection between the Japanese subsidiaries established in the US and the Japanese FDI in Mexico. Moreover, the expected impact of the US rescue plans on the development of automobile products with greater energy efficiency can benefit the Japanese automakers that already have an advantage in these types of products. This could be an opportunity for Mexico, since it already has a competitive automobile sector.

7. Epilogue

The recent events in Japan, triggered by the earthquake and tsunami of March 2011, have pointed out the global relevance of Japanese firms as suppliers of parts and components for global production networks, given the fragmentation of production in different localities. Almost every global enterprise has been impacted by this situation, and in the short run they have responded by adjusting their targets of production. This has been the case with many firms operating in Mexico, especially in the electronic and the automobile industries. In the long run, Mexico can benefit from this situation as Japanese input suppliers located in the Tohoku region, which was the most affected, seek to recuperate their production levels by displacing their plants to other geographic locations. Since Mexico already has a consolidated group of Japanese manufacturers established in the country, they can stimulate some of their partners to move to Mexico.

7. El Universal, "Se 'paralizan' nuevas inversiones de Japón", 12 April 2009.

8. Conclusions

Due to the loss of global competitiveness of the Mexican and Japanese economies at the beginning of the 21st Century, the improvement of the economic relations between the two nations by means of an Economic Partnership Agreement became the most viable option.

The economic relations of both countries with the US have been a key factor for the signing of the EPA. Various factors contributed to the flow of Japanese investment to the US: Japan's well-established platform of subsidiaries that had arrived in the US to avoid trade barriers, the reevaluation of the yen in 1985 and the consolidation of the Japanese investment liberalization control regime in 1998. In turn, the Mexican economy with the NAFTA had integrated closely with the US economy. The US subsidiaries began to transfer their plants to Mexico and thus contributed to the formation of production clusters, especially in the automobile and electronic sectors. This factor and the differentials in costs between the US and Mexico became an incentive for the Japanese subsidiaries in the US to also transfer part of their production plants to Mexico.

In 2001, the impact of NAFTA, particularly the elimination of the fiscal preferences enjoyed by maquiladora plants to import inputs outside the region, was the trigger for Japan to sign the EPA. It coincided with Mexico's need to diversify markets in a region that heretofore had been ignored by the Mexican trade policy. Japan was the natural option due to the relation that already existed between the two countries and due to the regional and global importance of the Japanese economy.

Five years after the agreement was signed, the investment and trade flows have increased more speedily than during the previous period, which shows the advantages of integration. However, in terms of trade, the distribution of the profits has been asymmetric and it has tended to favor Japan more. This is partially the consequence of the strong intra-firm and/or inter-firm relation that supports the Japanese maquiladora plants established in Mexico, which acquire most of their inputs from Japanese or Asian firms. The situation has its origins in turn in the weak relation between the Mexican Small and Medium Enterprises with its exporting counterparts, due to the lack of a long-term vision that would support such a relation. Nevertheless, the EPA is helping in that direction by means of the cooperation chapter. On the other hand, Mexican exports, although they have shown a greater dynamism under the EPA, are still far from taking advantage of the maximum potential of the agreement.

Regarding the attraction of investment, the EPA has had the expected impact in that many Japanese firms have already announced new investment projects in Mexico. How the current global economic crisis will affect these tendencies is an open question. In the short term, the renewal of Japanese FDI into Mexico will depend mainly on the recovery of the US economy, because of the close integration between the Japanese exporting sector in Mexico and the demand from the US. In the long term, two factors seem important: the increase in competitiveness in the Mexican economy that will make the country more attractive to investors (physical infrastructure, quality of education, deregulation, fiscal regime) and the recent changes in global FDI that will pose greater challenges to Mexico in competing with other emerging economies to attract investment.

Finally, the experience of this transpacific relation underscores the importance, in terms of public policy, of the role of the State to be a facilitator of trade and investment flows. In order to potentiate all the benefits from trade and FDI, it is not enough to sign as many free trade agreements as possible, as Mexico has done. In the case of Japanese FDI in Mexico, public policy could be used to facilitate the development of local suppliers to exporters on leading manufacturing sectors where Japanese investment is concentrated.

Bibliography

Almaraz, A. (2007), "La relevancia económica y el perfil de las maquiladoras electrónicas y de autopartes en tres ciudades del norte de Mexico (1990-2003)" in Carrillo, Jorge and Barajas, María del Rosio. (Coords). Maquiladoras fronterizas. Evolución y heterogeneidad en los sectores electrónico y automotriz, El Colegio de la Frontera Norte and Miguel Angel Porrua, México.

Barba Navaretti, G.; Venables, A. J.; (2004) "Multinationals Firms in the World Economy", Princeton University Press, New Jersey.

Bailey, David. Autumn (2003), "Explaining Japan's Kudoka [hollowing out]: A Case of Government and Strategic Failure", Asia Pacific Business Review, Vol. 10, Num. 1.

Carrillo, J.; Barajas, M.; (Eds), (2007), "Maquiladoras fronterizas. Evolución y heterogeneidad en los sectores electrónico y automotriz", El Colegio de la Frontera Norte y Miguel Angel Porrua, México.

_____; Gomis, R.; (2007), "¿La maquila evoluciona? ¿Podrá evolucionar en el contexto?". In Carrillo, Jorge y Barajas, María del Rosio. (Coords), Maquiladoras fronterizas. Evolución y heterogeneidad en los sectores electrónico y automotriz, El Colegio de la Frontera Norte and Miguel Angel Porrua, México.

_____; Hualde, A.; (2007), "Presente y futuro de la manufactura de televisores en la frontera norte de Mexico: de la tecnología análoga a la digital", in Carrillo, Jorge and Barajas, María del Rosio. (Eds)., "Maquiladoras fronterizas. Evolución y heterogeneidad en los sectores electrónico y automotriz", El Colegio de la Frontera Norte and Miguel Angel Porrua, México.

DeWitt, A.; Harris, T. (2009), "Japan's Twenty Year Response to Economic Crisis"; Japan Focus; http://japanfocus.org

Dussel Peters, E. (Ed), (2007), "La Inversión Extranjera Directa en Mexico: Desempeño y Potencial. Una perspectiva macro, meso, micro y territorial", Siglo XXI Editores, UNAM, Secretaría de Economía, México.

Falck Reyes, M. E. (2011a), "El papel de Japón en la integración económica de Asia del Pacífico" in Juan José Ramírez Bonilla, Daniel Toledo Beltrán and Carlos Uscanga Prieto eds., "Japón ante la nueva configuración de Asia del Pacífico. Proactividad y reactividad ante un orden internacional fluido, El Colegio de México, México.

_____; Leon-Manriquez, J. L.; (2010b), «Mexico's East Asia strategy» in Jörn Dosch and Olaf Jacob eds., "Asia and Latin America. Political, Economic and Multilateral Relations; Routledge Contemporary Asia Series; Great Britain.

_____, (2009b). El Acuerdo de Asociación Económica México-Japón. Evolución del Comercio y la Inversión 1993-2008, in Falck Reyes, M.; Uscanga, C.; "Las Relaciones Comerciales y Financieras entre México y Japón en el marco del Acuerdo de Asociación Económica", Universidad Nacional Autónoma de México, México.

Gilpin, R.; (2001); "Global Political Economy. Understanding the International Economic Order"; Princeton University Press; New Jersey.

Helpman, E.; (2006); "Trade, FDI, and the Organization of Firms"; National Bureau of Economic Research, NBER Working Paper Series 12091, Cambridge, Ma.

Ibarra, D.; (2005); "Ensayos sobre Economía Mexicana"; Fondo de Cultura Económica; México.

Jones, R.; Kierzkowski, H.; and Chen, L.; (2005); "What does evidence tell us about fragmentation and outsourcing?" International Review of Economics and Finance, Vol. 14, Num. 3.

Kimura, F.; Ando, M.; (2005), "Two-dimensional fragmentation in East Asia: Conceptual framework and empirics"; International Review of Economics and Finance, Vol. 14 (2005), Elsevier.

Koido, A.; (2003); "La industria de televisores a color en la frontera de México con Estados Unidos: potencial y límites del desarrollo local", en Comercio Exterior, Vol. 53, Núm. 4. Mexico.

OECD; (2007); "Estudios Económicos de la OCDE"; OCDE-edebé; México.

Okina, K.; Shirakawa, M.; Shiratsuka, S.; (2001); "The Asset Price Bubble and Monetary Policy: Japan's Experience in the Late 1980's and the Lessons"; Monetary and Economic Studies (Special Edition)/; Japan .

Saxonhouse, G. R.; Stern, R. M., eds. (2004); "Japan's Lost Decade. Origins, Consequences and Prospects for Recovery"; Blackwell Publishing; Hong Kong.

Solís, M.; (2005); "From iron doors to paper screens. The Japanese State and Multinational Investment" in Saadia M. Pekkanen and Kellee S. Tsai, eds. "Japan and China in the World Political Economy"; Routledge; Great Britain.

Urata, S.; Sasuya, J.; (2007); "An analysis of the Restrictions of Foreign Direct Investment in Free Trade Agreements", RIETI Discussion Paper Series 07-E-018, Japan.

Yamazaki Endo, B.; (2008); "Mexico y Japón : Crónica de 400 años de relaciones amistosas y económicas y 50 años de vínculos empresariales"; Mexico.

Reports

Ministry of Economy and Trade (METI); (2007); "White Paper on International Economy and Trade"; Tokyo.

UNCTAD, World Investment Reports: 2006, 2008 and 2009.

Other sources

El Universal, "Se 'paralizan' nuevas inversiones de Japón ", 12 de abril de 2009.

International Monetary Fund (IMF), World Economic Outlook.

Japanese Maquiladora Association; "Activity Presentation 2004". http://www.economia.gob.mx/pics/p/p1776/Sakae.pdf

JETRO-Mexico; (2006a); "Relaciones Económicas Mexico-Japón"; Mexico City.

_____; (2004b); "Relaciones Económicas Mexico -Japón "; Mexico City.

_____; (2004c); Inversión japonesa en México. http://www.jetro.go.jp/mexico/economicas/inversion/

Kyodo News, "Aso unveils growth plan to double Asia economy by 2020", April 9th, 2009.

Ministry of Economy; Mexico-Japan EPA News, Office of Mexico-Japan Economic Partnership Agreement, Embassy of Mexico. Several issues.

The Economist; (2009) "Japan. The incredible shrinking economy", April 2, 2009; http://www.economist.com

UNCTAD, Global Investment Trends Monitor No. 2, Global and Regional FDI Trends in 2009. 19th January 2010.

United Nations Commodity Trade Statistics Database. COMTRADE: http://comtrade.un.org/db/

GCG
GEORGETOWN UNIVERSITY universia

Entrepreneurial Clusters in China and Mexico –implications for Competitiveness

AREA: 2
TYPE: Case

Clusters empresariales en China y Méjico: Implicaciones para la Competitividad
Clusters empresariais na China e no México –implicações na Competitividade

AUTHORS

Clemente Hernández-Rodríguez[1]
Tecnológico de Monterrey, Campus Guadalajara
Clemente.hernandez@itesm.mx

Raúl Francisco Montalvo-Corzo
Tecnológico de Monterrey, Campus Guadalajara
rmontalvo@itesm.mx

1. Corresponding Author: Tecnológico de Monterrey, Campus Guadalajara; Av. General Ramon Corona 2514; Zapopan; Jalisco 45201; Mexico.

This research examines the common elements that we can find in the outcomes at a national level resulting from clusters. There are 7 common elements of cluster impact, namely: (1) agglomeration economies; (2) knowledge spillovers; (3) increases in productivity and efficiency; (4) positive impact in the operation; (5) economic impact; (6) sociopolitical impact; and, last but not least, (7) impacts on competitiveness. This paper uses radars to compare the cases of the People's Republic of China (PRC) and Mexico. From theses radars we can infer insights for decision makers. For instance, we recommend a cluster policy for Mexico.

Esta investigación examina los elementos comunes que podemos encontrar en los resultados a nivel nacional derivados de los clusters. Existen 7 elementos comunes de impacto del clúster, en concreto: (1) economías de aglomeración; (2) fugas de conocimiento; (3) aumentos de productividad y eficiencia; (4) impacto positivo en la operación; (5) impacto económico; (6) impacto sociopolítico; y, por último, pero no menos importante, (7) los impactos sobre la competitividad. Este documento utiliza radares para comparar los casos de la República Popular China (RPC) y Méjico. A partir de estos radares, podemos inferir nuevas perspectivas para las autoridades responsables de la toma de decisiones; por ejemplo, recomendamos una política de clusters para Méjico.

Esta investigação estuda os elementos comuns que podemos encontrar nos resultados a nível nacional resultantes de clusters. Existem 7 elementos comuns no impacto dos clusters, nomeadamente: (1) economias de aglomeração; (2) transferências de conhecimento; (3) aumento da produtividade e eficiência; (4) impacto positivo nas operações; (5) impacto económico; (6) impacto sociopolítico; e, por último, mas não menos importante, (7) impactos na competitividade. Este estudo utiliza radares para comparar os casos da República Popular da China (RPC) e do México. A partir destes radares, podemos inferir conclusões para os responsáveis pela tomada de decisões. Por exemplo, recomendamos uma política de clusters para o México.

DOI	Received	Accepted
10.3232/GCG.2012.V6.N1.04	03.05.2011	01.03.2012

1. Introduction

Clusters and industrial specialization have been of interest to researchers since the 19th century. In the last decades we have witnessed business and industrial clusters utilized as a tool to enhance competitiveness at the regional and national level. In this paper we seek to identify the different paths of the creation and outcome of clusters in the People's Republic of China (PRC) and Mexico. The driving questions are what the positive effects of a cluster policy are, and what implications they have for policy makers and business people.

We consider clusters a tool that potentiates and provides fuel to a nation's economic growth by linking the agents responsible for productivity and wealth creation. Thus, in order to disclose the effects that the clusters have had in the emerging economies of both the PRC and Mexico, in this research, we took the following steps. The first step was to define business and industrial clusters (presented in the next section). Once that information was compiled, the common elements of the definitions were grouped into categories. Specifically, six dimensions and parameters were set for the advantages of an industrial cluster: (1) agglomeration economies; (2) knowledge spillovers; (3) increases in productivity and efficiency; (4) positive impact in the operation; (5) economic impact; and (6) sociopolitical impact. Those six elements plus (7) impact on competitiveness were embodied in the dimensions of radars created to compare the cases of the PRC and Mexico.

This study is useful for decision makers. First, for the policy makers, it allows a full identification of the advantages of having an explicit cluster policy. Public entities may affect the system by setting up an environment for productive business performance through the creation and enforcement of rules governing the operations of enterprises in the local economy. Second, for business people, it will guide them to determine the important variables in the instauration of a business aggregation that will be helpful in creating wealth. For instance, it is important to have clusters (agglomerations of firms) in a region and make organizing efforts a priority, so that these efforts can be translated into economic development, since clustering offers such benefits.

This paper is divided into five sections. In the first section we have a literature review regarding industrial and business clusters. In this section we analyze the definition of clusters, and highlight the common elements, disadvantages, and advantages found in the literature related to clusters. The second section presents a profile of the industrial clusters in both the Chinese and Mexican cases and compares the policies used to implement clusters in the two countries. The third section shows the methodology used to construct radars that allow us to compare the impacts of the clusters. The fourth section makes a comparison between China and Mexico in the seven cluster advantages dimensions. The last section presents some concluding remarks.

Key words
Business Clusters, China, Mexico, Cluster Policy

Palabras clave
Clusters empresariales, China, Méjico, Política de clusters

Palavras-chave
Clusters Empresariais, China, México, Política de Clusters

JEL Codes
M13; F23

2. Business and Industrial Clusters: Literature Review

From the Ricardian concept of comparative advantage and national and regional specialization, theory demonstrates that certain geographic locations specialize in particular sectors, thus gaining competitiveness (Porter, 1990). Marshall contributed to greater firm productivity by tying the phenomenon of agglomeration of specialized economic activity with Krugman's New Economic Geography (Krugman, 1998) Indeed, the cluster approaches are based on the idea of externalities (illustrated by Marshall's work on the 'Industrial district'; Marshall (1920)), on the competitiveness issue (illustrated by Porter's theory of cluster growth; Porter, 2000a), and on a territorial perspective (illustrated by the GREMI approach; Porter, 2000b).

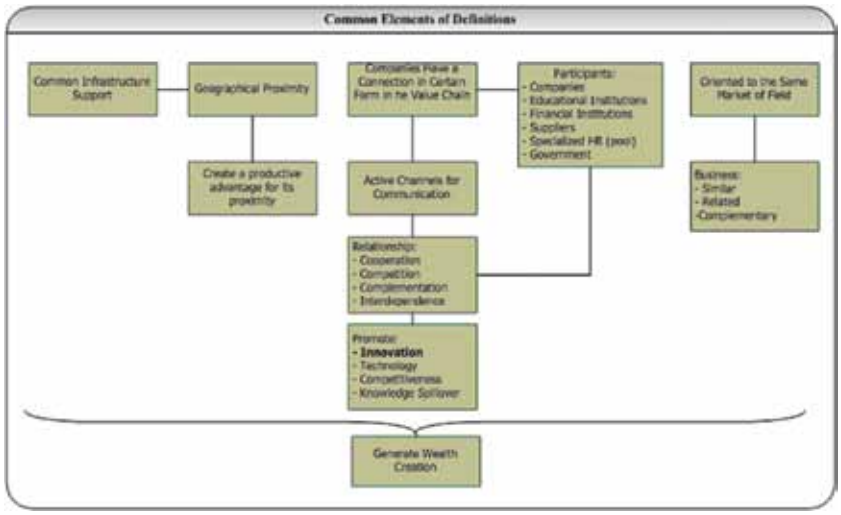
2.1. Definitions of Business Clusters

Clustering has been happening spontaneously throughout time. However, there is not yet a common universal understanding of what a cluster is, nor a common theoretical framework to explain the phenomenon. The diversity of academic approaches to clusters results in different definitions and terms being used by academics and policy makers (associations, business networks, industrial districts, milieu, etc.

All the concepts, from a microeconomic perspective, regarding business and industrial clusters, identified in this paper as entrepreneurial clusters, have elements in common. For some, clusters are a question of localization, proximity, or specialization [Chakravorty, Koo and Lall (2003), Cortright (2006), ITDWB (2009), Kerala Government (2004), Ketels, Lindqvist and Sölvell (2006), Lundvall (2003), Malberg and Power (2006), Maskell and Kebir (2006), Rosenfeld (1996, 2002), and Sonobe and Otsuka (2006)]. For others they are the result of strategies (from institutions) on producers, mainly to promote exports [Cooke and Huggins (2003), ECPG (2010), Ellison and Glaeser (1994), Isbasoiu (2007), Ketels (2003), Porter (1998), Rosenfeld (1997), and SBEDP (2001)].

Clustering occurs at a larger scale (full global value-chain) and can change and take a variety of forms [OECD (1999), and UNIDO (2001)]. Figure 1 summarizes the common elements in the previous definitions of clusters.

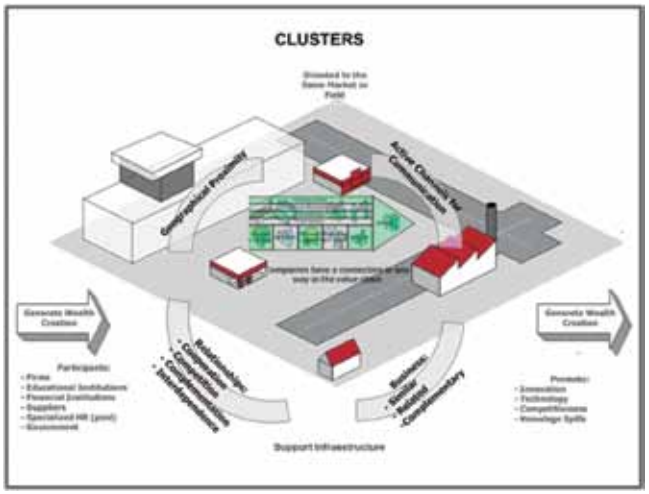
Figure 1: Common elements in the definitions of business clusters



Source: Own creation.

Nevertheless, before any analysis of clusters we need to have a general definition of a business cluster. In general, a business cluster, also known as an industrial cluster is a group representing the geographic concentration of interconnected businesses in an industry that shares inputs related to production, a specialized workforce, distribution and communication channels, and partnership networks. These can be characterized as production networks of strongly interdependent firms (including specialized suppliers), agencies of knowledge production (universities, research institutes, engineering firms), intermediary institutions (brokers, consultants), and also distribution channels and consumers, linked to one another in an added value chain in the production process (see these interrelations in Figure 2).

Figure 1: Common elements in the definitions of business clusters



Source: Own creation.

2.2. Classification of clusters

There exist different types of clusters, depending on each author's definitions. For example, according to the Kerala government (Kerala Government, 2004) clusters can be classified depending on their value chain or workforce. We understand the value chain to imply the common clusters of businesses that buy and sell among themselves. On the other hand, the workforce is based on occupational categories, and the biggest pool of potential employers is the similar occupations.

Another author (Ketels, 2003) classifies clusters according to the type of products or/and services they offer, their geographical location, their specialization in a particular stage of the value chain, and their stage of development. Under geographic location, the different locations play different roles; for example, the New York Financial cluster, the Hollywood media cluster, the Silicon Valley of Information Technology cluster, and the automobiles clusters in Detroit and southern Germany. Under specialization in a particular stage of their value chain, we have the following examples: the short production in Portugal, China's manufacturing, and the design of shoes in Italy. We understand stage of development to include the environment quality of external business and the progress of cooperation in the environment.
A cluster's dimensions can be defined by its industrial connections, geographic extension, life cycle, and the linkages among its participants (Cortright, 2006). The industrial connections refer to buyer-supplier relationships and the value chain. A denser nearby network of suppliers and buyers is an advantage. The geographic extent makes reference to metropolitan, regional, and smaller clusters (some blocks).

1. By the development phase or evolution

When categorized by development phase, a cluster can be a potential cluster, latent cluster, or working cluster (Isbasoiu, 2007). For a potential cluster, there are some good opportunities and some key elements are ready in place. A latent cluster is in an area with a high number of firms but a low level of interaction due to a lack of trust, low cooperation, and high transaction costs. In a working cluster, the industrial district is well developed. When categorized by development stage, a cluster can be a survival cluster, advanced mass production cluster, or cluster of transnational corporations (Altenburg and Meyer-Stamer, 1999; Schmitz and Nadvi, 1999). The competitive potential of survival clusters is limited. They exist due to unfavorable macroeconomic conditions than caused by entrepreneurial competition and dynamism. Clusters of transnational corporations are made up of technically advanced foreign firms that locate in particular areas to draw on regional agglomeration economies, but have limited links to local firms and institutions. In an advanced mass production cluster, the firms produce for local markets but increasingly face global competitive pressures.

Additionally, when categorized by development phase a cluster can be an incipient or mature cluster (Schmitz and Nadvi, 1999). An incipient cluster is in the early stage of industrial development, and is usually located in a poor area, producing for local markets with simple technology and labor skills. A mature cluster consists of more advanced firms in terms of technology and skills; they produce for the global markets and are vulnerable to global pressures (Isbasoiu, 2007). According to the cluster life cycle, clusters can be emerging, established, mature, declining, or imaginary. The emerging clusters usually consist of many new firms, with rapid growth and frequent changes in firms and products. The established clusters

involve a few larger firms, with slower growth and fewer changes. In a declining cluster, the rate of employment is stagnant, and there are many closures and few changes. The imaginary cluster life cycle occurs when businesses try to create an industry cluster. Participants may or may not know that they are part of the cluster.

2. By Inter-firm Relationships and industrial organization

In terms of the relationship between firms and industrial organizations, clusters can be Marshallian, Italianates, hub and spoke, satellite platforms, or State-anchored clusters (Markusen, 1996). Marshallian industrial districts are groups of roughly equal firms that compete with one another and engage in small transactions but do not intentionally cooperate. Italianate industrial districts consist of firms that are roughly equal but both compete and cooperate. The hub and spoke (distribution and connection centers) districts are dominated by a single large firm that creates a substantial market for local suppliers and generally sets the conditions for their relations. Satellite platform districts are collections of branch facilities that are usually larger, autarkic, tapping low-cost labor, or getting closer to markets. State-anchored districts are those that owe their existence to government spending, such as military activities or government research laboratories (Cortright, 2006).

Gordon and McCann (2000) identify three different cluster types (or cluster processes): pure agglomeration, industrial complex, and social network. In the pure agglomeration model there is a spatial concentration of firms but an absence of formal structures or strong long-term relations between them. In the industrial complex model there are sets of identifiable and stable relations among firms that are in part manifested in their spatial behavior. In the social network model there exist trust-based behavior and transitive private relationships.

3. By analysis level or geographical extension

By level of analysis, clusters can be national level, industrials, or company level (Roetlandt, 1999). National level (or macro level) refers to a network of industrial groups as a whole. At the industrial level (or meso level), the networks inter or intra industrials are founded in different phases of the production chain with similar final products. At the firm level (or micro level), the specialized suppliers are around the central business and there is union among firms.

4. By stages of development or conformation

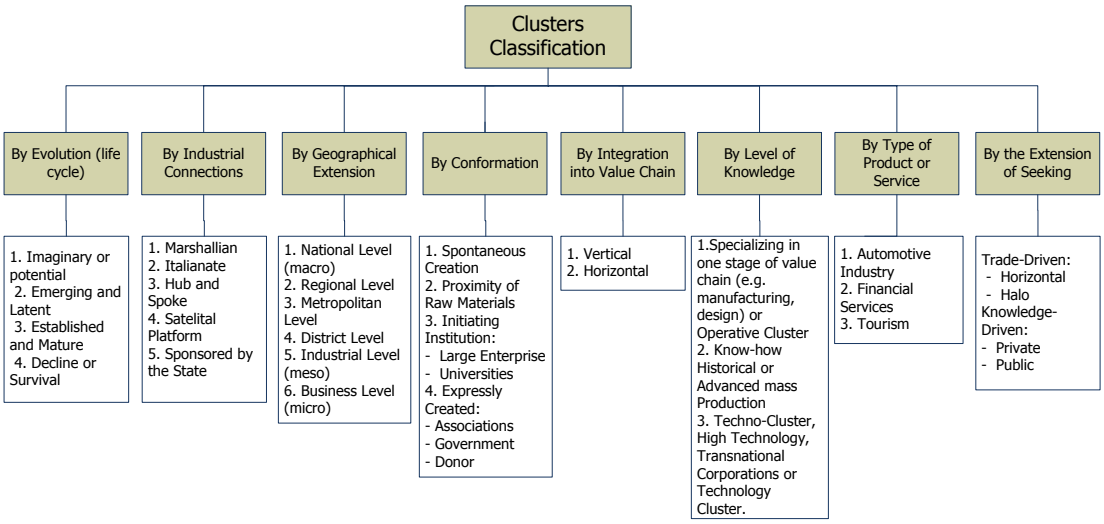
Depending on the stage of development, clusters can be classified as spontaneous creations or strategic creations (Ketels, 2003). A spontaneous creation can take many years to consolidate, because the principal raw material is close. It refers to institutes as companies and universities that attract investment. On the other hand, a strategic creation of cluster has a quick development of the tripartite union: business, government, and financial donors.

5. By integration into the value chain

According to their integration, clusters can be vertical or horizontal (Isbasoiu, 2007). Vertical integration refers to industries united by the buyer-seller relationship. Horizontal integration happens when there are industries that share common markets, technology, labor force skills, and sources.

Depending on the value chain, clusters can be classified as technology clusters (development of technology) or operational clusters (production manager) (Amano, 2006).

Figure 3: Classification of Clusters



Source: Own creation.

6. By level of knowledge

Based on knowledge, a cluster can be a techno-cluster or a historic know-how-based cluster (Isbasoiu, 2007). The techno-cluster is oriented toward high technology and is well adapted to the knowledge economy. The historic know-how clusters are based on traditional activities that maintain their advantage in the know-how (operation's experience) over the years.

7. By type of product or service

By type of product or service that they provide, we can find as examples the automotive, financial services, tourism, and many other industries.

8. By the extension of seeking

Following Johnston (2003), clusters can be classified by their development phases as trade-driven clusters or knowledge-driven clusters. In a trade-driven cluster, the business opportunities of clusters can be horizontal or halo. Horizontal business opportunities are in the same end-product market, and cooperate in the pre competitive activities such as R&D, collective marketing, and purchasing. Halo opportunities involve a powerful and demanding purchaser who attracts many suppliers. In a knowledge-driven cluster, the chance to learn comes from public and private sources. Private sources are interested in knowledge that many firms have. Public sources are interested in organization knowledge about the public sector. That classification was expanded because in both trade-driven clusters and knowledge-driven clusters, the cluster can be (a) local/regional, (b) international, or (c) virtual.

Figure 3 summarizes the classification of clusters by evolution, industrial connections, geographical extension, conformation, integration into value chain, level of knowledge, type of product or service, and the extension of seeking.

2.3. Beneficial impacts of clusters

Three distinctive groups of impacts are identified, focusing respectively on local spillovers, the region and its development, and competitiveness. As economies evolve and gain in complexity, there is wide recognition of the advantages derived from locating firms near similar sectors that include supply sources, as they tend to cooperate and increase productivity. Thus, clusters stimulate and allow innovation, productivity, and efficiency; they also have a beneficial impact, facilitate trade, and naturally generate an economic agglomeration. Clusters have an economic impact and are an economic policy tool, among other advantages.

1. Agglomeration economies

The effects of agglomeration economies caused by clusters include the following: concentration and labor specialized markets; specialization and work division to get scale economies; possibilities of outsourcing; specialization of suppliers; facility to transfer technology, share information, and knowledge; and cheaper transaction costs (OECD, 2001).

We can distinguish these agglomeration economies for the operation and technology clusters (Amano, 2006). The advantages of agglomeration economies for the operation clusters include low transportation costs, shorter transportation time between the respective stages of the value chain, economies of scale in the production, quick production launch, prompt imitation of innovation, monitoring of the quality of suppliers, and low inventory costs. The advantages of agglomeration economies for the technology clusters include an early recognition of new technology and market opportunities, the creation of new technology through many start-ups and technology spillovers, the creation of new products, access to venture capital, and the specialized pool of human resources.

2. Knowledge spillovers

Related to the first aspect – stimulating and allowing to innovate – the existence of a cluster generates an increase in the perceived opportunities for innovation, in that there is creation of knowledge between the suppliers and institutions, facility of experimentation, and knowledge spillovers (Ketels, 2003). Indeed, there is a general shift in explanatory emphasis from considerations of static cost efficiency towards more dynamic interpretations that highlight the creation and use of knowledge as their pivotal theoretical element.

3. Productivity and efficiency

Clusters generate higher level of productivity and efficiency, more specialized assets, efficient access to resources, facility to coordination, fast diffusion of better practices, and comparisons of visible and fast performance that companies can use to improve (Ketels, 2003). The existence of clusters to improve the national advantage of certain sectors and SME competitiveness in an industry also causes a region to become more attractive, with more development and better economic performance, and intensifies the industry-research collaboration (Johnston 2003).

4. Positive impact in operational performance

In terms of operational impact, the existence of clusters generates more emphasis on increasing added value, contributing to an increase in exports, greater support for innovation, development of the supply chain, an increase in jobs, improvement in the business environ-

ment, attraction of new business and investments, reduction in production costs, facilitation of the search of funds, and commercialization of academic research (Ketels, Lindqvist and Sölvell, 2006).

5. Economic impacts

The economic benefits that may accrue to firms when clustering or co-locating are known as the existence argument of clusters. In terms of economic impact, some benefits of clusters are increased cooperation, increased economic importance of the region, a wider range of market economy, an improvement in innovative capacity, an increase in the number of local firms, an increase in the use of local suppliers and sales, more levels in the value chain, and increased competitiveness (Ketels, Lindqvist and Sölvell, 2006).

Clusters as economic policy tools are a part of a new approach to economic development policies. There is a resources alignment, relating technology, skills, information, marketing, and market necessities. Thanks to clusters, new roles are assigned to the private sector, government, and associations, uniting enterprises of all sizes, creating a dialogue forum, identifying common opportunities, and generating a guide to socioeconomic order policies (Ketels, 2003).

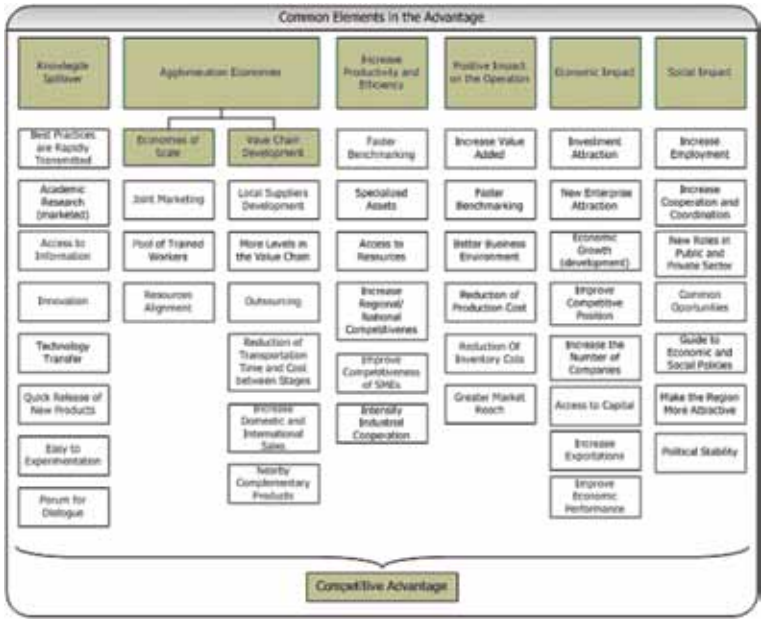
6. Other benefits to society

Social benefits also are part of the existence argument of clusters. Other advantages generated by the clusters include: the publicity impact; a high demand for raw material (which attract suppliers); the easy access to different markets, technology, and business partners; the opportunity to receive subcontracting; marketing, purchases, entertainment, and joint testing; closer complementary products; localized economies that reduce costs; and access to a generous potential of employers and a larger pool of labor (Kerala Government, 2004).

7. Summary of the positive impacts

Figure 4 summarizes the seven impacts of the clusters: (1) Knowledge spillovers, (2) Agglomeration economies, (3) Increases in productivity and efficiency, (4) Positive impact in the operation, (5) Economic impact, (6) Sociopolitical Impact, and (7) Competitiveness.

Figure 4: Common elements in the beneficial impacts (advantages) derived from clusters



Source: Own creation.

2.4. Negative impacts of clusters

Maskell and Kebir (2006) argue that the profundity of the notion of 'clusters' is conditional on the coherence of two fundamental issues associated with the concept: the extension argument and the exhaustion argument. The extension argument is related to the diseconomies encountered when clustering exceeds certain geographical and sectoral thresholds. The exhaustion argument refers to the possible erosion of economies and onset of diseconomies over the lifecycle of the cluster.

Duranton (2007) identifies two main inefficiencies associated with clusters: the failure of coordination and the uncompensated externalities in production. The first one, coordination failures, happens because clusters tend to be 'too big'. One way to solve this problem is to restrict the size of existing clusters or to create new ones. The second inefficiency is about external effects at the root of the agglomeration/clustering that also make production inefficient in clusters. It is necessary to fix those inefficiencies in production.

According to Meyer-Stamer and Harmes-Liedtke (2005), another disadvantage of clusters is that inputs and labor costs are less competitive over time due to the strong competition. Moreover, there is a dependency in a geographical zone on industries belonging to the cluster. So if the cluster is badly affected by something, then the region also suffers that negative impact.

There is the possibility that newcomers to the cluster will be non-competitive, and that they will not have the benefits obtained by the pioneers such as cost reduction, specialized infrastructure, and institutional support (Barkley, 2001). If there is no previous study or well-designed plan of action, the entrepreneurs can lose interest and withdraw their participation, and thus this action discourages possible actors to get into the cluster project (Morales, 2007). Therefore, clusters may discourage investment in innovation. Incorrect spatial and commercial planning can cause the affiliates of the cluster to lose industrial feasibility and damage its components. The lack of studies and projects can make the planning of an economic cluster less attractive, constraining the quantity of entrepreneurial nuclei that belong to it.

3. Cluster policies in China and Mexico

Industrial policy is interested in economic structure, which is in turn concerned with production models in different sectors, implying that it is related to adjustment measures, both directly and indirectly promoting and slowing at the micro or macro levels[1]. Normally, industrial policy will be linked to income, sectoral policies, and regulations (Katzenstein, 1985; Eaton and Grossman, 1986). Industrial policy usually involves coordinated efforts between the public and private sectors to develop new technologies and industries. For instance, governments provide financial support and capital to private sectors by direct subsidies, fiscal rebates, or credit of state-owned banks.

The aim of industrial policy is to influence (or foster) competitiveness and to reach economic policy objectives such as promoting employment, investment, growth, or balance with the foreign sector (Hernández, 2010). Industrial policy emphasizes cooperation between governments, banks, private firms, and workers to enhance the national economy. It is in this favorable economic environment that cluster policies are connected to industrial policy. The cluster policy is important to support national and regional economic development policies (Asheim, Cooke and Martin, 2008; Sölvell, Lindqvist, and Ketels, 2003).

This research compares the effects of business and industrial clusters in the People's Republic of China (PRC) and Mexico. Before presenting the cluster outcomes, we present the profile of each country regarding business clusters.

The cluster concept has been addressed and used in different ways to explain economic development processes. Clusters have gained popularity and nowadays are considered key drivers of economic development, innovation, and competitiveness. In the following paragraphs, we will discuss information concerning the clusters and their supporting institutions in the cases of China and Mexico.

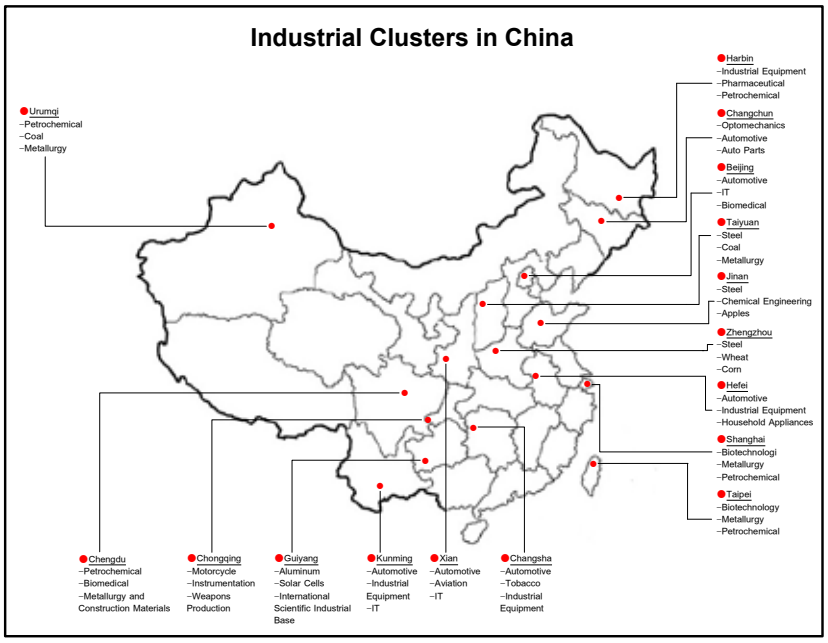
1. Historically, the term "industrial policy" has been associated with some degree of indicative or economic planning, though this is not the connotation in this research. Governmental involvement in business planning is suspiciously watched from the liberal side. Critics of industrial policy claim that governments can do nothing to improve things better than can the market forces related to choosing winners, and that such misguided efforts can worsen the state of things.

3.1. Cluster Policies in the People's Republic of China

Although it is possible to identify agglomerations of firms in the production of ceramic, porcelain, and silk many years ago[2], business clusters in modern China were officially started along with the beginning of economic reform in 1979, through the establishment of a strategic plan for the agglomeration of firms in which the government promoted the concept of "one village, one product" (Bellandi and Di Tomasso, 2005).

Using some parts of the province of Guangdong as evidence (Bellandi and Di Tomasso, 2005), and with government support, the production of several products started in small businesses. They evolved to form the country's current industrial base. Today many of these companies still exist, and some are still state-owned, although the majority belongs to private capital. All subsist and now operate under the aegis of the cluster. Figure 5 shows the most representative cities of China, where the government has identified business clusters along with their activities of specialization.

Figure 5: Industrial Clusters in the People's Republic of China



Source: Own creation.

The emergence of clusters in China has been more intense in cities in the delta regions of the Yangtze and Pearl Rivers, due to their privileged location for receiving goods and their proximity to Hong Kong and Macau, i.e. the potential investors of the time, whose development had begun years in advance (Enright, Scott, and Chang, 2005). The cluster in the

2. In China, industrial agglomerations have a long history. Jingdezhen has a ceramic and porcelain production group with a history more than 1,400 years old, while Shengze city of Wujiang of Suzhou in Jiangsu Province has been one of the most famous silk centers for hundreds of years.

Yangtze delta region covers seven cities of Jiangsu Province, the city of Shanghai, whose Special Management Zone does not belong to a province and reports directly to the central government, and 8 cities of Zhejiang Province (Li and Fung Research Centre, 2006a). The Pearl River Delta is located in Guangdong Province, which has twelve cities with business clusters and is the location of the oldest cluster initiatives from the 1980s (Li and Fung Research Centre, 2006b). Since then, in the north, the areas surrounding the capital city and the capital itself have also developed this type of business cluster (Li and Fung Research Centre, 2006c). Although the west of the country is less developed than the above areas, nowadays it is possible to find clusters in their initial stages that are beginning to participate fully in national production (Li and Fung Research Centre, 2010).

In its "statement to facilitate the development of industrial clusters", issued by the National Commission for Reform and Development (NDRC, 2007), the central government recognized that clusters contribute to industrial development and provide economic development. The statement sets out specific actions, with regard to clusters, that include: strengthening the planning process, creating awareness on the best use of resources, improving business leaders through specialization, encouraging innovation, promoting sustained growth, encouraging the creation of regional brands through patenting, developing service providers, and ensuring the coordinated location of businesses.

Provincial governments have also established specific guidelines that contribute to the development of clusters installed within their borders, and have organized annual fairs for submitting the marketing of their products.

The Guangdong provincial government (People's Government of Guangdong Province, 2007) is a pioneer in these kinds of policies, because it is the location of the first business clusters created under cluster initiatives. With economic growth and the need to expand, other provinces such as Shandong (People's Government of Shandong Province, 2008), Shaanxi (People's Government of Shaanxi Province, 2009), and the city of Chengdu in Sichuan Province (People's Government of Chengdu, 2009) have also established specific policies.

Based on their characteristics, the Li and Fung Research Centre (2006) identified five types of clusters in China: self-growth, export-oriented, high technology, resource-driven, and market-driven.

The first had its flowering in the early 1980s, consisted of small family businesses, and had as its main attribute an intensive use of labor. This type of cluster's products are low-tech and have few barriers to entry. Examples of such clusters can be found in the production of fireworks in the provinces of Jiangxi and Hunan, and the metal processing in the city of Zhongshan.

Export clusters arose through foreign investment in the use of low-cost land and labor, and were mainly in Pearl River Delta cities such as Shenzhen, Zhuhai, Zhongshan, Shunde, Nanhai, and Dongguan. They were dedicated to the industries of electronics and electrical products, textiles and clothing, footwear, plastics, financial services, and logistics.

Beijing, located in the north, has a successful high-tech cluster. Being in an environment of companies and research centers, it has become the nation's largest center of research and

development in information technology, and is found around Beijing and Tsinghua Universities, two of the best in China.

Resource-driven clusters are formed by companies that depend on the availability of natural resources, such as forestry, mining, or quarrying. In this way, China has developed furniture and jewelry companies to continue their process of specialization and increase the quality of their products in general. Clusters of this classification can be found mainly in the provinces of Hunan and Jiangsu.

In the market-driven type of clusters, there can be found wholesale distributors operating in support of other clusters. Clusters can be classified as purely one type or another like those listed above, or as a mixture of the types.

The massive development that China has experienced over the last thirty years lies in these areas that have followed a plan organized by the government, with special attention to policies that promote growth, while making efforts to integrate participants and improve clusters. However, links between the cluster participants are still weak (Liu, 2008).

According to the Ministry of Science and Technology of the PRC (2008) the following important industrial areas (clusters) are distinguished:

Zhuongguancun (ZGC) in Beijing.

- Zhangjiang high-tech park in Shanghai.
- Pearl River Delta.
- Bonai Bay.
- Yangtze River.

So far, the country has had outstanding growth in the global economy, but is still at the absorption stage of technology in both equipment and knowledge to provide support to the competitiveness challenges it now faces.

3.2. Cluster Policies in Mexico

In Mexico, efforts to enhance national productivity are held at the state level. Through the identification of motor activities, some of the entities have been able to visualize and implement cluster initiatives, while others have naturally witnessed the growth of a sector in their territories, and in order to organize their efforts, they have also established initiatives. Several support institutions have joined the efforts of each state or have arisen as a result of planning the cluster initiative (OECD, 2009a, 2009b).

Companies are the main support for productivity, and must operate with a regional vision in conjunction with national efforts. In Mexico, national policies do not sufficiently stimulate competitiveness in all regions, so there is a lack of a coordinated approach to regional development policies and thus an uneven performance across the country. National policies have focused on poverty or infrastructure with greater emphasis, rather than on the development of competitiveness (OECD, 2009b).

The 2007—2012 National Development Plan mentioned the intent to achieve higher levels of competitiveness. Although the motivation for cluster development in the country is not explicitly expressed, there is a Department of Micro- and Small Enterprises (Mipymes) within the Ministry of Economy (SE) that has information related to the creation and development of business in clusters. In addition, the Mexican Institute for Competitiveness (IMCO) develops analyses on this subject and calculates an annual index. Many academic institutions have also established competitiveness departments to run research on clusters and provide business incubation services; some state governments have established support institutions for the same purpose. All these organizations participate in the process of creating clusters in Mexican states.

The following table summarizes a study prepared by TEC de Monterrey (ITESM-FEMSA, 2009) on the identification of motor activities and the possibility of being the source of a cluster in Mexico at the state level. Table 1 classifies the clusters listed as current, emergent, or future. The first column shows the sector of the economy in which the cluster specializes. The second column list the state(s) in which the cluster is currently located, while the third and fourth columns list the state(s) in which the cluster is emergent and will be located in the future, respectively.

Table 1. Clusters in Mexican States classified by status

Clusters*	CURRENT	EMERGENT	FUTURE
Medical, Optical and Measurement Equipment	Baja California	Baja California	Sonora
		Sonora	Nuevo León
			Tamaulipas
			Guanajuato
Electronic, Computer, Communication and Signaling Equipment	Aguascalientes	Baja California	Zacatecas
	Baja California	Puebla	Tabasco
	Jalisco		
Agricultural and greenhouse products	Michoacán	Zacatecas	Nuevo León
	Sinaloa	Michoacán	Durango
			Zacatecas
			Nayarit
			Guanajuato
			Hidalgo
			Colima
			Puebla
			Morelos
			Chiapas

Clusters*	CURRENT	EMERGENT	FUTURE
Textiles and Clothing	Hidalgo	Yucatán	
	Tlaxcala		
Spatial Navigation Equipment		Sonora	Baja California
			Sonora
			Chihuahua
			Querétaro
Business' Support Services		Nuevo León	Aguascalientes
		Guanajuato	Distrito Federal
		Edo. de México	Guerrero
		Sinaloa	Quintana Roo
		Baja California Sur	
Medical and Hospital Services		Yucatán	San Luis Potosí
			Veracruz
			Jalisco
			Puebla
			Aguascalientes
Tourism Services	Baja California Sur	Veracruz	Durango
	Guerrero	Michoacán	Hidalgo
	Michoacán	Oaxaca	Puebla
	Morelos	Campeche	Chiapas
	Nayarit	Quintana Roo	Yucatán
	Oaxaca		
	Quintana Roo		
	Sinaloa		
	Sonora		
	Tabasco		
	Veracruz		
Obtaining and processing Non metallic ores and Fuel	Campeche		Campeche
	Chiapas		Chiapas
	Durango		Durango
	Zacatecas		Zacatecas
	San Luis Potosí		San Luis Potosí
	Tabasco		Tabasco
Lumber and Wood Products	Querétaro	Durango	Querétaro
		Querétaro	
		Oaxaca	
Educational Services	Jalisco	Aguascalientes	Jalisco
		Morelos	

*Economic clusters with Greater Impact in Mexico (More dynamic clusters with greater business opportunity in the medium term. They are not a reflection of the traditional activities of each state).

Source: Portal Ciudadano del Gobierno Federal, 2009.

Figure 6 shows a map of the Mexican states and their economic activity related to business clusters.

Figure 6: Entrepreneurial Clusters in Mexico

Source: Portal Ciudadano del Gobierno Federal, 2009.

Half of the clusters are closer to the center of the country. Companies naturally selected proximity to Mexico's capital city. The states of Nuevo León, Coahuila, and Chihuahua have a manufacturing history of many years, and the city of Tijuana in the state of Baja California has developed thanks to the U.S. border and the advantage of abundant labor for companies that were located there in order to export to the northern neighbor.

Clusters have emerged through an initiative in at least eight states (Neri, 2008). These states are Nuevo León, Querétaro, Coahuila, Baja California, Aguascalientes, Jalisco, Chihuahua, and Guanajuato[3].

Nuevo León represents the state with the largest manufacturing share given the evolution of the sector through the years. It holds cluster initiatives in the automotive, appliance, electrical/electronic, metal-mechanical, steel, glass, cement, information technology, and software sectors (Neri, 2008). The state government also considers latent clusters in other sectors, such as non-metallic minerals, food and beverages, and chemical products. Besides paying the corresponding attention to the sectors in the implemented state development plan, the state has clearly identified the clusters and has established government support institutions

3. The order is carried out according to the state ranking in competitiveness in Mexico. ITESM (2010) is a study in which the 31 Mexican states and the District Federal (DF) are classified according to their competitiveness.

to encourage the operations of the value chain of each cluster, as well as to link them with the academic area of the state at all levels, all this while using domestic support. Nuevo León's strength relies on a high availability of capital, high rates of labor productivity, and an efficient government (Neri, 2008; ITESM-FEMSA, 2009).

The state of Querétaro operates an information technology cluster dedicated to software development services and call centers (Neri, 2008). The state government has shown in their strategic plans the intention to improve competitiveness. National supporting institutions are used to motivate the agglomerations in the state. It holds a liaison body between cluster firms and the government. Likewise, it is responsible for planning and linkage with academia and other participants. It has established agreements with different universities to support research, as well. Its place in the competitiveness ranking is mainly because of the efficiency of the government (ITESM-FEMSA, 2009).

Coahuila has an important role in the automotive industry for domestic consumption. The state government uses national support policies. There is no specific institution that organizes the cluster, but the state government links the efforts of different participants. The state is competitive by maintaining a low debt risk, thus being a good container for foreign investment (Neri, 2008; ITESM-FEMSA, 2009).

Baja California holds an information technology cluster called IT@Baja (Neri, 2008), and the state government has carried out an analysis of the state's vocation and also identified the following as candidates to form a cluster: tourism, medical services, medicine, aerospace, electrical and electronics, automotive, electronic software, furniture, logistics, agribusiness, wine, biotechnology, fisheries and aquaculture, energy, and plastics (OECD, 2009a). To support them, it has implemented a "Strengthening and Creating Cluster Program" for planning and technology development. The North Border College (COLEF) supports research and has created a Joint Fund to support the implementation of a technological development system with investments from companies and the state government, as well as cooperation agreements with multinational companies in the sector concerned. The state is competitive through business dynamics presented as the partnership between business and government (OECD, 2009b; ITESM-FEMSA, 2009).

The state of Aguascalientes holds an electronics cluster initiative (Neri, 2008). The state government has identified it and has included it in the state development plan. It has created specific institutions that provide services to the supply chain in terms of consulting and finance. In addition, an exclusive agency to attend to issues between the companies and the government has also been created. It also promotes links with academia and research centers in the state. Currently, the state government encourages the development of other activities that are present in the state and are to be clustered in the near future. Such is the case for the food industry and its technology, trucking logistics, robotics and automation, and an integrated cluster of municipal products whose purpose is to promote the marketing of products made in the state. Its website displays information about these support institutions, which are in their infancy stage. In terms of competitiveness, the state is showing progress in business investment as its main strength over the last decade (ITESM-FEMSA, 2009).

Although Jalisco is a state with significant activity in the trade and service sector, it also has plenty of activity in the manufacturing sector through the operation of business groups

clustered in electronics, traditional sectors (shoes, tequila, jewelry, textile, and clothing design), aerospace, film, automotive, and electronics industries (Hernandez and Von Putlitz, 2009). These are supported by government institutions that provide consulting and loans to micro- and small enterprises. There is also a government body in charge of linking business and academia in terms of technological innovation and a center that supervises and provides support to the electronics supply chain, which is the state's largest cluster (Hernandez and Von Putlitz, 2009; OECD, 2009a; OECD, 2009b). The state is climbing the competitiveness scale from the year 2004 (ITESM-FEMSA, 2009).

The state of Chihuahua holds one of Mexico's first clusters, dating from the 1990s. Its evolution has been gradual, and it currently serves the national economy significantly in the agribusiness sector with a chain of production companies of livestock feed, breeding, milk production, and genetic engineering, and in the automotive and aerospace production of harnesses for aircraft and helicopters, turbines, airframes, and emergency slides. The state has a developed network of institutions supporting the cluster. High trade openness and government efficiency are among its strengths (Neri, 2008, ITESM-FEMSA, 2009).

Guanajuato is home to a significant production of footwear and leather products (ITESM-FEMSA, 2009), and automobiles have also been recently identified as a candidate to enter into a cluster initiative. To that end, the state government has promoted the involvement of academia and the productive sector by identifying demand for professionals as well as training. For this, it works with training centers for labor. In addition, the state government invests through support loans for micro- and small enterprises that integrate the supply chain of these sectors (Unger, 2009). The state has high levels of training among its workers.

Other Mexican states have business agglomerations that have formed over time but have not yet formalized into a cluster initiative. Their state governments establish lines of action that impact them through the use of national support, with no one institution directly in charge of their business operations as a cluster. However, these economic activities can be an important financial support or represent the vocation of the state (ITESM-FEMSA, 2009).

4. Methodology: Radars as means of comparing the impacts of clusters

So far, in order to reach our goal, we have taken the first step of the study, i.e., to set the bases of the research with a summary of various definitions proposed by different authors that help us delimit the meaning of a business cluster. We then analyze the definitions to categorize their common elements.

4.1. Dimensions of the Impacts of Clusters

We found that there are seven dimensions in the clusters' advantages that we were interested in comparing in the PRC and Mexican experience. Therefore, to know the positive effects

of clusters in the local economies, the dimensions of analysis are the following seven:

(1) Agglomeration economies,
(2) Knowledge spillovers,
(3) Increased productivity and efficiency,
(4) Positive impact in the operation,
(5) Economic impact,
(6) Sociopolitical Impact, and
(7) Competitiveness.

The next step is to seek indexes that were considered for the creation of each one of the dimension parameters.

Table 2: Variables (cluster's measurement)

	Variables to Measure	Measurement Unit	References
Business	Business Environment	Ranking on Ease of Doing Business (2009)	World Bank
		Number of Days to Start a Business (days) (2008)	World Bank
		Economic Incentive Regime (2009)	World Bank
	Investment Attraction	Foreign Direct Investment Coming into the Country (2008)	UNCTAD
	Innovation	Number of Patents Created in the Year (2008)	US Patent and Trademark Office
		Innovation Capacity (2009)	World Bank
	Knowledge	Public Expenditure on Education as Percentage of Total Government Spending (2007)	UNDP
		Social Knowledge Indicator KAM (2009)	World Bank
	Level of Entrepreneurship	Global Entrepreneurship Index (GEINDEX) (2009)	Friedrich Schiller University
Economic	Agglomeration Economies	Population Index of Cities with Highest Concentration of People (2010)	UNDP
		Secondary Sector GDP (Dollars) (2010)	CIA - The World Factbook
		Secondary Sector Population (People) (2010)	CIA - The World Factbook
		GDP Per Capita of Secondary Sector (2010)	CIA - The World Factbook
		Electricity Consumption 1,000 Millions kWh	CIA - The World Factbook
		Petroleum Consumption 1,000 Millions Barrels/Year	CIA - The World Factbook
		Natural Gas Consumption 1,000 Millions m3	CIA - The World Factbook
	Productivity	Productivity Levels in 2008 (GDP per Hour worked) (1990=100)	International Labour Organization
	Competitiveness	Global Competitiveness Index (2009)	World Economic Forum
	Solid Macroeconomy	GDP Growth 2008 (%)	International Monetary Fund
	Exports	Exports 2007 (% of GDP)	World Bank Group
		High Technology Exports 2007 (% of GDP)	World Bank Group
Society	Job Growths	Employment Rate (% of employed labor force) (2008)	International Labour Organization
		Human Development Index 2009	UNDP
		Percentage of GDP Dedicated to Education (2009)	Eurostat
		Political Instability Index (2009/10)	Economist Intelligence Unit

Source: Own creation.

Table 2 is related to the environment created in a market economy in the business, economic, and social areas. To measure the impact of the clusters, seven dimensions are considered. The first dimension involves the agglomeration economies measured by seven variables plus the level of entrepreneurship. The second relates to knowledge spillovers and is measured by two variables related to knowledge and two related to innovation. The third factor concerns increases in productivity and efficiency, measured by the index of productivity levels of the International Labor Organization. The fourth factor relates to positive impact in the operation and is measured by three variables of the business environment. The fifth factor involves economic impact, and includes the variables of investment attraction, solid macroeconomy, and exports. The sixth factor involves the sociopolitical Impact, measured by four variables of social and political factors. The seventh and final factor concerns competitiveness, and is measured by the Global Competitiveness Index of the World Economic Forum.

4.2. Measurement of the Dimensions of the Impacts of Clusters

Table 2 shows the variables used (and their sources) in the construction of the indexes that represents the eight dimensions of the beneficial impacts of clusters. Table 2 lists each of the seven dimensions studied with its respective variables.

The sample included 25 selected countries (Australia, Austria, Belgium, Brazil, Canada, Chile, China, Denmark, Germany, Finland, France, India, Ireland, Italy, Japan, Mexico, the Netherlands, Norway, Peru, Russia, South Korea, Spain, Sweden, the UK, and the USA).

Next we compile the information into a database. In some cases we found more than one index or ranking to describe each dimension of the clusters' impact, so we decided to create a composed index for each of the parameters corresponding to the seven dimensions.

Then we normalize the data with 100 as maximum, in order to create averages for each category or dimension. Given that some databases excluded some countries we have chosen, one of the challenges we faced was to find databases with information for each of the countries in our sample. Annex 2 shows the created standardized values (base 100) for the dimensions defined in Table 1. It also shows the original sources.

As soon as all the Indexes were normalized to a 100 base, we did simple averages of the variables included in each analyzed dimension. Annex 3 shows the parameters for the sample countries for each one of the seven dimensions of the cluster impacts.

The next step was to construct radars using the information for each one of the seven defined dimensions. We also included the maximum possible attainable value for each dimension.

5. Comparison of Clusters' impacts in the People's Republic of China and Mexico

Thus, to know the effects of clusters in the local economies, the analysis dimensions are the following seven: (1) Agglomeration economies, (2) Knowledge spillovers, (3) Increased productivity and efficiency, (4) Positive impact in the operation, (5) Economic impact, (6) Sociopolitical Impact, and (7) Competitiveness.

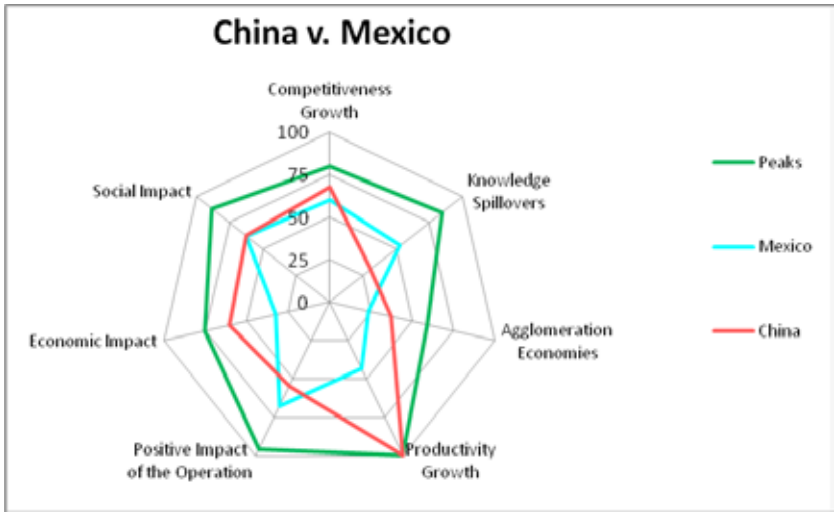
5.1. Radars of the impacts of Clusters

Figure 7 shows (in green) the peaks reached by the sample of countries analyzed. China is represented in red and Mexico's current situation in each dimension in light blue.

On the one hand, China is the top country (in this comparison) for the increase of productivity and efficiency. The PRC also achieves a great economic impact and competitiveness growth. However, China can improve in the agglomeration economies and in the knowledge spillovers. The positive impact in the operation may be improved too.

On the other hand, Mexico has a great need to improve in agglomeration economies, and should seek greater increases in productivity and efficiency and economic impact. Mexico performs well in knowledge spillovers. It is close to the maximum of this sample in social impact and positive impact of the operation.

Figure 7: Comparison of the impacts of the clusters in China and Mexico radars

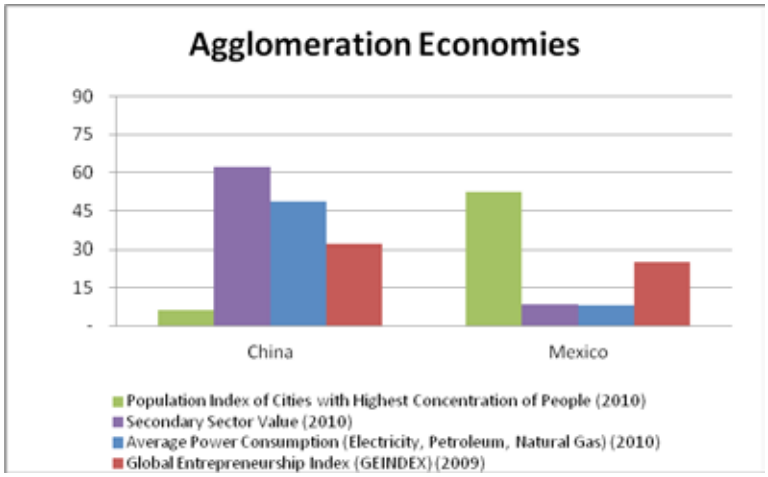


Source: Own creation.

5.2. Comparison of the clusters' impacts in China vs. Mexico

In the seven dimensions we compare, China is better than México in five: agglomeration economies, increased productivity and efficiency, economic impact, sociopolitical Impact, and competitiveness.

Figure 8: Agglomeration economies of the clusters in China and Mexico

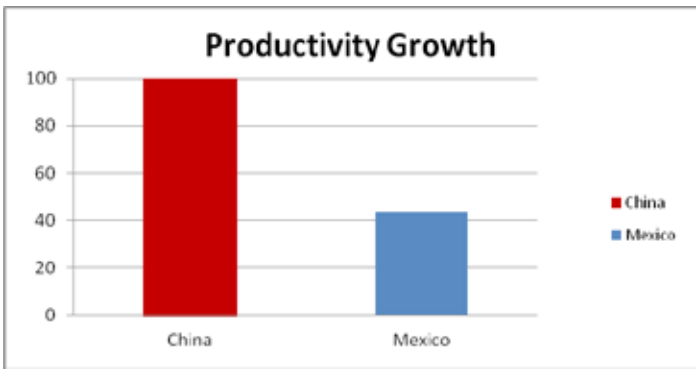


Source: Own creation.

Figure 8 shows the disaggregation of the agglomeration economies at the variable level. With the exception of population index of cities with the highest concentration in 2010 (due to the percent impact of Mexico City's population in Mexico's total population), the variables for agglomeration economies show that China is better when compared to Mexico.

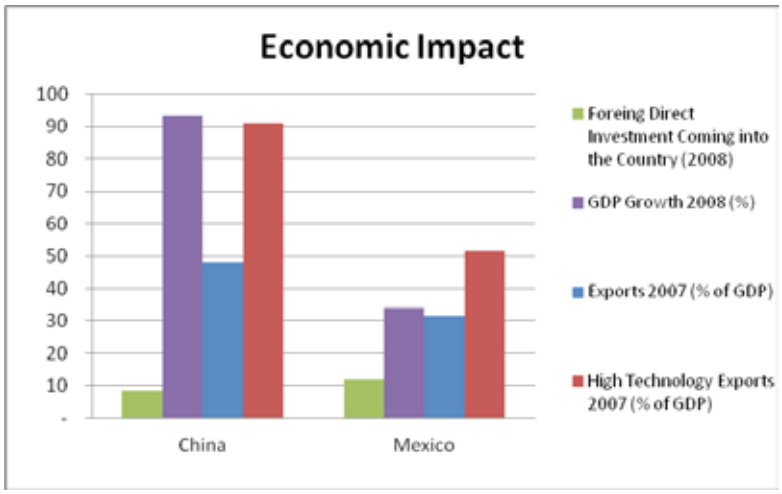
Figure 9 shows the productivity growth, in which index China is the top of the sample.

Figure 9: Impact of the clusters on productivity in China and Mexico



Source: Own creation.

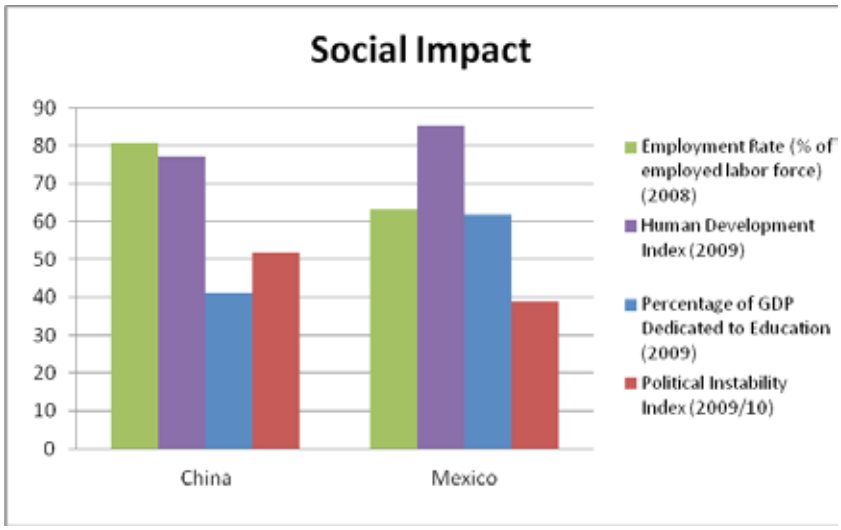
Figure 10: Economic impact of the clusters in China and Mexico



Source: Own creation.

Figure 10 shows the disaggregation of the economic impact of the clusters at the variable level. With the exception of FDI coming into the country, the variables for the economic impact of the clusters show that China has better outcomes, when compared to Mexico.

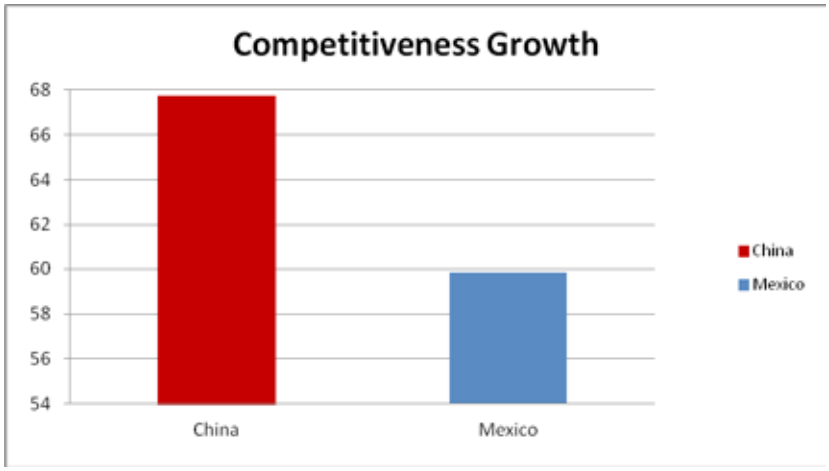
Figure 11: Sociopolitical Impact of the clusters in China and Mexico



Source: Own creation.

Figure 11 shows the outcomes in each variable of the sociopolitical impact for Mexico and China. China gets higher outcomes in the employment rate and the political stability index, and Mexico is superior in the human development index and the percentage dedicated to education. China has a higher index (62.78), but Mexico is very close. (62.35)

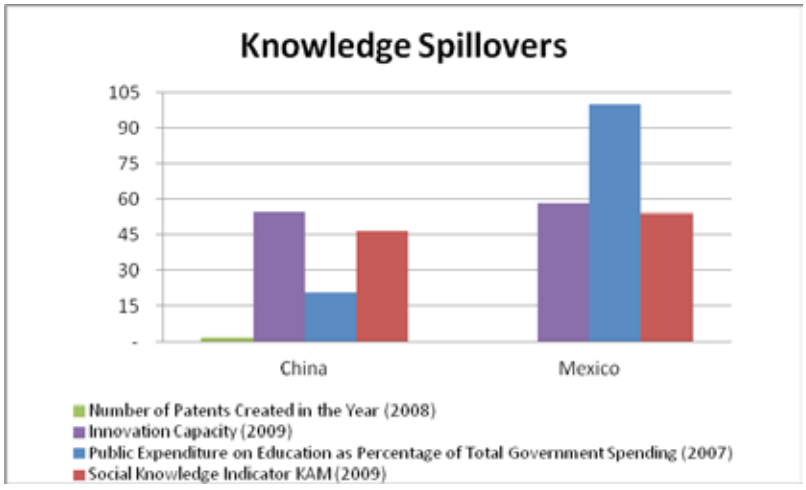
Figure 12: Positive impact of the clusters on competitiveness in China and Mexico



Source: Own creation.

Figure 12 shows that the impact of clusters on competitiveness favors China over Mexico. The following figures (Figure 13 and Figure 14) show that Mexico is better than China in knowledge spillovers and positive impact in the operation.

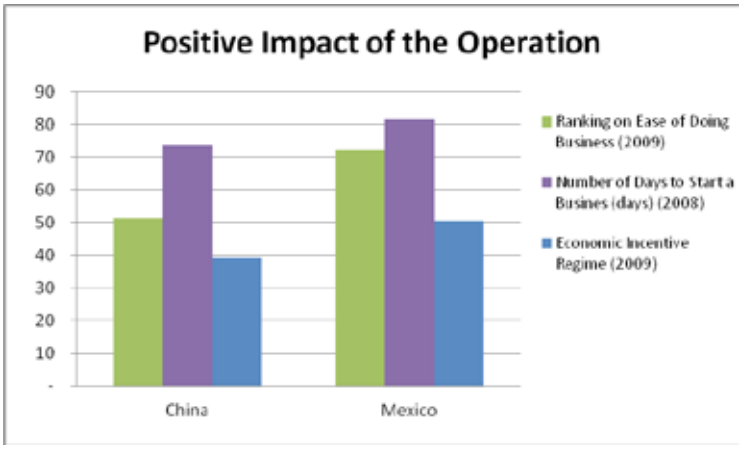
Figure 13: Knowledge spillovers of the clusters in China and Mexico



Source: Own creation.

From Figure 13, it is clear that, with the exception of the number of patents created in 2008, Mexico has better indicators for each variable composing the knowledge spillovers. Figure 14 shows better results in each variable of the positive impact for Mexico when compared to China.

Figure 14: Positive impact of the clusters in the operation in China and Mexico



Source: Own creation.

The abundant low-cost labor market has meant that the People's Republic of China has a competitive advantage that has enabled sustained growth for the past thirty years. That competitive advantage, however, is reaching its maximum. There are now more expensive cities that have enjoyed cluster growth and China has started looking for new low-cost advantages to the west, reinstating part of its operations in less developed regions. That is why there are business clusters in their infancy in the west.

China is in the second stage of its economic maturity, but it needs to prepare its professional labor to absorb knowledge and technology that will allow it to achieve quality and differentiation in production. Additionally, it needs to improve its financial market to support growth and improve the availability of technology through innovation, in order to create a new competitive advantage, now based on knowledge.

On the other hand, Mexico is at the front door of the third stage, but it needs to improve factors such as education and the rigidity of labor regulations, underpin its resources for the creation of technology, strengthen its economic independence, integrate clusters in order to operate smoothly, and also generate new initiatives in other states that are supported by the regions.

Both countries have their own very specific challenges, but they both strive to improve their competitiveness and quality of life for their inhabitants. There are deep differences in terms of competitive performance. What is constant is the importance of an institution or agency to design and oversee the entrepreneurial efforts toward the common goal of raising the quality of life for its inhabitants.

6. Concluding Remarks

The agglomeration of companies provides dynamism and growth to the economy, and if carried out as planned also brings together all participants in a cluster development. The benefits generated from external economies permeate through agglomerated companies and down to the inhabitants of the region, giving way to not only economic but also cultural growth.

In addition, the efforts of the governments of the People's Republic of China and Mexico to integrate clusters have followed different routes. China has implemented more stringent policies and practices changing the way of doing business, and the government has provided the environment for growth to happen. However, Chinese products have not yet reached a level of quality high enough to be recognized internationally as a valued brand. In Mexico, on the other hand, there are agglomerations that have emerged spontaneously and that operate in a moderately efficient way, mainly because the policies established by the government have not been strong enough to internalize the understanding of the benefits of the cluster. However, the government intends to encourage their growth through some supporting institutions established for that purpose. Universities also do their work, and in some states successful clusters exist.

One lesson that policy makers can learn from China is the benefit of a good deal of unilateral policy setting with the aim fixed on economic growth. Its population has raised living standards generally speaking, and the government has earned the trust of its inhabitants. On the other hand, Mexico and its plural participation seem not to agree on the path to improvement that must be followed. These situations are reflected in the overall competitiveness of both countries. With the loss of global competitiveness, the action of public policy should be more aggressive, consistent, and persistent, identifying activities that can be integrated to enhance the competitiveness of a region. In addition, Mexico should raise awareness among states that one path to productivity is the organized efforts of clusters, and should encourage regional manufactured products in order to raise standards through the creation and application of technology. In any case, the creation of an exclusive agency responsible for coordinating and monitoring efforts is necessary (OECD, 2009b).

Annex 1: Standardized data base for the creation of radars (the maximum is 100)

	Competitiveness Growth	Knowledge Spillovers				Agglomeration Economies					Productivity Growth
	Competitiveness	Innovation		Knowledge		Population		Macroeconomy	Energy	Level of Entrepreneurship	Productivity
	Global Competitiveness Index (2009)	Number of Patents Created in the Year (2008)	Innovation Capacity (2009)	Public Expenditure on Education as Percentage of Total Government Spending (2007)	Social Knowledge Indicator KAM (2009)	Population Index of Cities with Highest Concentration of People (2010)		Secondary Sector Value (2010)	Average Power Consumption (Electricity, Petroleum, Natural Gas) (2010)	Global Entrepreneurship Index (GEINDEX) (2009)	Productivity Levels in 2008 (GDP per Hour worked) (1990=100)
	Source: World Economic Forum	Source: US Patent and Trademark Office	Source: World Bank	Source: UNDP	Source: World Bank	Source: United Nations Population Division		Source: CIA - The World Factbook	Source: CIA - The World Factbook	Source: Friedrich Schiller University	Source: International Labour Organization
Australia	73.57	1.67	88.80	51.95	90.80	Sydney	53.48	17.03	4.97	67.00	56.45
Austria	73.29	0.60	90.00	42.58	87.80	Vienna	65.39	13.11	1.50	52.00	58.87
Belgium	72.71	0.66	89.30	47.27	87.70	Brussels	38.36	10.16	2.68	57.00	52.42
Brazil	60.43	0.13	61.90	56.64	61.10	Sao Paulo	27.73	11.70	8.83	20.00	52.02
Canada	76.14	4.38	94.40	48.83	90.80	Toronto	46.18	17.61	13.33	67.00	51.61
Chile	67.14	0.02	68.50	62.50	65.30	Santiago	79.42	6.17	1.11	45.00	58.47
China	67.71	1.58	54.40	20.66	46.60	Shanghai	6.03	62.27	48.70	32.00	100.00
Denmark	78.00	0.50	94.90	60.55	94.90	Copenhagen	45.97	14.19	0.82	75.00	50.00
Finland	77.57	1.06	96.70	48.83	93.90	Helsinki	49.53	11.65	1.34	56.00	61.69
France	73.29	4.08	86.60	41.41	86.40	Paris	45.45	13.93	9.50	55.00	53.63
Germany	76.71	11.50	89.40	37.89	89.20	Berlin	13.18	19.27	14.02	44.00	53.63
India	61.43	0.82	41.50	41.80	29.50	Delhi	14.07	14.88	12.85	26.00	0.00
Ireland	69.14	0.21	90.80	54.30	89.80	Dublin	56.15	18.58	0.77	64.00	65.32
Italy	61.57	1.75	80.00	35.94	81.80	Rome	18.94	13.60	9.48	48.00	47.98
Japan	76.71	43.46	92.20	37.11	86.30	Tokyo	100.00	22.72	20.63	45.00	56.45
Mexico	59.86	0.07	58.20	100.00	54.20	Mexico City	52.31	8.42	7.99	25.00	43.55
Netherlands	76.00	1.71	94.50	44.92	93.90	Amsterdam	17.60	17.08	5.22	60.00	53.23
Norway	73.86	0.35	90.60	65.23	92.50	Oslo	41.50	35.12	1.71	62.00	58.06
Peru	57.29	0	38.70	60.16	48.80	Lima	67.09	3.11	0.70	32.00	67.34
Russia	59.29	0.23	68.80	50.39	68.20	Moscow	23.78	11.01	34.93	24.00	43.00
South Korea	71.43	9.74	86.00	59.77	84.30	Seoul	56.22	12.02	9.11	49.00	91.13
Spain	65.57	0.39	81.40	42.97	81.80	Madrid	38.61	11.42	6.77	43.00	47.58
Sweden	78.71	1.37	97.60	50.39	95.70	Stockholm	32.18	10.57	1.81	73.00	57.26
United Kingdom	74.14	3.99	92.40	48.83	90.60	London	40.53	15.57	10.46	51.00	62.50
United States of America	79.86	100.00	94.70	53.52	90.20	New York	17.20	50.60	100.00	68.00	56.05

Source: Own creation.

Annex 1 (Continued)

	Positive Impact of the Operation			Economic Impact				Social Impact			
	Business Environment			Investment Attraction	Solid Macroeconomy	Exports		Job Growths	Human Development	Education	Political Stability
	Ranking on Ease of Doing Business (2009)	Number of Days to Start a Business (days) (2008)	Economic Incentive Regime (2009)	Foreign Direct Investment Coming into the Country (2008)	GDP Growth 2008 (%)	Exports 2007 (% of GDP)	High Technology Exports 2007 (% of GDP)	Employment Rate (% of employed labor force) (2008)	Human Development Index 2009	Percentage of GDP Dedicated to Education (2009)	Political Instability Index (2009/10)
	Source: Doing Business (World Bank, Intal Corporation. Financial and Macmilan)	Source: World Bank	Source: World Bank	Source: United Nations Conference on Trade and Development (2008)	Source: International Monetary Fund	Source: World Bank Group		Source: World Bank Group	Source: International Labour Organization	Source: UNDP	Source: Eurostat
Australia	95.08	98.68	86.60	23.05	41.87	23.60	42.42	75.90	97.00	68.97	64.00
Austria	84.70	81.58	93.10	20.63	39.49	66.29	33.33	73.80	95.50	68.97	64.00
Belgium	87.98	97.37	88.70	73.51	31.11	100.00	21.21	66.20	95.30	76.88	60.00
Brazil	29.51	0	43.10	21.21	63.02	15.73	36.36	74.90	81.30	66.54	46.00
Canada	95.63	96.71	94.50	18.54	26.80	42.70	42.42	79.40	96.60	62.96	72.00
Chile	73.22	82.24	87.60	57.77	48.16	52.81	21.21	60.20	87.80	43.42	49.00
China	51.37	73.68	39.00	8.39	93.55	48.31	90.91	80.80	77.20	41.12	52.00
Denmark	96.72	96.05	96.10	20.85	14.25	58.43	51.52	79.60	95.50	100.00	78.00
Finland	91.26	90.79	93.10	34.77	31.67	50.56	63.64	74.90	95.90	75.48	68.00
France	83.06	95.39	76.70	26.48	26.09	30.34	81.82	69.10	96.10	71.39	47.00
Germany	86.34	88.16	90.60	5.01	33.28	52.81	42.42	75.40	94.70	57.47	62.00
India	27.32	80.26	35.00	13.58	80.65	23.60	15.15	60.90	61.20	43.30	55.00
Ireland	96.17	91.45	92.60	50.72	0.00	92.13	84.85	72.60	96.50	62.71	54.00
Italy	57.38	93.42	66.20	4.99	15.51	32.58	21.21	63.90	95.10	54.79	50.00
Japan	91.80	84.87	78.10	3.04	18.11	15.73	57.58	72.60	96.00	44.06	62.00
Mexico	72.13	81.58	50.60	11.96	34.06	31.46	51.52	63.30	85.40	61.69	39.00
Netherlands	83.61	93.42	92.20	100.00	39.09	84.27	78.79	76.50	96.40	67.94	60.00
Norway	94.54	95.39	94.70	7.55	40.15	51.69	54.55	78.00	97.10	86.33	88.00
Peru	69.40	57.24	44.90	20.69	100.00	32.58	6.06	75.70	80.60	31.93	30.00
Russia	34.43	80.26	17.60	27.49	67.09	33.71	21.21	72.50	81.70	52.36	35.00
South Korea	89.62	88.82	60.00	3.93	40.86	47.19	100.00	65.00	93.70	53.77	49.00
Spain	66.12	69.08	86.00	19.61	30.23	29.21	15.15	71.50	95.50	55.56	45.00
Sweden	90.16	90.13	93.30	65.86	22.38	58.43	48.48	79.40	96.30	85.44	68.00
United Kingdom	97.27	91.45	92.40	30.70	29.35	29.21	57.58	76.30	94.70	71.01	54.00
United States of America	97.81	96.05	90.40	17.56	26.99	12.36	84.85	74.40	95.60	70.75	47.00

Source: Own creation.

NOTES: The following explanations are needed regarding the creation of the 100 base indexes:

• For the Index of Education of the World Bank: 100 is the maximum possible in the index, in this case that is 10.

• For the number of patents created in the year of the US Patent and Trademark Office: 100 is the maximum of patents registered by the countries included in the sample, which in this case was USA with 77,501 patents.

• For the Capacity of Innovation of the World Bank: 100 is the maximum possible, which for this index is 10.

• For the public expenditure in education as % of the GDP of the UNDP: the maximum investment in education inside the sample is Mexico with 25.6 %, which is taken as base 100.

• For the Indicator of the Social Knowledge of the World Bank: 100 is the maximum possible, which for this index is 10.

• For the Index of Global Competitiveness of the Economic World Forum: 100 is the maximum possible, which for this index is 7.

• For the Levels of Productivity of the International Labor Organization: 248, the maximum inside the sample for productivity, is the base 100. In this index there was no data for India, so the blank was filled with information taken from the Global Competitiveness Report. India got a score of 4.2 (in a scale from 0 to 7) in the Pay and Productivity variable in the Global Competitiveness Report. Scaling this number to the base 100, it would be 60.0 points.

• For the Ranking on easiness for doing business of the Doing business of the World Bank: The country ranked number 1 became 100, so the position we adopted the formula where the standardized index was [100-0.546(n-1)] where is n the position occupied by the country analyzed and 0.546 was the result of 100 divided by 183, which is the total number of ranked countries.

• For the Number of days to open business of the World Bank: We took the range [1-152], because 152 was the maximum number of days inside the sample (Brazil). One gave 100 to the minimal value and reduced a factor of 0.657 (100/152) for each additional day.

• For the Index of Economic Incentive and Institutional Regime of the World Bank: 100 is the maximum possible, which in this index is 10.

• For Global Entrepreneurship from the Friedrich's Global Index Schiller University: 100 is the maximum possible, which in this index is 1.

• For the UNCTD's Foreign Direct Investment inflows: the maximum level of foreign investment inside the sample is 70.98 % of the Netherlands, which is taken as the base 100.

• For the GDP Growth from the International Monetary Fund: the range of the sample was [9.837 to -3.036]. So we normalize the range where the minor growth rate equals 0 and the maximum is equal to 100.

• For the Exports of the World Bank: the maximum level of exports in the sample was 89%, belonging to Belgium. That became the base 100.

• For the Exports of high technology of the World Bank: the maximum level of exports of high technology in the sample is 33% for Belgium, so that is the base 100.

• For the Rate of employment of the International Labor Organization: the information was taken as it is, since this variable has a 100 base.

• For the UNDP's Index UNDP's Human Development: 100 is the maximum possible to be obtained in this index, this is 1.

• For the Index of Political Instability of the Economist Intelligence Unit: 100 is the maximum possible, which in this index is (10-x)*10.

• For the variable energy we had in mind the consumption of electricity, oil, and natural gas; all this information was compiled from the CIA - The World Factbook. Each indicator was standardized taking the maximum as 100, and later an average was extracted.

•The information that served for the construction of the variable Macroeconomics was obtained from the CIA - The World Factbook. Compiled information included GDP of the Secondary Sector, Population of the Secondary Sector and the GDP per capita of the Secondary Sector. All these were changed to base 100 later to be divided equally by other variables.

•As for the population, we take the most populated cities in every country, from the United Nations Population Division, and divided that population of the city by the population in the country. This index was changed to a base 100, with Japan heading this ranking.

Annex 2: Parameters for each of the seven dimensions of the impacts of clusters

	Competitiveness Growth	Knowledge Spillovers	Agglomeration Economies	Productivity Growth	Positive Impact of the Operation	Economic Impact	Social Impact
Peaks	79.86	84.60	58.95	100.00	96.29	75.54	88.28
Germany	76.71	57.00	22.62	53.63	88.37	33.38	72.39
Australia	73.57	58.31	35.62	56.45	93.46	32.74	76.47
Austria	73.29	55.24	33.00	58.87	86.46	39.94	75.57
Belgium	72.71	56.23	27.05	52.42	91.35	56.46	74.60
Brazil	60.43	44.94	17.07	52.02	24.20	34.08	67.18
Canada	76.14	59.60	36.03	51.61	95.61	32.62	77.74
Chile	67.14	49.08	32.92	58.47	81.02	44.99	60.11
China	67.71	30.81	37.25	100.00	54.68	60.29	62.78
South Korea	71.43	59.95	31.59	91.13	79.48	48.00	65.37
Denmark	78.00	62.71	34.00	50.00	96.29	36.26	88.28
Spain	65.57	51.64	24.95	47.58	73.73	23.55	66.89
Finland	77.57	60.12	29.63	61.69	91.72	45.16	78.57
France	73.29	54.62	30.97	53.63	85.05	41.18	70.90
Netherlands	76.00	58.76	24.97	53.23	89.74	75.54	75.21
India	61.43	28.40	16.95	0.00	47.53	33.24	55.10
Ireland	69.14	58.78	34.88	65.32	93.41	56.93	71.45
Italy	61.57	49.87	22.51	47.98	72.33	18.57	65.95
Japan	76.71	64.77	47.09	56.45	84.92	23.61	68.67
Mexico	59.86	53.12	23.43	43.55	68.10	32.25	62.35
Norway	73.86	62.17	35.08	58.06	94.88	38.48	87.36
Peru	57.29	36.91	25.73	67.34	57.18	39.83	54.56
Russia	59.29	46.90	23.43	43.00	44.10	37.37	60.39
Sweden	78.71	61.26	29.39	57.26	91.20	48.79	82.29
United Kingdom	74.14	58.96	29.39	62.50	93.71	36.71	74.00
United States of America	79.86	84.60	58.95	56.05	94.76	35.44	71.94

Source: Own creation.

References

Altenburg, Tilman and Jörg Meyer-Stamer (1999) "How to Promote Clusters: Policy Experiences from Latin America." World Development, Vol. 27, No. 9, pp. 1693-1713.

Amano, Tomofumi (2006). "Competitive Strategy of Global Firms and Industrial Clusters." [Versión electrónica], 38p., MMRC discussion paper No.99, Tokyo: Universidad de Tokyo. Retrieved on September 11, 2009. Available in: http://www.ut-mmrc.jp/

Asheim, B., Cooke, P. y Martin, R. (2008), "Clusters and Regional Development: Critical Reflections and Explorations". Economic Geography, 84: 109–112.

Bellandi, M. and Di Tomasso, M. (2005). "The Case of Specialized Towns in Guangdong, China", Taylor and Francis Group, Ltd, 2005.

Chakravorty, S., Koo, K. and Lall, S. (2003). "Metropolitan Industrial Clusters: Patterns and Processes". [Versión electrónica], 44 p., Washington, USA: The World Bank Development Research Group Infrastructure and Environment. Retrieved on September 12, 2009. Available in: http://econ.worldbank.org

CLAUT (2005). ¿Qué es CLAUT? [versión electrónica]. México: Cluster Automotriz de Nuevo León, A.C. Retrieved on November 5, 2009, in http://claut.com.mx/Acerca_de_CLAUT.php

Cooke P., Huggins R. (2003), "High-technology clustering in Cambridge (UK)", in A. Amin, S. Goglio and F. Sforzi (eds.), The institutions of local development.

Cortright, Joseph (2006). "Making Sense of Clusters: Regional Competitiveness and Economic development." [Versión Electrónica], 66p., Portland, USA: The Brookings Institution Metropolitan Policy Program. Retrieved on September 8, 2009. Available in: http://www.competitiveness.org/article/library/

David L. Barkley (2001). "Advantages and Disadvantages of Targeting Industry" Clemson, South Carolina: Clemson University. Retrieved on April 26, 2011. Available in: http://cherokee.agecon.clemson.edu/redrl_rpt3.pdf

Duranton, Gilles (2007). «Urban Evolutions: The Fast, the Slow, and the Still,» American Economic Review, vol. 97(1), pages 197-221, March.

Eaton J. and Grossman, G. M. (1986) "Optimal Trade and Industrial Policy under Oligopoly". The Quarterly Journal of Economics 101(2): 383-406

ECPG (2010). "European Cluster Policy Group. Final Recommendations— A call for policy action". ECPG_Final Report_weblow1.pdf. Retrieved on September 7, 2009. Available in: http://www.proinno-europe.eu/ecpg/newsroom/ecpg-final-recommendations

Ellison, Glenn and Edward L. Glaeser (1997). "Geographic concentration in US manufacturing industries: A dartboard approach". Journal of Political Economy 105 (5): 889-927.

Enright, M., Scott, E., and Chang, K. (2005), "Regional Powerhouse: The Greater Pearl River Delta and the Rise of China", John Wiley and Sons, 2005.

FUMEC (2008) Presentan oficialmente Cluster Automotriz Regional del Estado de México. México: Fundación México-Estados Unidos para la Ciencia. Retrieved on November 5, 2009, available in http://www.fumec.org.mx/v5/index.php?option=com_contentandview=articleandid=52%3Acluster-automotriz-edomexandcatid=39%3AautomotrizandItemid=68andlang=en

Giordano, Paolo, Francesco Lanzafame and Jörg Meyer-Stamer (2005) "Regional Integration and Territorial Development in Latin America". In: Giordano, Paolo, Francesco Lanzafame and Jörg Meyer-Stamer, Asymmetries in Regional Integration and Local Development. Washington: Inter-American Development Bank.

Gordon, I. R. and McCann, P. (2000). Industrial clusters: Complexes, agglomeration and/or social networks?" Urban Studies, Vol. 37, No. 3, 513-532, 2000.

Hernández, C. (2010). Política Económica Internacional. México: Astra Ediciones.

Hernandez, C. and Von Putlitz, I. (2009). Identificación de Oportunidades Estratégicas para el Desarrollo del Estado de Jalisco. Mexico: ITESM-FEMSA. Electronic version ISBN: 9-786077-51747-4.

InteQsoft. (2009). "Cluster de Tecnologías de Información del Estado de Querétaro México." Retrieved on November 5, 2009, in http://www.inteqsoft.com.mx/

Isbasoiu, George (2007). "Industrial Clusters and Regional Development. The Case of Timisoara and Montebelluna." [versión electrónica], 30 p., ERIK Network Conference, Brussels: RTN Urban Europe Program. Retrieved on September 11, 2009. Available in http://es.scribd.com/doc/474934/Industrial-Clusters-and-Regional-Development-The-Case-of-Timisoara-and-Montebelluna

IT@Baja (2009). "Soluciones para el Cluster de Tecnologías de Información de Baja California. México: Cluster de Tecnologías de Información de Baja California, A.C." Retrieved on November 5, 2009, in http://www.itbaja.com/somos

ITDWB (2009). "Clusters for Competitiveness a Practical Guide and Policy Implications for Developing Cluster Initiatives." [Electronic Version]. 92 p. International Trade Department of the World Bank (ITDWB). Retrieved on September, 7, 2009 Available in: http://www.competitiveness.org/article/library/

ITESM (2010), "La Competitividad de los estados Mexicanos," Escuela de Graduados en Administración Pública y Política Pública, Marzo, 2010.

ITESM-FEMSA (2009). "Mapas de Oportunidades." México: Observatorio Estratégico-Tecnológico. Retrieved on November 25, 2009, in http://oet.itesm.mx/privado/centro/oportunidades/mapas/homedoc.jsp

Johnston, Ron (2003). "Clusters: A Review". Prepared for 'Mapping Australian Science and Innovation' Department of Education, Science and Training. March 2003. Australia. Retrieved on November 5, 2009. Available in: http://www.dest.gov.au/archive/mapping/pubs/case_studies/clusters.pdf

Katzenstein, P.J. (1985). Small States in World Markets. Industrial Policy in Europe. USA: Cornell University Press.

Kerala Government (2004) "Presentation about Clusters". Kerala, India. Retrieved on September 11, 2009 Available in: http://www.kudumbashree.org/Minutes/Aug-2004/cluster/cluster_raj.ppt

Ketels, Christian (2003). "The development of the cluster concept – present experience and further developments." [Versión Electrónica], 25p., Duisburg, Alemania: NRW conference on clusters. Retrieved on September 4, 2009 Available in: http://www.competitiveness.org/article/library/

Ketels, Christian, Göran Lindqvist, and Örjan Sölvell, (2006). Clusters Initiatives in developing countries and transition economies. Stockholm: Center for Strategy and Competitiveness. Retrieved on September 4, 2009 Available in: http://www.cluster-research.org/dldocs/CIsDevelopingTransitionMay06.pdf

Krugman, Paul (1998). "What's new about the new economic geography?," Oxford Review of Economic Policy 14 (2). p. 7-17

Li and Fung Research Centre (2006a). "Industrial Cluster in Yangtze River Delta (YRD)," Industrial Cluster Series, 3, 2006.

Li and Fung Research Centre (2006b). "Industrial Cluster in the Pearl River Delta (PRD)," Industrial Cluster Series, 2, 2006.

Li and Fung Research Centre (2006c). "Overview of the Industrial Cluster in China," Industrial Cluster Series, 1, 2006. Retrieved on October 18, 2009. In the web on: http://www.idsgroup.com/profile/china.html#IndustrialClustersSeries.

Li and Fung Research Centre (2010). "Update on Industrial Clusters in China 2010," Industrial Cluster Series, 6, 2010. Retrieved on February 6, 2011. In the web on: http://www.idsgroup.com/profile/pdf/industry_series/LFIndustrial6.pdf

Liu, X. (2008). "SME Development in China: A Policy Perspective on SME Industrial Clustering," ERIA Research Project Report 2007, Bangkok: JETRO, 5, 2008.

Lundvall, Bengt-Ake (2003). "Industrial Clusters and Competence Building in the Era of the Globalizing Learning Economy." [Versión electrónica], 10 p., Thailand: Lecture at Opening of Thailand Science Park. Department of Business Studies Aalborg University, Denmark. Retrieved on September 12, 2009.

Malberg, A. and Power, D. (2006). "True Clusters". In B. Ashiem, P. Cooke and R. Martin (Eds.), Clusters and regional Development. (pp. 50-68) New York, USA: Routledge.

Markusen, Ann R. 1996. "Sticky Places in Slippery Space: A Tipology of Industrial Districts" . Economic Geography 72(3). July 1996. P. 293-313.

Marshall, A. (1920). Industry and Trade. London: Macmillan

Maskell, P. and Kebir, L. (2006). "What qualifies as a cluster theory?" In B. Ashiem, P. Cooke and R. Martin (Eds.), Clusters and regional Development. (pp. 30-49) New York, USA: Routledge.

Meyer-Stamer, Jörg and Ulrich Harmes-Liedtke (2005). "Como Promover Clusters" Duisburg/ Buenos Aires: MESOPARTNER. Retrieved on September 7, 2009. Available in: http://diprode.opp.gub.uy/pacc/Inicio/Documentos_PACC/Crecimiento_y_productividad_Urlich.pdf

NDRC (2007). National Development and Reform Commission, http://www.sdpc.gov.cn/zcfb/zcfbtz/2007tongzhi/t20071205_176934.htm. Retrieved on September 12, 2009.

Neri, J. C. (2008). "Políticas de clusters como una estrategia para elevar la competitividad." Gobierno del Estado de Guanajuato, México.

OECD (1999) Proceedings, "Boston Innovation, The Cluster Approach", p.12, in Nordin, Sara (2003) Tourism Clustering and Innovation. [Versión Electrónica]. 90p., Estocolmo: European Tourism Research Institute. Retrieved on September 7, 2009 Available in: http://www.competitiveness.org/article/library/

OECD (2009a). "Innovación Regional en 15 Estados Mexicanos" ,OCDE Síntesis, April, 2009.

OECD (2009b). "Supporting Regional Innovation in Mexico" , OCDE presentation, June, 2009.

Paola Morales (2007). "Un Zoom a los Clusters". El Universal. Ciudad de México. Retrieved on April 26, 2011. Available in: http://www.eluniversal.com.mx/articulos/32361.html

People's Government of Chengdu (2009). "Optimization of industrial design to promote the development of industrial cluster in Chengdu" , http://www.chendu.gov.cn/GovInfoOpens2/detail_ruleOfLaw.jsp?id = Sr5ixVjp381UaKAfEOWd. Retrieved on September 12, 2009.

People's Government of Guangdong Province (2007). "Guangdong Provincial Industry Cluster Upgrade Demonstration District Interim Measures identified." In: http://www.gd.gov.cn/govpub/bmguifan/200809/t20080910_65248.htm. Retrieved on September 12, 2009.

People's Government of Shaanxi Province (2009) "Guidelines for the development of industrial cluster in the province of Shaanxi". In: http://www.gov.cn/gzdt/2009-05/08/content_1308085.htm. Retrieved on September 12, 2009.

People's Government of Shandong Province (2008). "Shandong Provincial Government On the views of Development of Industrial Clusters" . In: http://www.shandong.gov.cn/art/2008/7/29/art_956_1641.html. Retrieved on September 12, 2009.

Portal Ciudadano del Gobierno Federal (2009). Sitio Oficial del Gobierno de México Apoyos para Empresas que se unan en agrupamientos empresariales. México: Gobierno Federal. Retrieved on November 5, 2009, in http://www.gob.mx/wb/egobierno/egob_Apoyos_para_empresas_que_se_unan_en_clusters

Porter, Michael E. (1990). The Competitive Advantage of Nations. New York: free Press.

Porter, Michael E. (1998). "Clusters and the New Economics of Competition" . Harvard Business Review 76 (6): 77-91.

Porter, Michael E. (2000a). "Location, competition, and economic development: Local clusters in a global economy" . Economic Development Quarterly 14 (1): 15-34.

Porter, Michael E. (2000b). "Location, clusters, and company strategy" . In Gordon L. Clark, Maryann P. Feldman and Meric S. Gertler (eds.) The Oxford Handbook of Economic Geography. New York: Oxford University Press.

Roelandt, Theo (1999). "Cluster Analysis and Cluster-Based Policy Making in the OECD Countries: An Introduction to the Theme" (p. 9-23). In Bosting Innovation: The Cluster Approach. [Versión electrónica]. Francia: OECD Proceedings. Retrieved on September 11, 2009

Rosenfeld, S. (2002). "A Governor's Guide to Cluster-based Economic Development." Washington: National Governors Association. Retrieved on September 7, 2009. Available in: http://www.rtsinc.org/staff.html

Rosenfeld, S.A. (1996). "Industrial Strength Strategies: Regional Business Clusters and Public Policy," Aspen Institute Rural Economic Policy Program, Best Practice Series, Industrial Strength Strategies.

Rosenfeld, S.A. (1997). "Bringing Business Clusters into the Mainstream of Economic Development," European Planning Studies, Volume 5, No.1.

SBEDP (2001). Review of South Bay Key Industry Clusters. [Versión electrónica] 31 p., South Bay Economic Development Partnership (SBEDP) California , USA:. Retrieved on September 12, 2009.

Schmitz, H., and Nadvi, K. (1999). Clustering and Industrialization: Introduction. World Development, 27(9), 1503-1514.

Sölvell, Örjan, Göran Lindqvist, and Christian Ketels (2003). The Cluster Initiative Greenbook. Gothenburg: Competitiveness Institute (TCI)/ Vinnova.

Sonobe, Tetsushi and Otsuka, Keijiro (2006). Strategy for Cluster-Based Industrial Development in Developing Countries, Foundation for Advanced Studies on International Development and National Graduate Institute for Policy Studies, July 13, 2006.

Timpano F. - Piva M.C. 2008 Cluster policies and local development, Vita e Pensiero

Unger, Kurt (2009). "Competitividad y Especialización de la Economía de Guanajuato: Un acercamiento municipal, 1993—2003," Centro de Investigación y Docencia Económica (CIDE), documento de trabajo 462.

UNIDO (2001). "Development of Clusters and Networks of SME´s." [versión electrónica], 36 p., Viena: The UNIDO Programme. United Nations Industrial Development Organization. Retrieved on on September 12, 2009.

R E V I S T A
Globalización, Competitividad y Gobernabilidad
J O U R N A L
Globalization, Competitiveness & Governability
R E V I S T A
Globalização, Competitividade e Governabilidade

GCG
GEORGETOWN UNIVERSITY universia

Why isn't Mexico on China's Growth Path?

AREA: 2
TYPE: Case

¿Por qué Méjico no se halla en la senda de crecimiento de China?
Porque é que o México não está no Caminho do Crescimento da China?

AUTHOR
James Gerber[1]
Director of International Business
Professor of Economics
San Diego State University
jgerber@mail.sdsu.edu

A growth accounting framework is used with data from the Penn World Table to disaggregate and compare economic growth in Mexico and China, 1953-2007. China surpasses Mexico in both the accumulation of physical capital and the growth of total factor productivity, implying that high savings rates are partially responsible for the growth differences, but additional forces are also important. The catalog of potential variables is lengthy; this paper concentrates on geography (location) and institutions. In particular, the ability of Chinese state and local officials to support economic growth is striking.

Se utiliza un marco de contabilidad del crecimiento con datos procedentes de la Tabla Mundial de Penn para desagrupar y comparar el crecimiento económico en Méjico y China, 1953-2007. China supera a Méjico tanto en acumulación de capital físico como en crecimiento del factor de productividad total, lo que implica que las elevadas tasas de ahorro son parcialmente responsables de las diferencias de crecimiento; no obstante, las fuerzas adicionales también son importantes. El catálogo de variables potenciales es amplio; este trabajo se concentra en la geografía (ubicación) y las instituciones. En concreto, la capacidad del estado chino y sus autoridades locales para respaldar el crecimiento económico es sorprendente.

É utilizada uma estrutura de contabilização do crescimento, com dados da Tabela Mundial Penn, para desagregar e comparar o crescimento económico no México e na China entre 1953-2007. A China ultrapassa o México, tanto na acumulação de capital físico como no crescimento do factor de produtividade total, o que implica que as elevadas taxas de poupança são parcialmente responsáveis pelas diferenças de crescimento, mas as forças adicionais também são importantes. O catálogo de variáveis potenciais é longo; este estudo concentra-se na geografia (localização) e nas instituições. Em particular, a capacidade do Estado chinês e dos responsáveis locais para apoiar o crescimento económico é surpreendente.

1. Corresponding Author: International Business Program; San Diego State University; San Diego; CA 92182-6038, USA

DOI
10.3232/GCG.2012.V6.N1.05

Received
03.05.2011

Accepted
01.03.2012

1. Introduction: Mexico and China, similarities and differences

China's transformation from a socialist to capitalist economy and Mexico's role as a leading Latin American reformer have generated strong interest among policy makers and social scientists since at least the 1980s. While it is uncommon to compare China and Mexico, they have individually been the focus of a wide array of research related to their recent economic performance[1].Beginning in 1978, with Deng Xiao Ping's cautious opening and limited reforms, and intensifying after his Trip to the South in 1992, China's growth took off, making it one of the fastest and most sustained examples of economic growth in human history. Mexico's challenges were of a different sort, and the implementation of policy changes through the 1980s restored growth but did not turn Mexico into a "Latin American Tiger", on par with China or the other outstanding examples of high growth.

A comparison between China and Mexico is potentially valuable precisely for its ability to shed light on this aspect of Mexico's recent economic history. Why didn't Mexico become a "Latin American Tiger" after it implemented extensive reforms? Is China's experience relevant? While definitive answers are beyond the scope of this paper, my intention is to join the debate, first through an analysis of growth patterns and second by pointing to geographical and structural differences that are not easily captured with a growth model. Ultimately, China's lessons for Mexico and other countries must be filtered through the institutional and historical contexts of different places in different settings. Many of these differences are beyond the control of policy makers and will undoubtedly give rise to a wide range of explanations for different growth experiences, as has already begun with the debate between the proponents of the Washington Consensus and the Beijing Consensus—the latter of which is itself subject to some debate over its definition[2]. Nevertheless, we can deepen our understanding of Mexico's growth experiences if we hold them up to the light of China's remarkable growth record, looking for elements that might be duplicated and those that are beyond anyone's control.

The similarities between China and Mexico are perhaps more striking than might seem obvious at first glance. Both are large economies, whether measured by population or absolute GDP[3]. In the late 1970s and early 1980s, both abandoned the economic policies they had pursed for decades, and both turned towards greater reliance on market mechanisms as they began to strengthen and deepen their international economic integration. Both created regional growth that did not spread to the entire country and both experienced significant intra-country divergence of income levels among their states and provinces, particularly after 1990 in China (Kawakami, 2004) and 1985 in Mexico (Chiquiar, 2005).

Another similarity is the demographic transition experienced in both countries. China and Mexico each had significant declines in their population growth rates beginning in the 1970s, although Mexico's rate started its decline from a higher base and did not fall as

Key Words
China, Mexico, location, institutions, economic growth

Palabras Clave
China, Méjico, ubicación, instituciones, crecimiento económico

Palavras-chave
China, México, localização, instituições, crescimento económico

JEL Codes
O40, P50

1. China and Mexico have been the subject of a number of comparisons, for example Solinger (2009) compares the relationship between labor unions and the state and Lindau and Cheek (1998) compare political processes. Both center their research on the reform period.

2. See Ramo (2004) and Huang (2011).

3. According to Maddison (2010), Mexico is the 13th largest economy in the world and China is the 2nd largest when 2008 GDP is measured in terms of purchasing power parity. In population, Mexico ranks #11 and China #1 in the world.

far as China's (US Census Bureau, 2010). Declining birth rates are the norm in many parts of the world, and Mexico and China are not unique in this respect, but the economic significance cannot be overstated. The direct economic effect was the fall in dependency ratios (population under 15 plus population over 65 divided by total population). In the medium- to long-term it created an opportunity to raise per capita incomes, as the share of the population too young or too old to work has fallen rapidly. The decline in dependency ratios will continue until approximately 2015 in China and 2020 in Mexico, when growth in the over-65 population will begin to push the dependency ratios back up[4].

In other important ways, Mexico and China are very different. Most notably, 65 percent of Mexico's population lived in urban areas in 1978, while China's urban population was only 19 percent of its total. Consequently, agriculture's contribution to total GDP was around 28 percent in China and only 11 percent in Mexico (World Bank, 2010b). This key structural difference between the two economies enabled China to draw on a large, low skilled and low productivity, agricultural labor force as it built its industrial base. Beginning in the early 1990s with reforms in the *ejido* system and changes in its farm subsidy programs, Mexican agricultural policy sought to increase agricultural economies of scale and provide a means for reducing the size of the agricultural labor force. However, given that it began from a relatively smaller base of agricultural workers, the movement from low productivity agriculture into the cities and urban jobs did not have the same impact on GDP as occurred in China.

Another key difference, and one that will be examined in more detail later in the paper, is the geography of each country's global integration. China is surrounded by High Performance Asian Economies (HPAE)[5] while Mexico's windows and doors to the world economy are primarily a land border with the United States. Consequently, China's international trade is geographically diversified while Mexico's is concentrated, and China's is largely waterborne while Mexico's is land-based[6]. Both factors – location and land-versus-water – are relative disadvantages for Mexico.

This paper is an exercise in comparative economics. It is not intended as a set of policy prescriptions or as a recipe for higher growth. Rather, the intent is to examine and compare recent economic growth in China and Mexico with the purpose of finding a set of hypotheses about the causes of their different experiences. In the next section, I use data from Maddison (2010) and the Penn World Table (Heston, Summers, and Aten, 2009) to examine the growth records of both countries over the very long run. China's record looks even more remarkable when viewed historically, and the effect of market opening is clearly visible in the data from both countries. In Mexico's case, there is a striking difference between growth rates measured per capita and those measured per worker. This raises a number of questions about Mexico's economic reforms and their relationship to economic performance in the latter part of the 20th Century. In section 3, I use a basic Solow growth model to measure factor accumulation and, more importantly, total factor productivity (TFP) in both countries. Not

4. Data from the US Census Bureau's International Data Base implies that China's dependency ratio is 0.2656 in 2010, increases to 0.2708 by 2015 and trends upward thereafter; Mexico's ratio is predicted to be 0.3329 in 2020, 0.3345 in 2025, and trends up thereafter (US Census Bureau, 2010).

5. This is the World Bank's terminology (World Bank, 1993).

6. China's top export destination is the EU, which took 20.5 percent of its exports in 2008. Its largest single source of imports is Japan, at 13.3 percent. Mexico exported 80.3 percent of its goods and services to the US, and received 49.2 percent of its imports from the US, most of which were overland (World Trade Organization, 2010).

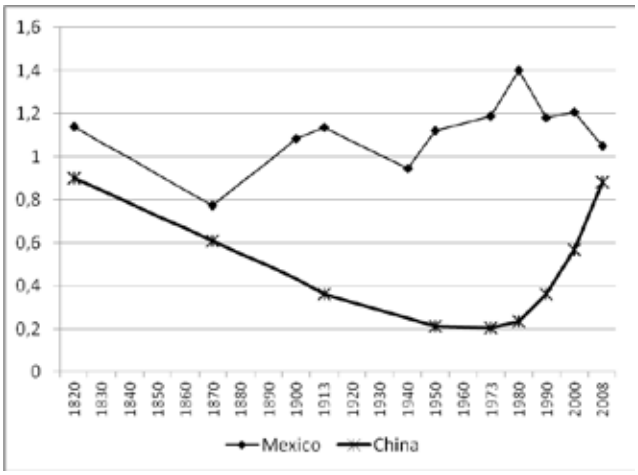
surprisingly, TFP appears to be the key to understanding each country's experience. Section 4 looks at both geographic and institutional factors, and offers several novel hypotheses about the differences in growth rates.

2. The growth record

China is not the only country that has recently grown at historically high rates. Michael Spence cites 12 current or recent examples of 25 or more years of 7 percent or higher growth: Botswana, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Malta, Oman, Singapore, Taiwan and Thailand (Spence, 2008). Each of these countries has had spectacular growth by historical world standards, yet China's size and the persistence of its growth in recent decades give it a different weight in world affairs and popular imagination. The only country with a recent growth record that comes close to generating a similar reaction on the world stage is Japan, but its relative stagnation since the 1990s, its higher income and wages, and its limited geo-political ambitions make its emergence as a leading economy less dramatic and less of a challenge to existing economic and political relationships than China's rapid growth.

According to data collected by Maddison (2010), China's GDP per capita in the mid-1970s was around 20 percent of the world's average; by 2008 it was over 88 percent. In contrast, Maddison's data shows Mexico losing ground after 1980, when it began a decline from 140 percent of world GDP per capita to just below 105 percent in 2008. Figure 1 shows the long run trajectory over time for both countries[7].

Figure 1: GDP per Capita Relative to the World Average



Source: Data from Maddison (2010).

7. Maddison's estimates of GDP per capita are used here to give a broad historical picture. The rest of the paper uses data drawn from the Penn World Table.

The data in Figure 1 do not convey the range of year-to-year variation, which has been significant for Mexico in particular. Figures 2 and 3 show per capita GDP growth rates and per worker growth rates from 1957 to 2007, expressed as the average annual growth of the most recent five-year period. In effect, they are five-year moving averages of annual growth[8]. Using average growth over five-year periods smoothes out the data.

Figure 2: Average annual growth rate of GDP per capita, 5 year moving averages, 1957-2007

Source data: Heston, Summers, Aten (2009).

Figure 3: Average annual growth rate of GDP per worker, 5 year moving averages, 1957-2007

Source data: Heston, Summers, Aten (2009).

8. Averages are calculated as compound annual growth rates, g, where $Y_{t+5} = Y_t(1+g)^5$.

Both countries have better performance in their GDP per capita growth rates than in their per worker rates. In part, this reflects the declining dependency ratios in both countries and the growth of labor forces, which are faster than the growth of the overall population. A second feature of Figures 2 and 3 is the upward trend in China's average annual growth rate after approximately 1978 and the beginning of economic reforms. This shows up in both the per worker series and the per capita series. Third, Mexico's performance in both indicators deteriorates with the onset of the debt crisis and the Lost Decade in 1982. It is well known that growth rates after the 1980s recovered somewhat but remained far below their levels in the 1960s and 1970s, and this is apparent in the data, as well. Fourth, Mexico's gap between growth per capita and growth per worker is sizable throughout the period of recovery in the 1990s, with per worker rates falling significantly below per capita ones. Mexico in the 1990s had negative annual growth per worker with a large standard deviation (Appendix 1; García-Verdú, R., 2007, and Moreno Brid and Ros, 2009, note this as well).

Some of the productivity differences between Mexico and China are related to the sectoral composition of GDP. In 2009, China's manufacturing sector accounted for 34 percent of GDP on a value added basis, while Mexico's was half that at only 17 percent. Similarly, services in China contributed 43 percent of GDP, while in Mexico they were 61 percent (World Bank, 2011). China's relatively larger manufacturing sector and smaller services sector means that more workers are employed in areas of the economy where it is relatively easier to raise productivity and fewer workers where it is more difficult. This is particularly the case when considering Mexico's many small, low value added retailers that have absorbed a significant amount of both urban and rural labor. And finally, while it is the case that China's agricultural sector is much larger (10 percent of GDP in 2009, compared to 4 percent in Mexico), the last three decades of declines in the relative importance of agriculture also favor China, since it began from a much larger base (30 percent of GDP in 1980 versus 9 percent in Mexico) and has been able to free up a sizable amount of low-productivity labor for employment in the much higher value added sectors of construction and manufacturing (World Bank, 2011).

3. Growth accounting

In this section, a standard Solow growth model is used to analyze the patterns in Figures 2 and 3. As a first approximation, output growth can be attributed to either factor accumulation (more capital and more labor) or to total factor productivity (more efficient use of inputs) or to some combination of the two. Increases in capital and labor, or more precisely, capital per worker and labor skills, is relatively easy to understand conceptually; increases in the efficiency of inputs is more difficult to specify concretely, and has a relatively wide range of interpretations. Easterly and Levine (2001) summarize the literature, noting that total factor productivity may reflect changes in technology, the role of externalities, changes in the sectoral composition of output, or the adoption of lower cost production methods. Empirical work that explores the relative importance of each of these factors across a sample of countries or through time is lacking.

A constant returns to scale Cobb-Douglas production function can be defined as $Y = AK^{\alpha}L^{(1-\alpha)}$, where Y is GDP, K is capital, L is labor, A is productivity, and α is capital's share of output, so that (1-α) is labor's share. The model expressed in this manner assumes that all labor is identical. The simplest way around this assumption is to incorporate a human capital component, *h*, which scales up the labor input based on the number of years of schooling a worker supplies. The production function then becomes $Y = AK^{\alpha}L^{(1-\alpha)}$. Dividing by L so that all variables are measured per worker, and letting lower case letters symbolize output and capital per worker,

(1) $y = Ak^{\alpha}h^{(1-\alpha)}$.

Taking logarithms and derivatives, we have:

(2) $\hat{y} = \hat{A} + \alpha\hat{k} + (1-\alpha)\hat{h},$

where ^ or "hat" implies rate of growth. Rearranging, we obtain:

(3) $\hat{A} = \hat{y} - \alpha\hat{k} - (1-\alpha)\hat{h}.$

Note that the rate of change of productivity is calculated as the residual. This allows a calculation of productivity's contribution to the growth in output.

In order to estimate (3), we need estimates of the rates of change of y (output per worker), k (capital per worker), and h (human capital per worker). In addition we need to know α, capital's share of total output. Estimates of output per worker for China and Mexico are available in the Penn World Table (Heston, Summers, and Aten, 2009). Human capital is measured by the average years of schooling of the population 15 and older. The Barro and Lee (2010) dataset contains estimates of the education attainment of the population 15 and above for China and Mexico (and for 144 other countries, in 5 year intervals, from 1950 to 2010). Estimates of k, capital per worker, are obtained by estimating the capital stock per worker in 1950 under the assumption that both countries are in their long-run steady states. Begin by defining the capital accumulation equation:

(4) $K_{t+1} = K_t(1-\delta) + I_t,$

where δ is the rate of depreciation (assumed to be 7 percent per year), and I is investment. The initial capital stock is given by the Solow steady state relationship, where Δk = 0. this implies

(5) $0 = \gamma y - \delta k$,

where γ is the investment rate. Equation 5 gives a reasonable estimate of the starting point and Equation 4 is used to estimate the annual change in the capital per worker ratio. The

difference between the actual and the estimated levels of capital per worker in the first year obtained with Equation 5 quickly becomes less important over time.

Table 1 contains estimates of $\hat{y}, (\alpha\hat{k}), (1-\alpha)\hat{h}, and\ \hat{A},$ where the growth rate of productivity is estimated as a residual based on equation 3. All variables are measured as annual average growth rates over five-year periods[9]. Looking first at China, the data show a strong bifurcation between the pre-reform period and the post-reform years, as expected. The rate of growth of output per worker jumps significantly (see also Figure 3), as does the rate of growth of TFP. Prior to the reforms, growth of GDP per worker was respectable, but afterwards it becomes remarkable. Growth in the pre-reform period, however, was due primarily to the accumulation of capital and labor skills rather than an efficiency increase in the use of inputs. Post-reform, TFP growth becomes a major contributor to overall labor productivity (output per worker), even as the growth rate of capital per worker increases.

Table 1: Rates of change of y, k, h, and A

China	*y hat*	*k hat*	*h hat*	*A hat*
1955-1960	4.05	5.36	4.56	-0.78
1960-1965	0.76	-0.65	4.02	-1.63
1965-1970	1.82	2.09	4.31	-1.71
1970-1975	1.95	3.84	2.93	-1.29
1975-1980	3.62	4.50	3.67	-0.33
1980-1985	4.56	4.68	2.02	1.60
1985-1990	4.09	5.62	1.40	1.22
1990-1995	10.04	7.53	2.64	5.69
1995-2000	7.00	8.24	2.09	2.75
2000-2005	8.09	8.44	1.41	4.22
Mexico	*y hat*	*k hat*	*h hat*	*A hat*
1955-1960	3.79	3.53	1.30	1.71
1960-1965	3.91	3.61	2.74	0.86
1965-1970	3.12	4.44	2.34	0.04
1970-1975	0.29	2.32	3.13	-2.55
1975-1980	3.20	2.88	3.36	-0.49
1980-1985	2.28	2.49	3.22	-0.68
1985-1990	-1.63	-0.35	2.23	-2.96
1990-1995	-5.70	-0.65	2.13	-6.86
1995-2000	3.37	0.20	1.38	2.41
2000-2005	-0.13	0.42	1.96	-1.55

Source: Author's calculations based Heston, Summers, Aten (2009) and Barro and Lee (2010).

9. Capital's share of the output, α, is assumed to be 0.35, which is a standard assumption in growth accounting exercises based on a large number of empirical estimates for different countries. Different values were assigned to α in order to check for robustness in the estimates; there was little quantitative impact within any range of reasonable estimates.

A major challenge for the Chinese economy is the fact that its capital per worker growth rate has increased significantly since approximately 1990, but the contribution of capital to output growth has slowed[10]. This implies diminishing marginal returns for capital accumulation but an increasing importance of TFP, which may have several sources. For example, Huang (2003) and Walley and Xia Xin (2006) argue that new techniques and spillover effects from FDI are critically important to Chinese growth. Naughton (2007) emphasizes the importance of structural change within the economy, as agriculture declines and manufacturing increases. Gereffi (2009) makes an argument based on location and geography in which the development of "supply chain cities" plays a critical role, by which he means both "super-firms" that bring together all the stages of manufacturing and the traditional idea of clusters. Super firms would be an example of internal economies of scale, while clusters, typically, refer to the notion of external economies in which information, labor skills, and parts suppliers are concentrated in one region and generate incentives for additional firms to locate in the same region (Marshall, 1920; Krugman and Venables, 1995).

Table 1 shows that capital accumulation declined significantly in Mexico from the 1980s onward. This is not surprising during the debt crisis of the 1980s, but it is unexpected for the 1990s and afterwards. In large part it must be the result of the strong demographic change and the decline in the dependency ratio. Since the growth rate of capital is measured per worker, by definition a negative number means that capital accumulation did not grow as fast as the labor force. However, China also experienced a similar demographic change and managed high and increasing rates of capital accumulation. Gross savings explains the difference in a macroeconomic sense, although it does not tell us how China managed to save an average of 42.5 percent of its GDP from 1985 to 2007 while Mexico saved 22 percent (World Bank, 2010b). Nor do the numbers explain how China turned its savings into productive physical capital.

The absence of TFP growth in Mexico is not a new discovery. Moreno Brid and Ros (2009) and Faal (2005) find similar results, and Moreno Brid and Ros (p. 231) state that "... it is customary to attribute Mexico's growth slowdown since the early 1980s to a weak growth performance of TFP". There are many potential causes of the weak TFP performance, including the collapse of the domestic market in the 1980s and again in 1995, the absorption of agricultural labor into the low productivity service sector, and the decline of public investment that is complementary to private investment (Moreno Brid and Ros, 2009). In addition, Dussel (2003) argues that the reduced import taxes on capital goods and intermediate manufactured goods weakened the development of domestic supply networks and limited the growth of the manufacturing sector. Finally, many writers have commented on the high level of concentration in the Mexican market, and the presence of market power in key industries such as telecommunications.

Whatever the cause, the numbers in Table 1 indicate a dramatic difference in the growth rates of TFP in China and Mexico after approximately 1980. The end result of these differences was the higher rates of growth of output, both in per worker and per person terms, which are visible in Figures 1, 2, and 3. Chinese income per person is still less than Mexico's (even when measured as purchasing power parity as in Figure 1), but the dramatic fall in the productivity gap ensures that the difference will not last for long.

10. Capital's contribution to growth is calculated as (α*khat)/yhat, where α = 0.35.

We can make a direct comparison of productivity in Mexico and China in the following manner. Given the production functions for each country, $Y_m = A_m K_m^{\alpha} L_m^{1-\alpha}$ and $Y_c = A_c K_c^{\alpha} L_c^{1-\alpha}$, or in per worker terms and incorporating a human capital element, $y_m = A_m k_m^{\alpha} h_m^{1-\alpha}$ and $y_c = A_c k_c^{\alpha} h_c^{1-\alpha}$., divide the equation for Mexico by the equation for China, rearrange to isolate the productivity ratios on the left-hand side and obtain:

$$(6)\quad \frac{A_m}{A_c} = \left(y_m / y_c\right)\left(k_c^{\alpha} h_c^{1-\alpha} / k_m^{\alpha} h_m^{1-\alpha}\right)$$

The calculations used to estimate productivity in equation (3) can be used to obtain both A_m and A_c. The ratio of productivity in Mexico to China changed dramatically between 1980 and 2007. Near the beginning of Chinese reforms and before the onset of the debt crisis in Mexico, TFP was approximately 5 times higher in Mexico. A decade later, in 1990, it was still more than 3.5 times higher in Mexico, but by 2007 it was less than 30 percent higher—still a significant difference, but a small fraction of the original difference.

4. Location and institutions

As is painfully clear from the previous section, Mexico and China have been on different development paths since the 1980s. There are many potential explanations and certainly multiple causes are at work, both for China's success and Mexico's relative failure to raise its TFP. In this section, I look more closely at the interplay of geography and institutions.

The biggest surprise in Table 1 is the lack of total factor productivity growth in Mexico throughout much of the reform period. This is particularly surprising given that Mexico became a reform leader in Latin America in the mid-1980s. Mexico signed the GATT agreement in 1986, privatized hundreds of enterprises, reformed its agricultural sector, became the first recipient of debt reduction under the Brady Plan in 1989, and implemented many of the reforms proposed under the Washington Consensus, as detailed in Lustig (1992), Edwards (1995), Stallings and Peres (2000), Moreno Brid and Ros (2009), and elsewhere. Given that Mexico followed the prescriptions of the World Bank, the IMF, US Treasury, and leading economics departments and think tanks, it seems obvious to ask: What went wrong?

There is no dearth of explanations for slower growth in Mexico; in fact, there are too many explanations. Beginning with the Washington Consensus and its implementation, should we believe that there was not enough reform, or that the reforms were incorrectly implemented, or that they were the wrong reforms, or that other forces interfered, or perhaps some combination of these? China's reforms were far more successful at generating high rates of economic growth, and while Mexico's reforms pulled the country out of the debt crisis, they did not raise the level of capital per worker, nor generate enough savings and investment to significantly reduce poverty or increase the growth rate of GDP per capita, nor consistently generate positive growth rates of GDP per worker.

A great deal of attention has been placed on a variety of specific concerns, such as the business climate (World Bank, 2010a) and competitiveness (Porter, Schwab, and Sala-i-Martin, 2007), policies for the poor and middle class (Birdsall, De la Torre, and Menezes, 2007), integration of the informal economy (De Soto, 1989, 2000), inequality (De Ferranti, et. al, 2004), and on new generation reforms (Kuczynski and Williamson, 2003). This literature is informative but does not provide many insights into the differences between Mexico and China. For example, the World Bank's Doing Business Project (World Bank, 2010a) shows that the business climate in Mexico is better than China[11], and the World Income Inequality Database shows that inequality in China is not much less than in Mexico[12]. Mexico has a large informal economy, but China's *hukou* system also creates a class of workers outside of normal labor and social protections.

An explanation for the differences in Mexican and Chinese growth requires a comparative perspective and consideration of a number of omitted factors. Specifically, China has two advantages that Mexico does not. One, for purposes of stimulating economic growth, it is located in a better "neighborhood". The complement of countries surrounding China give it a more diversified set of possibilities, plus they are connected by water rather than land borders. Consequently, it is less vulnerable to fluctuations in one country, it has a more flexible set of supply chains, it has lower transportation costs, and it avoids the chaos created by drug usage, drug culture, drug trade, and drug suppression. Two, China's system of decentralized economic planning and decision making provides incentives for economic growth at the local level and is able to respond flexibly to new opportunities such as changes in world demand, the introduction of new technologies, and a growing world economy.

4.1. China is located in a better neighborhood

China is surrounded by the High Performance Asian Economies of Korea, Taiwan, Japan, Hong Kong, Malaysia, Singapore, Thailand, and Indonesia. It is connected to these countries by water transport and it can build ports along its coasts without needing to negotiate with another sovereign power. Mexico is surrounded by Central America, the Caribbean, and the United States. Effectively it has one trading partner, the US, and the bulk of its trade is land based through ports of entry that are negotiated bilaterally with 30 or more participants (San Diego Association of Governments, 2005)[13]. Furthermore, the location of Mexican production

11. The World Bank's Doing Business Project (World Bank, 2010a) measures the ease of doing business in 183 nations. They rank countries in ten different dimensions (starting a business, dealing with construction permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, closing a business), each with 3 to 5 indicators. In effect, it is a business scorecard on the institutional environment of national and sub-national economies. The *Doing Business* 2010 report ranks Mexico 51st out of 183 economies and China 89th. This probably understates the differences since each country's ranking is based on conditions in a single place (commercial center) and Mexico's rankings are for Mexico, DF, while China's are for Shanghai. Sub-national reports for Mexico and China show that Mexico, DF, ranks dead last out of 32 states and the federal district, while Shanghai ranks 5th out of 30 of China's largest cities. Consequently, Mexico's worst major commercial center ranks higher than China's 5th best (51st versus 89th among all nations) on the World Bank's ease of doing business scale.

12. The *World Income Inequality Database* has measures of the gini coefficient for both China and Mexico in 2004. Mexico's is given as 49.9, based on measures of income; China's is 46.9 based on measures of consumption (which tend to be more equal in distribution than income). China's measure for 2003 based on income is 44.9, using a different survey methodology. There are differences but not too great (UNU-WIDER, 2010).

13. The San Diego Association of Governments (SANDAG, 2005) recently completed a study for a new border crossing between San Diego and Tijuana. They identified seven local agencies in the US and four in Mexico, four state agencies in the US and two in Mexico, and seven federal agencies in the US and six in Mexico, for a total of 18 US and 12 Mexican agencies that must participate in the negotiations for a new land-based border crossing.

inside the country is less advantageous than China's recent development of manufacturing and export capacity at the water's edge. This important difference is reflected in China's much lower costs for inland transportation and handling of its exported merchandise. The cost for these processes for a 20-foot, full container, weighing 10 tons and valued at $20,000, is $95 in China and $900 in Mexico (World Bank, 2010a).

China is located in a part of the world that has experienced some of the fastest growth rates in the world, while Mexico's location is dominated by the United States, which has grown relatively slower. Table 2 shows the growth rates of an admittedly arbitrary set of neighboring countries for China and Mexico. The East Asian sample is heavily weighted by Japan's large population and its lost decade of the 1990s, which has continued into the 2000s. Other than Japan (which makes up 26 percent of the population-weighted average growth rate), no other country in the East Asian sample grew at a rate less than 4.4 percent per year. In the Americas, only Peru and Chile grew faster than 4.4 percent.

Table 2: Average Annual Growth of GDP (PPP), 1990-2008

East Asia	*1990-2008*	*The Americas*	*1990-2008*
Hong Kong	4.46	Argentina	4.11
Indonesia	4.47	Brazil	2.94
Japan	1.24	Canada	2.61
Malaysia	5.91	Chile	5.27
Singapore	6.08	Colombia	3.24
South Korea	5.19	Peru	4.91
Taiwan	4.85	United States	2.73
Thailand	4.48	Venezuela	3.08
Population weighted average	3.80	Population weighted average	3.06

Source: Maddison (2010).

Another characteristic of location is that China exports to a more diversified set of trading partners. Its top trading partner (the European Union) took 20.5 percent of its exports in 2007, while Mexico's top partner (the US) took 80.3 percent of its exports. The top 5 for China receive 64.8 percent of its exports, while Mexico's top 5 receive 90.8 percent (World Trade Organization, 2010). China's top recipients of exports are the EU and the US, but it also trades extensively with other East Asian economies, such as South Korea, Japan, and Taiwan, among others, while Mexico primarily exports to the US, Canada, the EU, and countries in the Americas. Hence, the differences in growth rates matter.

Proximity to the US has advantages since it is the largest importer of goods in the world. However, it causes the Mexican economy to be vulnerable to macroeconomic conditions in one country. Furthermore, Mexico's trade with the US is largely over land rather than on water, and it is exceedingly complicated to negotiate new infrastructure investment in a bi-national environment in which the US is concerned about terrorism, drug flows, and undocumented migrants. Fears that easier trade flows bring "bads" as well as goods causes trade between the US and Mexico to be politicized to an extraordinary degree, as evidenced by the failure

of the US to honor its commitments under the North American Free Trade Agreement to open its trucking sector. The lack of border crossing infrastructure has been discussed in many venues (e.g., Gerber, 2009) and has been shown to have serious consequences for both countries in the form of lost revenues and jobs (San Diego Association of Governments, 2006; El Colegio de la Frontera Norte, 2007).

Perhaps the most harmful component of Mexico's neighborhood is its proximity to the largest drug-consuming nation in the world. According to the Trans-Border Institute at the University of San Diego (Trans-Border Institute, 2011; Duran-Martinez, et. al., 2010), drug-related homicides in Mexico reached 11,583 in 2010, and drug violence is intensifying and spreading to more states. The *Mexico Competitiveness Report* of the World Economic Forum reports that Mexico's worst showing in the Global Competitiveness Index is in the area of security and is related to organized crime, violence, and a lack of trust in the police (Hausman, et. al., 2009). The authors note that the insecurity associated with the drug violence imposes serious costs on business. Clearly, if the United States were not Mexico's northern neighbor, these costs would not exist.

4.2. China's economy is less centralized

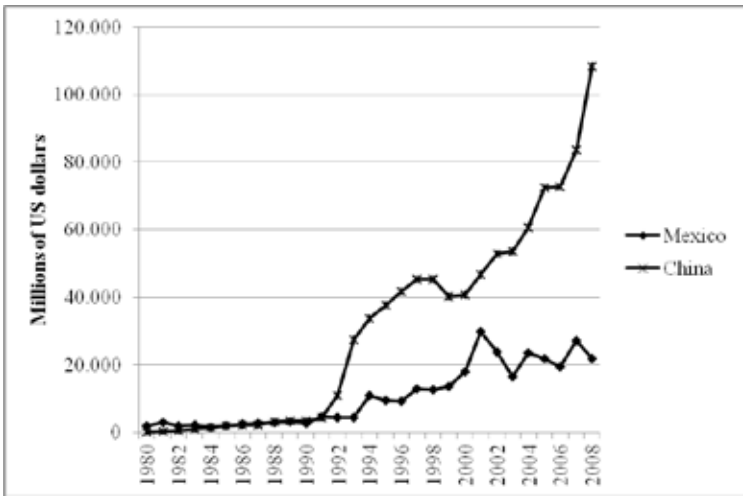
China's public administration is far less centralized than Mexico's. Local, provincial, and regional authorities have their own sources of revenue, and officials at each level of government are judged by the level above based on their ability to generate economic growth in their jurisdiction. While this is not without its own set of problems, the ability of local officials to set priorities and generate revenue streams to support them, along with the strong incentives they have to create growth, is an institutional advantage that is not present in Mexico, where local and state officials have many fewer revenue sources and their career success is unrelated to the economic performance of their jurisdiction.

The hypothesis that fiscal decentralization is key to China's success has many proponents (Montinola, et. al., 1995; and Qian and Weingast, 1997) but the extent of decentralization is disputed (Tsui and Wang, 2004). Qian and Weingast argue that it prevents predatory practices by central governments and avoids some misallocation of resources, but Tsui and Wang respond that the extent of local autonomy is constrained by central government mandates and that the cadre-management control system enforces strong vertical mandates from higher authority down to lower local levels.

The debate focuses on the ability of local governments to set priorities and to raise local revenue for implementing their priorities. While local governments have some constraints, they also have sources of revenue, particularly land sales and leases, which are unavailable to their Mexican counterparts in *municipios* and states. Land in China is state-owned, but the definition of "state" is sometimes hazy—that is, it might be the city, the province, or the national government, depending on the context (Hsing, 2010). Local authorities are able to offer land for real estate development, factory location, or other economic activities at prices that are extremely attractive to foreign and domestic investors. The consequences are quite striking if one considers the impact on foreign direct investment, in particular, and its impact on economic growth. Huang (2003), Whalley and Xin (2006), and Gereffi (2009), among many

others, have argued that FDI, foreign invested enterprises (FIE), and international supply chains have been major sources of Chinese growth. China has outpaced Mexico in its receipt of FDI (Figure 4), and has geographically diversified its FDI much more than Mexico.

Figure 4: Inward FDI in China and Mexico



Source: UNCTAD, 2010.

Table 3 divides Mexico and China into 6 regions each. Both the Chinese and Mexican regions are a rough division of provinces and states based on their physical geography. In each region, the share of national FDI is for a five-year period (2003-2007) in order to minimize the effect of one-time investments such as the purchase of a major bank or other large enterprise. Mexico's FDI is much more concentrated, even after taking into consideration the income per capita and population of the regions. The Central district (DF, Estado de México, Morelos, Puebla and Tlaxcala), for example, has 33.7 percent of the population, 36.0 percent of Mexico's GDP, and 63.5 percent of the FDI, 2003-2007. Every other region, including the border, receives a smaller share of FDI than its GDP share.

Table 3: Dispersion of Population, GDP, and FDI, by Region, 2007

Region	Percent of total population	Percent of total GDP	Percent of total FDI (2003-07)*	Y/P as a share of national level
Mexico				
Border and Sea of Cortez Baja California, Baja California Sur, Coahuila, Chihuahua, Nuevo León, Sinaloa, Sonora, Tamaulipas	0.208	0.261	0.206	1.256
Central Distrito Federal, Hidalgo, México, Morelos, Puebla, Queretaro, Tlaxcala	0.337	0.360	0.635	1.068
West Aguascalientes, Colima, Guanajuato, Jalisco	0.128	0.123	0.096	0.957
North Durango, Nayarit, San Luis Potosí, Zacatecas	0.060	0.044	0.019	0.728
Gulf Coast and Yucatan Peninsula Campeche, Quintana Roo, Tabasco, Veracruz, Yucatán	0.124	0.140	0.016	1.127
Mexican South Pacific Chiapas, Guerrero, Michoacán, Oaxaca	0.143	0.073	0.025	0.509
China				
North Central Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia	0.117	0.145	0.103	1.236
North East Liaoning, Jilin, Heilongjiang	0.082	0.085	0.074	1.032
East Central Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong	0.287	0.380	0.501	1.323
South East Henan, Hubei, Hunan, Guangdong, Guangxi, Hainan	0.276	0.260	0.262	0.942
South West Chongqing, Sichuan, Guizhou, Yunnan, Tibet	0.148	0.081	0.024	0.552

In contrast, China's capital region receives less FDI than its share of GDP, although the differences are not great. The East Central region, which includes Shanghai, Jiangsu, and Fujian, among other provinces, receives more inward FDI while the South East (Guangdong, and others) and North East receive FDI shares that are nearly equivalent to their GDP share. In general, the difference between a region's share of national GDP and its share of inward FDI is much greater in Mexico, indicating more concentration of FDI[14].

14. This holds for both the mean absolute deviation and the standard deviation of the regional differences between GDP and FDI shares.

Table 3 is not conclusive, but it does illustrate a fundamental difference in the dispersion of FDI in Mexico and China. Mexico's is disproportionately concentrated in the center of the country, in and around the capital. China's FDI, by contrast, is much larger and is dispersed more evenly across the eastern coastal regions, where access to transportation infrastructure and foreign markets are greater. Hypothetically, but worth further investigation, a more widely dispersed FDI leads to a wider diffusion of technology, less congestion of transportation and logistics in export centers, and a broader geographical distribution of the benefits of economic growth. Regardless of the benefits that dispersed inward FDI may generate, it is indirect evidence of greater decentralization of the Chinese economy. Local officials are rewarded if they generate economic growth, and inward FDI is one way to accomplish that.

5. Conclusion: Policy and geography overlap

Obviously, Mexico cannot change its location, but in theory at least, it can adopt a less centralized form of federalism. The perceived need for a strong center was created partly as a reaction to US imperialism and the dismembering of large parts of the country in the 19th Century, along with the state's nation-building policies in the post-revolutionary 20th Century as the national government tried to overcome the many languages and ethnicities of the country by forging a Mexican identity. Nevertheless, the cultural and economic presence of the US on the nation's northern border was a constant pressure and lent urgency to the formation of a central state capable of resisting its wealth and power. In that sense, "the bad neighborhood" hypothesis is responsible, at least in part, for the highly centralized structure of Mexico's public finances and the relative lack of local autonomy from the center.

Other factors are important as well: China saves 40 percent of its GDP, Mexico a little more than 20 percent; high savings allow high investment but also generate large reserves that guard against external macroeconomic shocks; China actively uses industrial policies; it imposes performance requirements on its inward FDI in order to promote technology transfer; its sheer size forces the world's leading firms to develop a presence inside the country; and the communist era eliminated most traditional economic interest groups and wiped out opposition to subsequent reforms. Some of these factors may be irrelevant; for example, the role of industrial policy is debated. The point here is not to argue that there is one factor or a simple formula for turning a desperately poor country into a rich one. As many others have pointed out, if economic growth were easy and obvious, all countries would be rich. Rather, the goal is to propose two factors that stand out when Mexico is contrasted with China.

R E V I S T A
Globalización, Competitividad y Gobernabilidad
J O U R N A L
Globalization, Competitiveness & Governability
R E V I S T A
Globalização, Competitividade e Governabilidade

GCG
GEORGETOWN UNIVERSITY universia

Promote China-Latin American Relations in the 21st Century

AREA: 2
TYPE: Theory

Promoción de las relaciones entre China y Latinoamérica en el siglo XXI
Promover as Relações entre China e América Latina no Século XXI

AUTHOR
Liu Yongtao[1]
Center for American Studies
Fudan University
ytliu@fudan.ac.cn

With the unfolding of globalization and economic interdependence in the 21st century, China and Latin American countries, though geographically and culturally distant, have increased their exchanges and contacts in a wider range of areas. China envisions its relationship with Latin American countries from strategic perspectives and stresses the importance of win-win games and mutual reciprocity. While developing further their cooperative relationship, China and Latin American countries face common challenges and need to find ways to resolve them.

En el siglo XXI, con el despliegue de la globalización y la interdependencia económica, China y los países latinoamericanos, aunque geográfica y culturalmente distantes, han incrementado sus intercambios y contactos en una gama de áreas más amplia. China aborda su relación con los países latinoamericanos desde perspectivas estratégicas y pone de relieve la importancia de estrategias beneficiosas para ambas partes y de la reciprocidad mutua. Mientras desarrollan más exhaustivamente su relación cooperativa, China y los países latinoamericanos se enfrentan a retos comunes y necesitan hallar maneras de resolverlos.

Com o desenvolvimento da globalização e da interdependência económica no século XXI, a China e os países latino-americanos, embora geográfica e culturalmente distantes, aumentaram os seus intercâmbios e contactos numa ampla série de áreas. A China planeia as suas relações com os países da América Latina a partir de perspectivas estratégicas, e destaca a importância de jogos em que todos ganham e de reciprocidade mútua. Ao mesmo tempo que desenvolvem ainda mais as suas relações de cooperação, os países da China e da América Latina enfrentam desafios comuns e precisam de encontrar formas de os resolver.

1. Corresponding Author: Center for American Studies, Fudan University; Shangai, 20043; PR CHINA

DOI
10.3232/GCG.2012.V6.N1.06
Received
03.05.2011
Accepted
01.03.2012

1. Introduction

China and Latin American countries are geographically and culturally distant and they differ in their social systems and distributions of natural resources. However, China and many Latin American countries have similar historical experiences, have the same demand for economic and social development, and have common attitudes and similar views on international affairs.

Indeed, the China-Latin America relationship has developed quickly in recent years. The two sides have been expanding their contacts and exchanges through increasingly multidimensional, comprehensive, and broad cooperation and coordination, which are founded on the shared ideas of win-win games and mutual reciprocity. China is attaching greater importance to developing its relationship with Latin America, and includes that relationship as an integral part of its overall foreign policy and strategy in the 21st century. The quickening process of globalization in today's world provides greater opportunities and prospects for promoting sound relationship between China and the countries in Latin America.

This paper consists of three major parts. The first part highlights the historical evolution of the relationship between China and Latin America and argues that, despite various vicissitudes, the relationship can survive the past and has developed quickly in recent decades. The second part provides an account of the increasing demands for improving China-Latin America relations in the 21st century, contending that a changing world and the quest of both China and Latin American countries for sustainable developments call for closer and more comprehensive cooperation and exchanges between them. The Chinese foreign policy position towards Latin America and the Caribbean in the 21st century reflects the fact that China is attaching greater strategic importance to the region. The third part of the paper analyses empirically how the idea of win-win games and mutual reciprocity has facilitated economic and social relations between China and Latin American countries, as well as the potential challenges that may affect the development of the China-Latin America relationship.

Key words
China-Latin America relations, cooperation, win-win game, mutual reciprocity

Palabras clave
Relaciones China-Latinoamérica; colaboración; estrategias mutuamente beneficiosas; reciprocidad mutua

Palavras-chave
Relações China-América Latina; cooperação; jogo em que todos ganham; reciprocidade mútua

2. History as Prologue: The China-Latin America Relationship

Despite the distances between them, Chinese and Latin American people have enjoyed a time-honored friendship. The contacts and exchanges between China and Latin America can be traced back to as early as the mid-16th century, when a trade route across the Pacific Ocean – later known as "the Sea Silk Road" – was opened between them via the Philippines (Xu, 1999). Chinese merchants took commodities such as silk, porcelain, clothes, spices, and powders to the New World and brought back materials like silver, maize, and tobacco from countries like Mexico and Peru. At one point, due to the intense silk trade the Mexican silver coins were so popular in China that they were circulated as currency along with Chinese coins.

JEL Codes
P50; F59

After the Opium War in 1840, many Chinese laborers went to Latin America and, despite hardships and difficulties, contributed to local economic and cultural developments and the fights for national independence. For generations, these laborers and their descendents played a critical role in connecting Chinese and Latin American economic relations and people-to-people friendships. Prior to the establishment of the People's Republic of China (PRC) in 1949, 13 countries in Latin America had established diplomatic ties with the Government of Republic China in Nanjing (Xu, 1999).

That said, Latin America has traditionally been regarded as the "backyard" of the United States in the Western Hemisphere, and the (re)initiation of diplomatic relations between the PRC and Latin American countries has been a comparatively recent phenomenon. Due to the US sphere of influence and other historical reasons, much of the Cold War witnessed little contact between China and Latin American countries except for Cuba, a socialist country that achieved its political independence and recognized the PRC in 1960. Many countries in Latin America, restrained by the bipolar structure of the Cold War, followed the United States and maintained their diplomatic ties with Taiwanese authority. The relationships between the PRC and these countries were thus at a standstill. It was not until the early 1970s, when the PRC and the United States decided to normalize their bilateral relations, that the biggest obstacle restraining the development of a China-Latin America relationship was removed. By the end of the 1970s, the PRC had established diplomatic relations with nearly a dozen Latin American countries, including Chile, Peru, Mexico, Argentina, Guyana, Jamaica, Trinidad and Tobago, Venezuela, Brazil, Surinam, and Barbados.

Since 1978, when it decided to open itself to the outside world and conducted its economic reform, China has taken a more cooperative approach in its foreign policy toward developing countries. For example, in its relations with Latin American countries, China proposed four major principles that were intended to guide the China-Latin America relationship. First, China should establish and develop its cooperative relationship with all Latin American countries on the basis of the Five Principles of Peaceful Co-existence. Second, in terms of expanding trade and business and economic cooperation, the China-Latin America relationship should both focus on the present footing and look forward to the future. Third, both China and Latin American countries should respect each other's cultural traditions and social values. And finally, the two sides should increase their cooperation and coordination in world affairs with mutual support and close consultation. In the 1980s, Chinese and Latin American relations witnessed a renewed development and cooperation through more channels, broader fields, and wider dimensions.

With the end of the Cold War, the process of globalization has quickened in an unprecedented way and made economic factors more prominent and significant in international relations. It has created a broad context in which both China and Latin America aspire to draw their relationship closer in order to face collectively an ever changing and uncertain world. For example, political exchanges between China and Latin America in the 1990s were promoted and strengthened through mutual visits by their leaders. In the economic aspect, China and Latin American countries increased the amounts of their mutual exports and imports, with mixed scenarios of trade surplus and deficits among them (Dong and Callejas, 2008:65).

3. Demands for Improving China-Latin American Relationships

The 21st century provides prospects for both China and Latin America to materialize their relationship. A changing global context, domestic changes in China and Latin American countries, and China's foreign policy position towards Latin America and the Caribbean in the 21st century contribute to the demand for the improvement of the China-Latin America relationship in the new millennium.

The 21st-century world continues its major transformations in several fundamental ways. Some basic features can be observed as they are unfolding in the new millennium. First, with the changes and adjustments of the world underway, peace and development continue to be mainstreams of this present age, though there are still regional/local conflicts and violence that occur around the world. Second, a trend toward multipolarity in the world is irreversible, and economic globalization is gaining momentum. And third, it is in the fundamental interests of all nations to share in the historical moment of development by addressing their common challenges while promoting the noble cause of constructing a harmonious world of human peace and stability. It can be reasonably argued that global peace and economic development in the 21st century offer both opportunities and challenges, which demand that developing countries like China and the Latin American countries to cooperate and coordinate more closely.

Domestic development in both China and Latin American countries encourages the desire for improving the China-Latin America relationship. China has repeated its determination to stick to the direction of its economic, social, and political reforms. This implies that China has chosen the route of development as its national agenda. Many countries in Latin America also seek to push forward their economic growth and social progresses. China and many Latin American countries have made national development a top priority. Other shared identities also encourage both China and Latin American countries to seek closer relationships with each other. As one commenter puts it, the shared developing country identities, similar historical experiences, and common desires for peace are the "political bases" of improving China-Latin America relations (Cheng, 2006:3).

In terms of its foreign policy in the new millennium, China maintains and pursues cooperative approaches to international affairs. As one of the ascendant powers in the world, China reiterates its commitment to the path of peaceful development and the win-win strategy in continuing its path of opening up to the outside world. It also reaffirms its cooperation and friendship with all countries on the basis of the Five Principles of Peaceful Coexistence, in the hope that the social construction of a harmonious world of durable peace and common prosperity can be made possible.

Within this context, China's foreign policy in the early 21st century has begun to attach greater importance to, and seek closer relationships with, the Latin American countries. Latin America has a long history of splendid civilizations with vast territories and abundant resources, and enjoys a good foundation for economic growth and social progress as well as huge development potentials. For Chinese foreign policy deicisonmakers, Latin American countries constitute important parts of the developing world and major forces that are playing increasingly important roles in regional and international affairs, contributing signifi-

cantly to world peace and global development. Meanwhile, many Latin American countries have been actively seeking models of national development that are suitable to their actual conditions. Latin America has witnessed political stability, sustainable economic growth, and social development, with peoples' livelihood steadily improving over the past decades.

On November 5, 2008, China issued its *Policy Paper on Latin America and the Caribbean* (PPLAC). This paper is one of the few regional policy papers issued by the Chinese government and the first one for the region of Latin America and the Caribbean; it delineates an overall blueprint for further cooperation between China and Latin America and the Caribbean, clarifies the goals of China's policy in this region, and outlines guiding principles for improving the relationship between the two sides in various fields, including politics, economics, social and cultural dimensions, agriculture, science and technology, and the environment.

Given its contents and rhetoric, the PPLAC represents several characteristics. First, it appreciates the increasingly important role that Latin American and Caribbean countries are playing in regional and international affairs. Second, it stresses the bilateral trade and economic relationships with Latin American and Caribbean countries. Third, it confirms cooperation in a wide range of fields, including international affairs. Fourth, it expresses the idea that China views its relations with Latin America and the Caribbean from strategic perspectives. It also reiterates that the one-China policy is the political foundation for the establishment and development of relations between China and the Latin American and Caribbean countries. It can be seen that developing friendly relations with developing countries, including those in Latin America and the Caribbean, is the basic stance of China's foreign policy in the early 21st century.

4. Win-Win Games in Cooperation and Challenges

When China entered the World Trade Organization (WTO) in 2001, it marked a watershed in China-Latin America relations. In terms of its trade relations with Latin America, as some commenters put it, China has undergone two stages: the stage prior to China's entering the WTO and the stage after it (Dong and Callejas, 2008:67). Before China becoming a member of the WTO, the trade relationship between China and Latin America was growing slowly. In this stage, both primary and end products were main staples in their trade and business. Having entered the WTO, China was able to quickly expand its trade business in the world market, and its relations with Latin America began "moving into a new stage" (Dong and Callejas, 2008:67). Brazil, Mexico, Chile, Argentina, and Panama become China's first five trade partners in Latin America, while a variety of Latin American countries have increased their exports to China (Inter American Development Bank, Mauricio Mesquita, 2005).

As a matter of fact, a closer China-Latin America relationship in the 21st century brings benefits to both sides, because they share similar pictures in the field of economic development. Economic reciprocity has been the most stable basis for the development of China-Lain America relations. To further promote these relations, it is necessary to rethink and redefine the ties of the two sides strategically. There are at least three interrelated aspects that can

be addressed in the analysis of mutual benefits. First, China now has an increasing demand in its domestic market for food, energy, metals, and minerals for its social and economic development in sustainable ways. This domestic demand in China benefits export-oriented countries in Latin America, which will in turn boost their economic growth and social development through their exports. Second, China has been arguably one of the few economies that have been relatively unaffected by the global financial crisis that broke out in the late 2000s, as its economy has maintained growth at the rate of 8 percent since the 1980s. And third, China's population of more than 1.3 billion people provides a huge market and great opportunities for Latin American and Caribbean countries in terms of trade and investment. China is now the main market for exports from Brazil, Chile, Argentina, Costa Rica, Cuba, and Peru. In other words, China's increasing demand for imported products from Latin America helps balance out the reduction of exports in Latin America caused by the current global financial crisis and its aftermath.

China-Latin America relations in the 21st century have shown some new features. On the one hand, the interdependence between China and Latin America has accelerated with the increase in their trade and business. China has signed agreements with Brazil, Argentina, and Chile for developing and investing in natural resources of ore, oil, and copper, and has increased its trade cooperation with oil-exporting countries like Peru. Besides being one of the most important trade partners for Brazil, Mexico, Argentina, Chile, and Peru, China has risen to be the second largest customer shipping through the Panama Canal.

In addition, the fields and scope of China-Latin America cooperation have been broadened from natural resources to high technology. China and Brazil have started cooperating in the peaceful use of atomic energy and outer space, conducting collective research on programs like earth resources exploration satellite techniques. China has conducted scientific exploration in Antarctica with Chile and Argentina; the latter has also signed an accord with China on the peaceful use of atomic energy.

Investment is another feature in the development of the China-Latin America relationship. Latin American and Caribbean countries may (re)examine the production and integration taking place in Asian countries, finding ways to join the value chains being formed there so as to boost the Asian investment in Latin America and the Caribbean. Latin America is one of the main destinations of Chinese investment abroad, but it is not enough for intended investments to be made only in traditional sectors such as mining, oil, transportations, and telecommunications. New programs and items need to be actively and creatively thought out in order to attract more investment from China and other Asian countries.

That said, there are still challenges in China-Latin America relations. Two are related to political aspect: Latin American economies have relied conventionally and heavily on the United States for a long time, and there are "uneven levels of economic development and capability between China and Latin America" (Xu, 2002:10). This gives rise to complaints about China and the United States struggling for influence in Lain America, and China's rising economic power posing "threats" to Latin America. In fact, the United States does not necessarily need to be a factor in China-Latin America relations, since they are based on reciprocity and mutual respect without targeting any third parties. As some commenters argue, China and the Latin American countries broadened their "reciprocal cooperation" without aiming

to threaten any third party's interests (Zhang, 2007:48), and "it is not necessary or likely for China to reduce U.S. influence in the West Hemisphere through elevating China-Latin American relations" (Jiang, 2005:10).

In addition, with the increasing development of China-Latin America relations, trade frictions emerge and "get prominent" (Sun and Zhang, 2007:71). One cause for the frictions, among others, is that China and the Latin American countries have similar export structures. Specifically, the low technology-valued products that China exports to Latin America, like textiles, clothes, and electronic gadgets, are similar to the products that Latin American countries export to China. Consequently there is competition for markets in Latin America, China, and possibly other countries where they intend to export their goods. As one commenter puts it, China poses a challenge to Latin America "in terms of the strategy of economic development and the elevation of industrial structure" (Cao, 2005:75). To deal with the frictions, equal dialogues, friendly consultations, and related policymaking and readjustment are needed.

The third challenge is the constant need for both Chinese and Latin American people to "deepen their mutual understandings" of each other's civilizations, cultures, political systems, and social values and beliefs (Zhang, 1994:41). As mentioned above, China and the Latin American countries are geographically and culturally distant. Progress has been made in cultural exchanges between China and Latin America in recent years, but much remains to be done (Zhu and Liu, 2008:40). The lack of deep and proper understandings of each other may give rise to negative effects on economic and political relations. Mutual understanding is a long-term endeavor that can be achieved through various programs such as university courses on Chinese and Latin American languages, history, politics, economics, culture, and diplomacy, and film, art, or music festivals organized through official and civil channels to help people on both sides to know and appreciate each other.

5. Concluding Remarks

With the process of globalization, the increasing demand for national development in both China and Latin America, and China's foreign policy and strategy, China is determined to embrace the international community and further involve itself in the process of global economic integration. Accordingly, the overall relationship between China and Latin America is bound to expand in the 21st century.

Indeed, new progress has been made in China-Latin America relations in many ways, at various levels, and across a broad spectrum of areas in recent years. The two sides have enjoyed more frequently high-level exchanges, stronger political trust, closer cooperation in areas such as economy, trade, science and technology, culture, and education, and mutual support and close coordination in international affairs. The friendly cooperation between the two sides serves the fundamental interests of their peoples. Future growth of the relationship enjoys great potential and broad prospects, and will contribute more significantly to peace and the development of mankind.

References

Cao, Nan. (2005), "Zhongguo yu lamei:jingzheng, hezuo ,yihuo 'weixie'"? (China and Latin America: Competition, Cooperation or "Threat"?) Lading meizhou yanjiu (Journal of Latin American Studies), Vol. 27, No. 1, pp. 74-76.

Cheng, Siwei. (2006), "Cong sige fangmian tantao woguo yu lamei guanxi de fazhan" (Study the Development of China-Latin American Relations from Four Aspects), Lading meizhou yanjiu (Journal of Latin American Studies, Vol. 28, No. 4, pp. 3-5.

Dong, Yinguo; Callejas, Carolina. (2008), "Zhongguo yu lading meizhou huigu yu zhanwang" (Retrospect and Prospect of China-Latin American Trade Business), Guoji shangwu yanjiu (International Business Studies), No. 2, pp. 65-70.

Inter American Development Bank, Mauricio Mesquita. (2005), "Asia and Latin America and the Caribbean: Economic links, cooperation and development strategies", 21 March.

Jiang, Xueshi. (2007), "Zhongguo lamei guanxi de sange yinsu" (Three factors in China-Latin American relations) Liaowang xinwen zhoukan (Outlook News Weekly), February 7, pp. 8-10.

Liu, Ronggen. (2002), "Dui zhongguo yu lading meizhou guanxi de kanfa" (How to further Sino-Latin American Relations), Lading meizhou yanjiu (Journal of Latin American Studies), Vol. 24, No. 5, pp. 7-10.

Sun, Xiliang; Zhang, Aijun. (2007), "Zhongguo yu lamei de guanxi :yi jingji quanqiuhua wei shijiao" (Sino-Latin American Relations from the Perspective of Economic Globalization), Xueshu tantao (Academic Exploration), No. 5, pp. 70-74.

Xu, Shicheng. (1999), "Gouzhu mianxiang 21shiji de zhongla guanxi" (Construct the 21st Century China-Latin American Relations), Guoji luntan (International Forum), No. 1, pp. 29-34.

Zhang, Aijun. (2007), "Jingji quanqiuhua shijiao xia zhongguo yu lamei de guanxi" (China-Latin American Relations in Economic Globalization Perspective", Dangzheng ganbu xuekan (Party and Carders Review), No.5, p.48.

Zhang, Qingmin. (2009), "Relations between China and Latin America", September 22, at http://world.people.com.cn/GB/8212/169570/169576/10098584.html

Zhang, Sengen. (1994), "Zhongguo he lamei guojia zhijian de guanxi: xianzhuang yu qianjing" (China-Latin American Relations: Now and Future), Lading meizhou yanjiu (Journal of Latin American Studies), No. 5, pp.38- 41.

Zhu, Hongbo; Liu. Wenlong. (2008), "Xin shiji zhongguo dui lamei de diyuan zhanlue" (China's Geo-strategy towards Latin America in the New Century), Xiandai guoji guanxi (Contemporary International Relations), No. 3, pp. 38-42.

GCG
GEORGETOWN UNIVERSITY universia

Building the New Silk Road across the Pacific. Economic and trade relations between China and Latin America after the Financial Crisis in 2008

AREA: 1
TYPE: Case

Construcción de la Nueva Ruta de la Seda a través del Pacífico. Relaciones económicas y comerciales entre China y Latinoamérica después de la Crisis Financiera de 2008
Construir a Nova Rota da Seda no Pacífico. Relações económicas e comerciais entre China e América Latina depois da Crise Financeira de 2008

AUTHOR

Zhu Hongbo[1]
Institute of International Studies Fudan University, Shanghai.
Visiting scholar Instituto Asia Pacífico, Tecnológico de Monterrey
iss@fudan.edu.cn

1. Corresponding Author: Office for Latin American Studies; Institute of International Studies; Fudan University, Shanghai, CHINA, C.P. 20043. Tecnológico de Monterrey, Campus Guadalajara; Av. General Ramon Corona 2514; Zapopan; Jalisco 45201; MEXICO

China and Latin America have had a long history of trade relations since the Silk Road across the Pacific Ocean was explored in the 16th century. In the 21st century, trade between them has grown quickly, and China has become the second-biggest trade partner of Latin America. The financial crisis in 2008 slowed this trade growth somewhat, but continued growth makes bilateral trade more important for both sides. Some challenges have arisen, including the imbalance of trade, trade structure, and investment, but trade is the cornerstone of deeper cooperation and greater potential in the future. Promoting the export of high-tech and manufactured goods and creating a better investment environment were necessary for both sides in order to build better and closer economic relations. The Cooperation Forum and Summit Conference were good platforms for future deeper cooperation, although this will still require hard work and more time.

China y Latinoamérica han mantenido una larga historia de relaciones comerciales desde que la Ruta de la Seda a través del Océano Pacífico fuera explorada en el siglo XVI. En el siglo XXI, el comercio entre estas regiones ha crecido rápidamente y China se ha convertido en el segundo mayor socio comercial de Latinoamérica. La crisis financiera de 2008 ralentizó en cierto modo este crecimiento comercial, pero el crecimiento continuado hace que el comercio bilateral sea más importante para ambas partes. Han surgido algunos retos, como el desequilibrio del comercio, la estructura comercial y la inversión, pero el comercio es la piedra angular para una colaboración más estrecha y para un mayor potencial en el futuro. La promoción de las exportaciones de alta tecnología y de bienes manufacturados y la creación de un mejor entorno de inversión fueron necesarias para ambas partes al objeto de crear unas mejores y más estrechas relaciones económicas. El Foro de Cooperación y la Conferencia de la Cumbre constituyeron unas plataformas positivas para establecer una futura cooperación más estrecha, aunque esto todavía requerirá trabajar duro y más tiempo.

A China e a América Latina têm um longo historial de relações, desde que a Rota da Seda no Oceano Pacífico foi explorada no século XVI. No século XXI, o comércio entre ambas cresceu rapidamente, e a China tornou-se o segundo maior parceiro comercial da América Latina. A crise financeira de 2008 abrandou um pouco este crescimento comercial, mas o crescimento contínuo tornou o comércio bilateral mais importante para ambos os lados. Surgiram alguns desafios, incluindo o desequilíbrio do comércio, da estrutura comercial e do investimento, mas o comércio é o pilar da cooperação mais profunda e do maior potencial no futuro. Promover a exportação de alta tecnologia e manufactura, e criar um ambiente mais propício ao investimento foram necessários para ambas as partes, de forma a construir melhores e mais estreitas relações económicas. O Fórum da Cooperação e a Conferência da Cimeira foram boas plataformas para uma futura cooperação mais profunda, embora ainda vá requerer trabalho árduo e mais tempo.

DOI 10.3232/GCG.2012.V6.N1.07
Received 03.05.2011
Accepted 01.03.2012

1. A Brief History of Economic relations between China and Latin America

1.1. Ancient Times

China and Latin America have a long history of friendly relations in term of economic, trade, and cultural exchange. Beginning in the 16th century, or the Ming dynasty in China, Chinese businessmen traded silk, china, tea, and other goods for silver, which was shipped across the Pacific Ocean from Mexico and Latin America to Manila City in the Philippines, a colony of Spain at that time. This was called the Silk Road of the Sea, or Trade of Silk for Silver. In colonial times, the production of silver in Latin America was about 100,000 -130,000 ton per year, 80% of silver was exported abroad and half of that went to China in exchange for Chinese silk and other goods, or for speculation[1]. The large amount of silver used as hard currency contributed significantly to Chinese economic development during the late Ming dynasty through the Qing Dynasty, from the 16th to 19th century[2].

Furthermore, corn, sweet potatoes, potatoes, and other vegetables were introduced to China due to the trade between China and Latin America in Manila. Instead of the traditional wheat and rice in China, which had low production, these new foods from America had higher production, which contributed to the fast growth of the Chinese population during the Qing Dynasty (from the 17th to early 20th century), from about 100 million at the end of the Ming Dynasty to more than 400 million by the end of the Qing dynasty.

1.2. The Cold War

Since the establishment of the People's Republic of China in 1949, China has had to adopt a "one-sided policy", that is, China joined the socialist camp headed by the Soviet Union and had no formal diplomatic relations with the western camp, including Latin American countries. In this context, the Chinese government adopted polices of "Developing unofficial Diplomacy between people, building up closer economic and cultural relations, and developing formal diplomatic relations step by step"[3].

China began trading with Latin America in the early 1950s, but with much difficulty. In

Key Words
China, Latin America, Economic Relations, Silk Road, 21st century

Palabras Clave
China, Latinoamérica, Relaciones Económicas, Ruta de la Seda, siglo XXI

Palavras-chave
China, América Latina, Relações Económicas, Rota da Seda, século XXI

1. Han Qi, *The Relations between Latin American Silver and Chinese Economic development in Late Ming Dynasty and Qing Dynasty, Chinese Studies about Latin America in the 21st Century*, Edited by Zhu Hongbo, Jiang shixue and Cai Tognchang, Fudan University Publishing house, Shanghai, China, April, 2007 (only available in mandarin). At that time, silver was more expensive in China than in Latin America, Europe, and other parts of the world, so some scholars thought that European businessmen just traded silver for gold with China in order to make a profit.

2. The first paper currency in the world appeared in the Song Dynasty in China in roughly the 11th century. But in the Yuan dynasty (the Mongol dynasty, about 13th -14th century), the Mongol government issued too much paper currency to cover its huge deficit, and very high inflation lead to the disappearance of paper currency in China from then on. But gold and copper coin were not plentiful in China in term of resources, so silver from America was important for promoting the market economy at that time. The Mexican silver coin with an eagle had a very great influence on Chinese currency systems, economics, and social life. It was used until 1949, when the People's Republic was built.

3. Zhang Xichang, *Three Tides of Chinese diplomatic relations with the world*, published by World Vision Publisher, 1998 (only available in mandarin).

JEL Codes
F14; O57

1950, the trade volume was less than $2 million[4]. In 1952, China negotiated a trade agreement with Chile, the first Latin American country that did such a trade deal with the P.R.C. In 1953, Mexico formed the Promotion Commission of Mexico-China Economic Relations. In 1959, the trade volume between China and Latin America reached $7.69 million. In the1950s as a whole, the total trade volume was about $30 million. This was very small, but it was a good beginning.

Against the backdrop of the Cold War, it was understandable that China focused on its relations with Cuba. In 1960, Che Guevara visited China and was able to strike an economic agreement. From 1961-1962, the trade volume between China and Cuba reached about $900 million. With other Latin American countries, the economic relations developed very fast. In 1960, the trade volume between China and Latin America reached $31 million, and in 1965, it exceeded $340 million. From 1960 to 1965, the total trade volume was $1.3 billion.

1.3. The Late Cold War and Deng Xiaoping's Reform and Openness Period

In 1972, President Nixon visited China, and good relations with the U.S. then opened the door to Latin America as well. China began to ally from a geopolitical perspective with the West in the 1970s, although not from an ideological perspective. The 1970s also saw a rising tide in the building of formal diplomatic relations between China and Latin American countries. After Cuba, Chile formed formal diplomatic relations with China in 1970, and China quickly established diplomatic relations with eleven Latin American countries, including Peru, Mexico, Argentina, Brazil, and Venezuela.

During this period, official Chinese trade delegations began to visit Latin America. From 1971 to 1979, more than fifty Chinese delegations went to Latin America, and negotiated eighteen trade agreements. By 1979, China had established trade relations with thirty-six Latin America countries, compared with only seventeen countries in 1971. The trade volume had reached $1.26 billion, compared with $130 million in 1969. From 1970 to 1979, the total trade volume reached about $5 billion[5].

In 1978, China adopted the "Reform and Open Policy", and Chinese foreign policy was changed. Deng Xiaoping, the designer of the Reform and Open Policy, stressed that Chinese foreign policy should be based on two points: supporting world peace, and developing economic relations all over the world, including the Third World[6]. In the 1980s, trade relations between China and Latin America grew steadily and quickly. In 1980, the trade volume was $1.36 billion, and in 1989, the number reached about $3 billion. Through the 1980s, the total trade volume reached $20 billion, three times of the trade volume of the 1970s.

4. All monetary amounts are in US dollars unless otherwise specified.

5. Sha Ding, *A Brief History of China and Latin America relations*, Henan People's publisher, 1986. p.282 (only available in mandarin).

6. Deng Xiaoping, *Maintaining World Peace and Developing Our National Economics, May 29, 1984,* Deng Xiaoping's Collections, Volume 3, Renmin Publisher. 1993. p.56 (only available in mandarin).

From the 1980s on, China began to cooperate with Latin America in more economic areas, including investment, cooperation of technology, and labor. In 1983, the Chinese Mechanics import and export company established Chinese Mechanics Limited Corporation in Santiago, Chile. This was the first Chinese company established in Latin America, but by 1987 there were more than a dozen Chinese companies in eight Latin American countries, and the total investment reached $36 million.

At the same time, more and more Latin American companies began to invest in China. In 1987, Chile's copper company cooperated with Beijing Copper Company and established the Jiangsheng Copper Limited corporation, which was the first Latin American investment in China.

After the end of the Cold War, the relations between China and Latin America grew more quickly. In 1997, the Bahamas and Saint Lucia established diplomacy with China, and by the end of 1998, nineteen Latin American countries had diplomatic relations with China. Taiwan was therefore in a difficult situation in Latin America because previously relations were between Taiwan and Latin America.

In the 1990s, the economic relations between China and Latin America grew at an increasingly faster pace. In 1990, the trade volume was about $1.8 billion; in 1995, it was $6 billion; in 2000, the number reached $12.5 billion. Before 1995, China had trade deficits with Latin America, but after that year it had small surpluses. The trade between China and Latin America remained balanced throughout most of the 1990s.

By 1998, China had invested about $1 billion in Latin America. China established more than 200 companies in more than twenty countries, including an iron and steel factory in Peru, a steel mine in Brazil, a fishmeal company in Chile, an oil company in Venezuela, a textile and garment company in Mexico, and an agricultural joint venture in Argentina. Meanwhile, Latin American countries including Brazil, Chile, Argentina, and Cuba invested about $3.7 billion in China.

1.4. The 21st century

In the 21st century, China began to build strategic partnerships with Latin American countries including Brazil, Mexico, Argentina, Chile, and Venezuela. These strategic partnerships were designed to build closer relations, especially closer economic relations, with regional powers in Latin America.

Chinese policy towards Latin America is focused on trade as well. Compared with the 1990s, Chinese trade with Latin America grew even more quickly, and in 2000, the trade volume reached $12.5 billion. In 2003, this number reached $26.8 billion.

In 2004, President Hu Jintao visited Brazil, Argentina, Chile and Cuba. During these visits, China signed several agreements with these four countries and delivered a speech in the Brazilian Congress titled "*Work together for friendlier and fresher China-Latin American Relations*". In this speech, President Jintao proposed that China would cooperate more in high technology with Latin America in order to change the existing trade structure, which is cha-

racterized by China importing raw materials and exporting labor-intensive products. More investment in each other would be a focus for the future, and China aimed to build more free trade areas with Latin America when the conditions were right. China would deal with trade frictions in reasonable ways, and trade retaliation measures would be avoided in order to maintain good economic relations[7]. President Jintao also proposed that the trade volume reach $100 billion in 2010. After only 3 years, this goal was achieved in 2007. The main reason why there was such a fast development of trade was the booming Chinese economy, which has needed more and more raw materials, such as iron ore, copper, oil, gas, beans, corn, timber and so on. Latin America can provide all these raw materials to China.

However a lot of problems in China and Latin America's economic relations emerged at the same time. Latin America was not satisfied with the structure of the trade and wanted to export more industrial products to China. In addition, Latin America was afraid of Chinese competition in both domestic as well as international markets, such as in the US market. After Brazil and Argentina accepted the market economy status of China in 2004, they began to complain about the dumping of Chinese goods in their domestic markets. Mexico complained about large trade deficits with China and the smuggling of Chinese goods into its domestic markets.

2. The Financial Crisis and its effects on the Chinese economy and foreign trade

During the three decades after 1978, the Chinese economy grew at a two-digit rate, but in 2008, with the deepening world financial crisis, the economic growth rate fell below 10%. At the same time, the Chinese government tried to achieve an 8% growth rate in 2009. This was considered a hard and ambitious plan with the background of the financial crisis.

The Chinese economy is driven mainly by investment, exports, and domestic consumption, the Troika of Chinese Economy. But during the past 5 years, this Troika has become greatly out of balance. Investment increased from 36% to 44%, import and export volume in national GDP increased from 44% to 60%, and the rate of domestic consumption is down from 61% to 50.7%. With the financial crisis getting worse, Chinese exports were decreasing sharply. According to data from Chinese Customs, Chinese foreign trade volume in the first month in 2009 was only $140 billion, 29% lower than in the same month in 2008.

On November 11, 2008, the Chinese government presented an Economic Stimulus Plan worth 4 trillion Chinese dollars, (about US$580 billion), focused mainly on infrastructure, especially the national railroad network. This will stimulate Chinese steel, cement, and electronics industries.

In October 2008, China planned to invest 2 trillion Renminbi in railroads: 30,000 kilometers of railroad would be building by 2010, and 12,000 kilometers of express passenger railroad

7. Hu Jintao, President of People's republic of China, *Work together for a more friendly and fresher China-Latin American Relations*, speech in Brazil Congress on November 12, 2004 Renmin Daily, November 14, 2004.

would be building by 2020. China also provided subsides for consumers to buy cars, TV sets, washing machines, ice boxes, and other appliances. These measures will benefit Chinese manufacturing industries and help them overcome the challenges of the smaller market abroad.

In the first two months of 2009, Chinese car sales began to grow, reaching 1.56 million. If this growth continues, China will overtake the US as the number one car market. China has also reformed its medical and other welfare systems, providing more financial support to these programs, especially to rural people who have less social security, medical welfare, and so on.

The recent financial crisis dealt a big blow to trade between China and Latin America. The export volume in 2009 was $90 billion, down 17.5%, and import volume was $513 billion, down 47.1%. Imports decreased faster than exports.

At the same time, the price of iron ore, oil, and other natural resource imported into China decreased sharply. In January 2009, China imported $13.8 billion, decreasing more than 50%. For example, China imported 32.6 million tons of iron ore, down 11.2%. Its importing price is $81 per ton, down 37%. China imported 12.8 million tons of oil, down 8%. The price of import is $340.9 per ton, down 53.3%. Chinese imports from Latin America mainly consisted of iron ore, copper, oil, gas, beans, corn, and timber; the lower price and rate of import will greatly affect trade relations between China and Latin America. Furthermore, some Latin American countries, such as Argentina, began to have a trade deficit with China in 2008. This will give rise to more protectionism in these countries.

Chinese businessmen are trying their best to look for new markets, while US, EU, and Japanese market are smaller and more difficult. The exchange rate is also not so good for Chinese companies, because in 2008, US and EU currencies depreciated against the Chinese Renminbi. The Latin American market is considered a potential and attractive market for Chinese businessmen.

With the stimulus plan working, the Chinese economy was recovering faster. In 2009, China achieved a growth rate of 9.1%[8], and in the first half of 2010, the growth rate was about 11.4 %[9], well above the growth aim of 8%. This is considered the bottom line by the Chinese government, because if growth is below this rate, it will be very difficult to absorb the more than five million college graduates every year, as well as the country workers who go to cities to look for jobs. China now had about 100 million migrant workers, according to a national survey in 2006.

Foreign trade was also recovering quickly. In the first half year of 2010 (from January to June), Chinese foreign trade volume reached $1354.88 trillion, increasing by 43.1%. Exports reached $705 trillion, increasing by 52.7%, and imports reached $649.8 trillion. The trade surplus was $55.3 trillion, decreasing by 42.5%[10].

8. National bureau of statistics of China, http://www.stats.gov.cn/tjdt/zygg/sjxdtzgg/t20100702_402654527.htm

9. National bureau of statistics of China, http://www.stats.gov.cn/

10. Resources, Chinese Customs website: http://www.customs.gov.cn/publish/portal

In terms of exports, the mechanics and electronics industries kept growing fast, as did traditional exports such as garments, cotton, textiles, furniture, shoes, and so on. In the first half of 2010, mechanics and electronics exports reached $417 trillion, increasing by 35.9%; this was 0.7% higher than the total export growth rate and accounted for 59.1% of total exports. Electronics exports reached $168.7 trillion, growing by 35.7%. Mechanics exports reached $141.9 trillion, growing by 36.5%. Garment exports reached $53.2 trillion, growing by 16%, 2.9 % higher than the previous five months. Textile exports reached $35.6 trillion, growing by 32.3%, 2.6 % higher than the previous five months. Furniture exports reached $15.6 trillion, growing by 33%, 6.4 % higher than the previous five months. Shoe exports reached $15.6 trillion, growing by 20.8%, 2.6 % higher than the previous five months[11].

In terms of Import, the volume and price increased together. The iron ore import reached 310 million ton, increasing by 4.1% and the price reached 111.5 US dollar per ton, increasing by 47%. Soybean import reached 25.8 million tons, increasing by 16.8 % and the price reached $442.4 per ton, increasing by 7.4 %. Mechanics import reached $302.6 trillion, increasing by 45.5%. China also imported 380 thousand cars, increasing by 45.5%[12].

In term of main trade partner of China, the first one was E.U., the trade volume of both export and import reached 219.4 trillion US dollar in the first half of 2010, growing by 37.2%. The second was U.S., reaching 172 trillion US dollar, growing by 30.2%. The third was Japan, reaching 136.5 trillion US dollar, growing by 30.2%, with a deficit 26.3 trillion US dollar and growing by 130 %. The fourth was ASEAN[13], reaching 136.49 trillion US dollar, almost the same as Japan, growing by 30.2%, with a deficit 7.3 trillion US dollar but in the previous year of 2009 China had a surplus of 0.6 trillion US dollar[14].

In the first half of 2010, Brazil became a top-10 trade partner for the first time. The total trade between China and Brazil reached $26.4 trillion, increasing by 60.3%. It ranked 10, after the US ($172 trillion), Japan ($136.5 trillion), Hong Kong ($99 trillion), Korea ($97.9 trillion), Taiwan ($69.3 trillion), Germany ($65.3 trillion), Malaysia ($35 trillion), India ($30.4 trillion), and Singapore ($27.6 trillion). Exports to Brazil reached $10.3 trillion, increasing by 100%, and imports reached $16.1 trillion, increasing by 41.1%, with a deficit of $5.75 trillion[15].

11. Resources, Chinese Customs, http://www.customs.gov.cn/publish/portal

12. Ibid.

13. ASEAN, including 10 nations in Southeast Asia such as Vietnam, Laos, Cambodia, Burma, Thailand, Malaysia, Singapore, Indonesia, Philippines, Brunei.

14. On January 2010, the free trade agreement between China and ASEAN official came into effect.

15. 中国海关统计：Resources, General Administration of Customs of the people's republic of China, http://www.customs.gov.cn/publish/portal0/tab1/info229530.htm

3. Economic and Trade relations between China and Latina America Since Financial Crisis in 2008

The financial crisis dealt a big blow to trade between China and Latin America, but not a fatal one. In fact, trade between them became more important than before.

3.1. First, better trade between China and Latin America than others

For China, from 2005 to 2009, exports to Latin America increased by 26.1%. Meanwhile, exports to Asia Pacific only increased by 11.6%, to the US by 10.2%, to the E.U. by 14.9%, and to the rest of the world by 14.3%; the global average 13.4%.Latin America was also increasingly important in terms of Chinese imports. From 2005 to 2009, imports from Latin America increased by 22.8%. Meanwhile, imports from Asia Pacific only increased by 7.1%, from the US by 10.2%, from the E.U. by 14.4%, and from the rest of the world by 14.5%; the global average was 11.7%[16].

For Latin America, exports to every part of the world except China decreased. Exports to the US decreased by 26%, to the E.U. by 25%, and to Asia only by 5%, while exports to China increased by 5%. Latin America imports from the world in general decreased by 25%, from the U.S. by 25%, from the E.U. by 23%, and from Asia by 21%, but imports from China only decreased by 16%.

3.2. Second, greater importance of China in Latin American foreign trade

Among the 17 big countries of Latin America, China ranked in the top five export markets for nine countries, including Argentina, Brazil, Columbia, Costa Rica, Chile, Mexico, Panama, Peru, and Venezuela. In terms of imports, China ranked in the top five for almost all 17 countries, except Bolivia and Honduras.

In terms of regional influence of import and export, Mexican trade with China was affected less, but trade with countries in Central America and the Andes Region was affected more. Exports from Mexico to China increased by 8%, from South America increased by 5%, and from MERCOSUR by 5%, but exports from Central America decreased by 21%, and exports from the Andes Region decreased by 24%. Chile is an exception, only decreasing 9%. Imports to Latin America from China decreased by 16% overall, and specifically to MERCOSUR by 22%, to Chile by 23%, to the Andes region and Central America by 19%, and to Mexico only by 6%[17].

In terms of share of Latin American Foreign Trade, China played a more and more important role. In 2009, Latin American exports to Asia accounted for 15% of the region's total exports, while exports to the US accounted for 40%, to the EU (27 countries) 14%, and to

16. Osvaldo Rosales, la *Republica Popular China y America Latina y el Caribe: Hacia una Relación Estratégica*, Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile, Mayo de 2010.

17. Osvaldo Rosales, la *Republica Popular China y America Latina y el Caribe: Hacia una Relación Estratégica*, Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile, Mayo de 2010.

China 7%. If this growth rateis maintained, China will become the second-largest export market of Latin America in 2014, and the second-largest import market in 2015.

In terms of share and ranking of exports for different countries in Latin America, China became more and more important in the last 10 years, especially for South American countries. In 2009, Brazil's exports to China accounted for 13.2% of its total export, ranking first; the US, ranking second, accounting for 10.2%;Asia Pacific accounted for 26.1%; the EU for 22.2%; and Latin America for 20.1%[18].

The situation was the same for Chile and Argentina. In 2009, Chile's exports to China accounted for 23.2% of its total export, ranking first; the US accounted for 11.3%, Asia Pacific accounted for 46.1%, the EU for 19.6%, and Latin America for 19.1%. Chile exported more to China and Asia Pacific than any other Latin American country, and the historically first US became the second trade partner in recent decades. Argentina's exports to China for the same year accounted for 6.6% of its total exports, ranking second. The US, ranking first, accounted for 15.3%; Asia Pacific accounted for 15.3%; the EU for 18.6%; and Latin America for 42.2%.

For most Central American and Caribbean countries, however, the US remained the most important trade partner, and China ranked a distant second. For example, Honduras' exports to China accounted for only 1.6% of its total, but exports to U.S. accounted for 40.7%. Costa Rica was one exception in Central America: its exports to China accounted for 8.8% of its total, higher than for other Central American countries.

Mexico was a special case. Its exports to China accounted for only 0.6% of total exports, while the US accounted for 87.6%, far higher than any other country in the world. For Mexican exports, Asia Pacific accounted for 2.4%, the EU for 3.8 %, and Latin America for 3.2%.

South America also imported more from China as well. Paraguay's imports from China accounted for 27% of its total imports; Chile's 11%; Argentina's 11%; and Brazil, Mexico, and Columbia's 10% each[19].

The reasons for the differences in trade situation may be derived from the differences in the countries' scenarios. Mexico's exports to China were mainly manufactured goods, as were its imports. All of these goods were focused mainly on electronics, so Mexico was less affected by the financial crisis. Mexico's exports mainly depended on the US market, and depended less on the Chinese market.

Central American countries had similar trade structures to Mexico in terms of trade with China, but Central and Latin American countries were also more vulnerable to Chinese competition than Mexico, especially in the manufacturing industry. Therefore, they were more influenced by China during the Financial Crisis.

18. Osvaldo Rosales, la *Republica Popular China y America Latina y el Caribe: Hacia una Relación Estratégica*, Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile, Mayo de 2010.

19. Osvaldo Rosales, la *Republica Popular China y America Latina y el Caribe: Hacia una Relación Estratégica*, Comisión Económica para America Latina y el Caribe (CEPAL), Naciones Unidas, Santiago de Chile, Mayo de 2010.

South America also benefited from China's booming economy and increasing need for oil, iron ore, copper, and other resources. So when China recovered from the Financial Crisis, most South American countries could also expand their export market in China quickly. But they also met similar import competition from China to other Latin American countries, even if they had better trade balance with more trade surplus form China.

For Brazil and Argentina, which had both benefited from the export of materials and agricultural produce, and dealt with the competition for manufactured goods imported to China, interests of different groups should be balanced.

But for Chile and other economies that could export energy and materials, and had less industry to be influenced by Chinese imports, could enjoy the complementary trade structure and profitable exports to China. Furthermore, Chile also achieved diversified exports to China, which included not only copper, but also promoted fish, flowers, and fruit in the Chinese market.

Table 1: Comparison of Ranking of China in Latin American Export and Import between 2000 and 2008[20]

Countries	Export 2008	Export 2000	Import 2008	Import 2000
Brazil	1	12	2	11
Chile	1	5	2	4
Argentina	2	6	3	4
Costa Rica	2	26	3	16
Peru	2	4	2	13
Venezuela	3	37	3	18
Columbia	4	35	2	15
Panama	4	22	4	17
Mexico	5	25	3	6
Uruguay	8	5	3	6
Paraguay	9	11	1	4
Ecuador	9	13	2	10
Bolivia	10	12	6	8
Honduras	11	35	7	18
Nicaragua	14	19	4	17
Salvador	16	35	5	18
Guatemala	18	30	4	15

20. Ibid, the country order was arranged by the author.

3.3. Third, better prices for South American exports

When the financial crisis deepened, the prices of energy, materials, and agricultural produce decreased sharply. South America, which exported most of them, met great challenge. In 1929, the economic depression that derived from the US caused a sharp decrease in prices, and a big shrinking of the export market for most Latin American countries. Most of them sank into economic depression and political chaos. Would history repeat itself?

Fortunately, this second financial crisis was controllable and manageable, and most countries recovered quickly, including China. When the Chinese economy got better, more goods were imported, such as iron ore, oil, soybeans, and copper. The natural resource price increased at the same time, and South American countries that exported such goods benefited a lot from both the higher prices and increased imports to China. Since the 21st century began, South American economies grew more quickly than before, partly due to this price increase of natural resources, which was mainly driven by Chinese needs[21].

Argentina exported most of soybeans to China, Brazil exported iron ore, Venezuela exported oil, and Chile exported copper. The prices of these good all increased very quickly from their low points during the financial crisis. For example, the price of copper decreased sharply from about $4 per pound to about $2 per pound during the crisis. At the end of 2009, the price had rebounded to about $3 per pound. Most of the outcome of Chilean foreign trade was from copper exports, and about 20% of those copper exports in 2008 went to China[22].

In terms of the increased rate of volume and price for Chinese imports, the price rate was far higher than volume rate, especially for mine resources and energy, which were the main exports of South America to China. For example, the import of copper and iron ore increased only about 8% in volume, but their prices increased by 93.1% and 48.1%, respectively, from January to May in 2010.

Table 2: Volume and Price of Chinese import from January to May in 2010[23]

Commodity	Volume in million tons	Increase rate	Trade sum in billion dollars	Increase rate
Crude oil	95.7	29.3%	54.28	122.3%
Iron ore	260	8.4%	27.8	48.1%
Copper	1.9	8.2%	14.2	93.1%
Waste metal	5.59	-34%	7.67	99.7%

21. *Chinese economy helping Latin America out of financial crisis*, October 22, 2009, Economic office of Consulate General of China to Sao Paulo, Brazil (only available in mandarin). http://stpaul.mofcom.gov.cn/aarticle/ztdy/200810/20081005844237.html

22. *China playing the key role in Chilean economic recovery*, report from newspaper *Strategy* of Chile, October 26, 2009, Economic office of Embassy of China to Chile (only available in mandarin). http://cl.mofcom.gov.cn/aarticle/jmxw/200910/20091006584746.html

23. Chinese Customs website: http://www.customs.gov.cn/publish/portal0/tab1/info229530.htm.

4. Challenges for trade relations between China and Latin America

At the same time, there were some big challenges for trade relations between China and Latin America, including trade balance and trade conflicts, trade structure, and investment.

4.1. First, the imbalance between Latin American countries for the trade balance

Generally speaking, China and Latin America had a balanced trade, with neither too much deficit nor surplus between them. In 2008, Latin America was in deficit, and then had a surplus in 2009. But in terms of the regional trade balance, there were big difference between Mexico and Central America, which had deficits with China, and South America, which had a surplus.

With the financial crisis getting deeper, more trade conflicts arose. From 2008 to 2009, 58 anti-dumping cases were filed by Latin American countries against China. Brazil and Argentina filed the most: Argentina initiated 33 cases total, including 20 against China, while Mexico only initiated 2 anti-dumping cases total, both against China. Among these cases, most were against the import of iron and steel, textiles, shoes, electronics, cars, and tires – both labor-intensive and high-tech products.

Table 3: Number of Anti-dumping cases filed by Latin American countries from the fourth quarter of 2008 to the fourth quarter of 2009[24]

Country	Argentina	Brazil	Columbia	Mexico	Peru
Total	33	11	7	2	5
Against China	20	6	5	2	1

On September 11, 2009, the Argentinan and Brazilian governments began anti-dumping measures for shoes and tires from China. Brazil put a $0.75 tax per kilogram on Chinese tires, and put a limited price of $12.47 on shoes from China[25]. In the first half of 2009, Peruvian businessmen complained that the men's suits from China flooded its domestic market with very low prices, which were about six times lower than the domestic market prices[26].

4.2. Second, unbalanced trade structure

In terms of trade structure, China mainly imported from Latin America iron ore, soybeans, copper, crude oil, pulp, timber, waste metal, meat, and hide; it mainly exported manufactured goods such as electronics, mechanics, garments, and textiles.

But in terms of countries and regions, the trade structure was very different. Most South

24. Bown, Chad P. "Global Antidumping Database", www.brandeis.edu/chown /global-ad/

25. http://ar.mofcom.gov.cn/aarticle/jmxw/200909/20090906516162.html (only available in mandarin)

26. http://pe.mofcom.gov.cn/aarticle/ztdy/200909/20090906518644.html (only available in mandarin)

American countries exported mine resources, energy, and agricultural produce. Mexico and some Central American countries exported manufactured goods and high-tech goods, such as integrated circuits and office equipment.

Table 4: Top 5 exports of Latin American countries from 2006 to 2008[27]

Country	Top 5 exports and their ratio to total	First export and its ratio to total	Second export and its ratio to total	Third export and its ratio to total	Fourth export and its ratio to total	Fifth export and its ratio to total
Brazil	81%	Iron ore 44	Soybean 23	Crude oil 6	Iron 5	Pulp 3
Chile	93%	Copper 50	Copper ore 31	Pulp 6	Iron ore 3	Meat 2
Argentina	93%	Soybean 55	Oil soybean 24	Crude oil 10	Hide 3	Poultry 2
Peru	83%	Copper ore 39	Meat 16	Crude oil 10	Lead ore 9	Iron ore 8
Costa Rica	99%	Integrated circuit 96	Electronics parts 1	Semi-conductor 1	electrical resistor 0.3	Electronics 0.2
Columbia	97%	Crude oil 50	Metal alloy 40	Waste metal 5	Hide 3	Dairy 0.5
Panama	78%	Shipping 39	Hide 16	Meat 13	Fish 5	Waste plastics 4
Mexico	37%	Integrated circuit 13	Copper ore 8	Office equipment 7	Compressor 5	Semi-conductor 5
Uruguay	81%	Soybean 46	Pulp 13	Wool 9	Tallow 8	Hide 9
Paraguay	81%	Cotton 31	Wood 26	Hide 24	Waste plastics 7	Waste non – metal 5
Ecuador	98%	Crude oil 94	Waste non – metal 3	Timber 1	Cosmetics 0.5	Meat 0.5
Bolivia	82%	Tin ore 27	Zinc ore 19	Crude oil 17	Timber 12	Metal ore 7
Honduras	92%	Tin ore 34	Waste non – metal 33	Lead ore 10	Plastic scrap 8	Underwear 7
Nicaragua	85%	Waste non – metal 41	Plastic scrap 19	Fish 9	Underwear 8	Hide 7
El Salvador	96%	Compressor 54	Waste non – metal 38	Under wear 2	Textiles 2	Plastic scrap 1
Guatemala	94%	Sugar 42	Crude oil 23	Tin ore 14	Waste non – metal 8	Plastic scrap 6
Caribbean	89%	Aluminum 65	Timber 9	Waste non – metal 7	Metal ore 4	Shipping 4
Dominican Republic	87%	Iron 68	Waste non – metal 11	Electronics 8	Office equipment 2	Electronics parts 2
Cuba	100%	Nickel 71	Sugar 20	Metal ore 1	Crude oil 1	Waste non – metal 1

27. Comisión Económica para America Latina y el Caribe (CEPAL), sobre la base de Nacional Unidas, Base de datos estadísticos sobre comercio de mercaderias (COMTRADE).

4.3. Third, the imbalance of investment from China to Latin America

Until 2009, Chinese investments to Latin American and Caribbean countries amounted to $41 billion and accounted for 157% of the total investment abroad. But almost 95% of that investment went to two small islands in the Caribbean: the Cayman Islands and the British Virgin Islands, both famous tax havens.

In contrast, investments to most Latin American countries were only a very small part. For example, investments to Brazil, Peru, Argentina, and Venezuela accounted for less than 1% each.

In terms of investment structure, most investment went to automobile, mine, iron, office equipment, commercial, and paper industries. There were no large investments in infrastructure, high-tech industries, or others that could improve the industries and create more employment. China tended to invest in mine and other industries that could expand their market in Latin America.

Table 5: Investment of China to Latin America by countries 2008-2009[28]
(Top 10 countries, by million US dollars)

Country and Region	Total investment before 2009	Investment in 2009	Percentage
Total of world	220,000	43,000	
Latin America and Caribbean	41,179	8,000	100%
Cayman Island	27,682	7,354	67.2%
British Virgin Islands	11,807	1,330	28.7%
Brazil	289	72	0.7%
Peru	279	85	0.7%
Argentina	213	39	0.5%
Venezuela	176	20	0.4%
Mexico	175	2	0.4%
Ecuador	90	1	0.2%
Panama	77	10	0.2%
Cuba	72	0	0.2%

28. http://www.mofcom.gov.cn/ (only available in mandarin)

Table 6: Investment of sector for China to Latin America[29]
(Investment by million US dollars; employment by person)

Country	Main Sectors of investment	2003-2008 Total investment	Investment in 2009	2003-2008 Total employment	Employment in 2009
Argentina	Automobile, whole-sale and retail	519	0	2142	0
Brazil	Automobile, iron, mine, office equip-ment, oil and gas, paper, wholesale	8,548	5,137	27,695	7,352
Mexico	Automobile, electro-nics, office equip-ment, tele-communi-cation	1,079	48	5,842	175
Chile	Financial service, iron, Manufacture	37	0	81	0
Peru	iron, Manufacture, whole sale and retail	4,555	279	6,391	304
Columbia	Automobile, Timber, tele-communication	242	4	1,231	20
Bolivia	Metal, wholesale	2	0	13	0
Venezuela	office equipment, oil, Tele-communication, Information service, financial service	715	31	1,241	44
Cuba	Home electronics, Manufacture	0	52	0	694

All three issues – balances of trade, trade structure, and investment –had big impacts on bilateral relations between China and Latin America.

First, more protectionism for domestic markets was emerging in Latin American countries. Some countries, such as Mexico, Brazil, and Argentina, wanted to protect their labor-intensive industries from Chinese competition in order to secure jobs and get political support from both industry and laborers. Brazil, Mexico, and others were adopting harder and harder policies against Chinese goods, such as higher tariffs, anti-dumping measures, and other limitations, Conflicts thus increased in recent years.

Second, these imbalances gave rise to difficulties in financial and monetary cooperation. In order to balance these imbalances, Brazil and other countries began to doubt the policy of the Chinese exchange rate and want to increase investments from China in high-tech industries. Argentina and others cooperated with China in local currency agreements, which will impact future international and financial systems.

29. División de Desarrollo Productivo y Empresarial de la CEPAL.

Third, these kinds of trade issues had become politically thorny problems for some Latin American politicians. The kind of policy that should be applied to China became both an international and domestic issue, and politicians had to find a balance between the different political groups.

Furthermore, Latin America had to meet the challenges of international cooperation. Traditionally, Latin America was connected more with Europe and North America politically, economically and culturally. But now, influence from the East and Asia-Pacific has become more powerful than ever, especially in the economic dimension. How to deal with it was a big challenge all over the continent.

5. The Future of relations between China and Latin America: Strategic partnership?

From 2000 on, trade between China and Latin America witnessed the most rapid development for 10 years in the history. Even during the financial crisis period, it still went on to grow with a faster pace than other regions. There were two reasons for this development, that is, China's booming economy and the complementary structure of trade between China and Latin America. It is time to ask, what kind of future partnership will there be?

In November 2008, the Chinese government released the white book *Chinese Policy towards Latin America and Caribbean.* In this book, the Chinese government proposed that cooperation with developing countries is the cornerstone of Chinese diplomacy, and the Chinese government will develop an all-round partnership of equality, benefiting each other and developing together with a strategic perspective[30].

President Hu Jintao also stressed during his visit to Latin America in 2008 that economic development is the most important challenge for both China and Latin America, so they should deepen the business and trade cooperation, focus on better trade structure, find a balance between trade volume and quality, promote investment on both sides, and make better policy to support cooperation[31].

In May 2010, a report was given by CEPAL, and it was proposed that it is the right time to make progress in the relations between China, and Latin America and the Caribbean region. The proposal called for higher quality relations and strategic partnerships. First, Latin America should diversify its exports with more high-tech manufactured goods, rather than just energy, natural resources, and foods. Second, both countries should promote investments, especially for China taking advantage of its huge foreign currency reserve to invest in the

30. Xinhua Net, Reports on November 5, 2008, (available only in mandarin) http://news.xinhuanet.com/newscenter/2008-11/05/content_10308177.htm

31. Hu Jintao, *Building together all-round cooperation partnership between China and Latin America in the new era,* Speech in Congress of Peru, Lima, Peru, November 20, 2008 (only available in mandarin) http://www.fmprc.gov.cn/chn/pds/gjhdq/gj/nmz/1206_7/1209/

technology development, modern industry, and export of Latin America. Third, the Latin American and Caribbean region should develop relations with China with concerted policy and actions, as in the Chinese government released white book *Chinese Policy towards Latin America and Carrie* in 2008. Last, it was proposed that leaders should prepare for an Summit conference between China and Latin America, with technical dialogue to promote trade and investment between them[32].

Compared to the policy of China, the proposition of CEPAL was similar in that it focused on better trade structure, more investment, government policy support, and strategic partnership. Both sides had come to some consensus that it was time to push the relations quicker and better, especially during a period of such financial crisis and newly transformed world economic and trade structure.

In my views, cooperation between China and Latin America faces both opportunities and challenges; we should take full advantage of this historic time to build a new Silk Road across the Pacific Ocean. The following points would be the foci in our future relations.

5.1. First, economic and trade cooperation was the cornerstone of bilateral relation that was pushing the development of political, cultural, and international cooperation

For China, its booming economy, scarce resources, and limited market drove the government and businessmen to look for more energy, mines, agricultural produce, and markets all over the world, including in Latin America, Africa, and other regions. In Latin American and the Caribbean, there were different governments – rightist, central-leftist, and leftist – with different foreign policy. The Chinese government tried to keep good relations with all these countries despite the range of ideology, culture, and diplomacy.

For Latin America, China was very far away both physically and culturally, and it was a complete newcomer in only one decade's time. But China quickly became one of the most important trade partners, well above the traditional partners such as Japan, the EU, and the US. This was a historical change and gave rise to more political cooperation, cultural exchanges, and more trade frictions as well.

Recently, top leaders from China and Latin America visited each other more frequently than any other period. Each year several presidents from this region visited China, and the Chinese president, vice president, premier, and other top leaders visited several Latin America countries nearly every year. Chinese presidents have visited almost every main power in the region since this century began, including Mexico, Columbia, Peru, Chile, Argentina, Brazil, Venezuela, and Cuba. In contrast, former US President Bush only visited Latin America a few times in his administration of eight years, mostly to attend the APEC summits hosted by Latin American countries.

32. Osvaldo Rosales, *La República Popular China y América Latina y el Caribe : Hacia una Relación Estratégica,* Comisión Económica para América Latina y el Caribe (CEPAL), Impreso en Naciones Unidas, Santiago de Chile, Mayo de 2010.

5.2. Second, recent relations were only the beginning; deeper and closer cooperation will be on the horizon soon

The financial crisis in 2008 slowed the development of trade on both sides, but the importance of trade partners for either side was bigger than before. Brazil became a top-ten trade partner for China for the first time in history during the first two quarters of 2010. China became the second trade partner for Latin America after only the US in terms of single-country trade, and first export market for Brazil and Chile in 2009.

With Chinese and Latin American economies recovering quickly from the financial crisis, the trade relations will develop faster, with bigger share in both markets, more investment in each other, and closer political, cultural, and international cooperation.

Both sides are benefiting from this cooperation. China is securing its provisions of energy, foods, and mine resources, as well as finding new markets. Most Latin American countries, especially those in South America, keep their financial and foreign reserve sound with more exports to China and better trade conditions in this financial crisis.

5.3. Third, the trade structure was complementary and beneficial for both sides, but unsustainable for some Latin American countries and will take some time to improve

Generally speaking, the trade structure is complementary, such that Latin America exported natural resources, energy, and food, and imported electronics and other manufactured goods. In my view, exporting these products was not the main reason for their underdevelopment.

Looking back in history, Argentina had a similar trade relation with Britain, in which Argentina exported beef, wheat, wool, and hide to Britain, and imported manufactured goods with large investments in infrastructure from Britain in the late 19th and early 20th centuries. This period was the best time for Argentina's economy, when it was the richest country in the world and had a higher GDP per capita than most European countries. Then after the Second World War, most European agriculture recovered quickly, and Argentina lost its traditional export market.

Until now, Canada, Australia, and the US export their mine resources and foods to the world, and Arab gulf countries became rich nations with export of oil. In the case of trade structure between China and Australia and the US, the Chinese import of mine resources and food accounted for a very large share.

But for some large countries in this region, this contracture is unsustainable. Even though the exports stimulated economic development, the incomes from the export of oil, iron ore, copper, and soybeans went to big companies, big farm owners, and their shareholders; the common people benefited much less. These exports also brought less employment to the most needy and vulnerable social classes.

In fact, some Latin American countries were not satisfied with these exports, or with the import of labor-intensive goods such as shoes, garments, and textiles, which could have provided a lot of jobs. This was not a trade issue, but also a political and social issue, especially for votes and elections.

For China, the most important goal was to improve its export structure, producing fewer labor-intensive goods and more high-tech manufactured goods. They should compete with Japan, the EU, and the US in Latin American markets and world high-tech markets, but not compete with Latin American in its domestic labor-intensive market.

But this process will take some time to improve the trade structure for both sides. Latin America, especially South America, will continue to take advantage of the growing Chinese market for energy, food, and mine resources. China will take a lot of time to improve its export structure, not only to export more high-tech goods, but also to absorb the abundant domestic labor force, which consisted of more than 100 million migrant workers, the same as the population of Mexico.

With economic development and more labor needs, there have not been enough laborers in China since 2008. The salaries of workers are increasing, and some of the factories that need large number of labors are moving away from China. This will influence the trade between China and Latin America in the future.

5.4. Fourth, more investments from both sides should be the focus

Except for investments to Caribbean tax havens, investments have been very small for both sides. The Chinese government encouraged investments from the world, which were mainly from Hong Kong, Taiwan, Singapore, Japan, South Korea, Southeast Asia, the US, the EU, and other regions and countries. Latin American investment was welcomed as well.

In the late 1990s, the Chinese government began to urge Chinese companies both public and private to “go out”, that is, invest abroad and pursue internationalization. The public companies usually invested in energy, mine resources, and infrastructure; and the private companies focused on the manufacturing sector, such as electronics, automobile, office equipment, and so on.

Chinese companies met lots of challenges in Latin America, including the business environment, cultural difference, and political and legal stability. For example, some businessmen in Latin America paid more attention to higher taxes, less tax reduction, the high cost of water and electricity, the legal difference between national level and government level, the difficulty of getting visas for employees, the unskilled and unstable employment force, complicated customs procedures, corruptions of local officials, and local securities[33].

33. Consulate-General of the People’s Republic of China Tijuana, Seminar of Chinese Businessmen and companies hosted by Consulate-General Tijuana, April 19, 2010 (only available in mandarin) http://tijuana.chineseconsulate.org/chn/hqhr/t683316.htm

Pubic companies from China faced different environments and challenges, especially due to the influence of the political relations between China and Latin America. Large public companies played a very important role in investment abroad, with more government support and more financial resources, especially in infrastructure, mine resources, and energy. But at the same time, they were also put into an unfavorable position because of their government background. More cooperation and trust were badly needed between Chinese and Latin American governments.

5.5. Fifth, a Summit conference between China and the Latin America and Caribbean region is necessary and possible, but more effort and time are needed

In 2000, the China-Africa Cooperation Forum was built, and the China-Africa Summit was held in Beijing in 2006; this is a good example of such cooperation.

As said above, government cooperation was necessary for more investment and better trade relations. Why not have a China-Latin America Cooperation Forum and a China-Latin America Summit?

In February, 2010, the Latin American and Caribbean Unity Summit was held in Cancun, Mexico, and proposed that the Latin America and the Caribbean Community would be formed. This will lay a good foundation for future cooperation between China and this region.

But we also should face the reality that there are lots of political, economic, and international factors that will influence future cooperation. Latin American and Caribbean countries have different national interests, political situations, ideologies, economies, trade relations with China, and diplomatic relations. More efforts and time are needed in the future for the concerted policy and actions that are necessary in foreign relations.

At the same time, the Chinese government should also have a different policy towards different Latin American and Caribbean countries. South America, Mexico, Central America, and the Caribbean have totally different trade models and interests with China, and no single policy is enough to deal with the increasingly complicated relations between them.

Last but not least, the triangle relations between China, Latin America, and the US should be put into consideration, since the cooperation of the US is necessary and inevitable in this region. A successful trade and investment cooperation will bring prosperity, peace, and better welfare for both Chinese and Latin American people, which will consolidate the new democracy in this region. It is in the national interest of the US, and helps with its diplomatic aims in this region as well.

5. Conclusions

China and Latin America have had a long history of trade relations since the Silk Road across the Pacific Ocean was explored in the 16th century. In the 21st century, the trade between them grew quickly and China became the second trade partner of Latin America. In 2008, the financial crisis slowed the trade growth, but continued growth makes bilateral trade more important for both sides. Some challenges were faced, including the imbalance of trade, trade structure, and investment. Trade is the cornerstone for deeper cooperation and great potential is foreseeable in the future. Promoting high-tech and manufactured goods exports and a better investment environment is necessary for both sides in order to build better and closer economic relations. A cooperation forum and Summit conference would be good platforms for future deeper cooperation, although they need hard effort and more time.

R E V I S T A
Globalización, Competitividad y Gobernabilidad
J O U R N A L
Globalization, Competitiveness & Governability
R E V I S T A
Globalização, Competitividade e Governabilidade

GCG
GEORGETOWN UNIVERSITY universia

China's Move up the Value Chain. A Framework for Analysis*

AREA: 1
TYPE: Case

La escalada de China en la cadena de valor. Marco de análisis
O movimento ascendente da China na cadeia de valor. Uma Base para Análise

AUTHOR
Edy Wong[1]
Centre for International Business Studies
School of Business, University of Alberta, Canada
edy@ualberta.ca

1. Corresponding Author: School of Business; University of Alberta; Centre for International Business Studies; Edmonton; CANADA; T6G 2R6

This paper analyzes China's efforts to move up the value chain with a new theoretical framework that looks at both supply- and demand-side factors. While China can impact its productive capabilities directly through government policy and firm investment, market conditions and value chain relations are not so amenable. China's latecomer status puts it at a disadvantage in forming its own international value chains. However, its fast-growing domestic market affords China a unique opportunity to cultivate its own value chain and competitiveness based on familiarity with consumer preferences and demands at home.

Este documento analiza los esfuerzos de China para escalar en la cadena de valor con un nuevo marco teórico que analiza factores tanto desde el punto de vista de la oferta como de la demanda. Mientras que China puede afectar sus capacidades productivas directamente a través de la política gubernamental y de la inversión empresarial, las condiciones del mercado y las relaciones de la cadena de valor no son tan flexibles. El hecho de que China sea la "nueva incorporación" la sitúa en desventaja en cuanto a la formación de sus propias cadenas de valor internacionales. Sin embargo, su mercado interior de rápido crecimiento brinda a China una oportunidad única para cultivar su propia cadena de valor y competitividad en base al conocimiento de las preferencias y de las demandas de los consumidores en el país.

Este estudo analisa os esforços da China para subir na cadeia de valor, com uma nova base teórica que assenta em factores do lado do fornecimento e também da procura. Embora a China possa causar impacto directamente nas suas capacidades de produção, através de políticas governamentais e do investimento das empresas, as condições de mercado e as relações da cadeia de valor não são as mais adequadas. O estatuto de último a chegar da China coloca-a em desvantagem para formar as suas próprias cadeias de valor internacionais. Contudo, o seu mercado doméstico em rápido crescimento proporciona à China uma oportunidade única para cultivar a sua própria cadeia de valor e competitividade com base na familiaridade com as preferências dos consumidores e da procura doméstica.

* The author is grateful for the invaluable comments by anonymous referees on the original draft of this paper.

DOI
10.3232/GCG.2012.V6.N1.08

Received
03.05.2011

Accepted
01.03.2012

1. Introduction

China's emergence as a global economic power has led to a realignment of global economic forces and relations. Within a period of 20 years, China has become the largest exporter and the second largest economy in the world. The rising volume of exports from China has transformed international trade and corporate value chains in a fundamental manner. However, until recent years, much of China's exporting has been characterized by goods at the lower end of the international value chain, with relatively few technological inputs from domestic Chinese firms. Not surprisingly, despite their burgeoning volumes since the early 1980s, profit margins for Chinese exports have remained relatively low. While such inferior profit margins are commensurate with China's position in the international value chain, they nevertheless represent a barrier to China maximizing its gains from trade and future economic development. Consequently, recent improvement in China's technological capability has engendered a strong desire to move up the value chain and reduce its reliance on the manufacturing of commoditized manufactured goods and the assembly of high technology products for multinational enterprises (Soderman, Jakobsson and Soler, 2008).

Indeed, a move up the value chain through innovations is now viewed as a crucial strategy to increase China's gain from trade and its long-term competitiveness. This strategy is consistent with the general thesis that upgrading the value chain of an economy by producing better products, increasing business efficiency, and entering into more skill-intensive industries is a necessary and important strategy for increasing an economy's global competitiveness (Porter, 1990). Accordingly, efforts to encourage higher value added activities and industrial innovations have become central to China's economic strategies, as seen in key policy documents such as the last two National Five-year Plans, promulgated in 2006 (Sleigh and Von Lewinski, 2006), and 2011[1] (Xinhuanet, 2011), as well as various industrial policies aimed at increasing R&D expenditures in China through local contents, mandatory joint venture, and technology transfer legislations (Hout and Ghemawat, 2010, p.97).

In addition to national development policy, the impetus for Chinese firms to move up the value chain is found in the evolution of market forces. Recent appreciation in the Chinese currency (RMB) and increases in labor costs, along with greater technological competency and market experience, have set into motions economic forces that compel Chinese firms to move up the value chain as their cost competitiveness erodes (Financial Times, 2006). Specifically, higher wages and a rising RMB will ineluctably diminish China's competitiveness in traditional labor- intensive manufactured goods, thereby encouraging its firms to switch to more sophisticated goods with higher technology contents and profit margins. An appreciating RMB will also reduce the cost of imported technology and intermediate goods, thereby easing the capital cost of moving up the value chain. How this trend plays out will have implications for the position of Chinese firms in the global economy as well as the continued economic development of China.

Key words
China, Development, Global, Innovations and Value chain

Palabras clave
China, Desarrollo, Global, Innovaciones y Cadena de valor

Palavras-chave
China, Desenvolvimento, Global, Inovações e Cadeia de valor

JEL Codes
P21; O53

1. The 11th Five-Year Plan calls for the building of competitive advantages based on science, technology, and innovation, raising the R&D-to-GDP ratio from about 1.3% in 2005 to 2.5% by 2020. The 12th Five-Year Plan calls for a target R&D-to-GDP ratio of 2.2% and 3.3 patents per 10,000 people.

The aim of this paper is to provide a framework for analyzing and assessing China's strategy to upgrade its value chain. While much has been written about the factors underlying China's attempt to upgrade its value chain, both favorable and unfavorable, this paper will put these factors in a consistent framework for better understanding and analysis. Specifically, factors pertaining to China's attempt to move up the value chain will be classified as either supply-side or demand-side determinants in an effort to analyze the interplay between market relations, technical issues, and government policies. The results of our analysis also have implications for Latin America as it increases its participation in the global value chain.

2. Recent Developments in China's Value Chain[2]

Notwithstanding China's emergence as the factory of the world in relatively short order (Wilson and Purushothaman, 2003), a move up the value chain will present some novel challenges to Chinese firms. Until recent years, low cost, standardized, and commoditized products characterized China's growing exports. China's export strategy was one of cost leadership (Midler, 2009). Most Chinese exporters competed on the basis of price and did not differentiate their products in terms of "form, features, performance quality, conformance quality, durability, reliability, reparability and style" (Kotler and Keller, 2006). These factors are of crucial importance further up the value chain, so a departure from this approach is necessary if China was to upgrade its position. Chinese exporters must adapt and acquire the requisite technical and marketing skills if they are to compete successfully up the value chain.

In general, moving up the value chain can take one of two forms. Chinese firms can attempt to capture greater production value by either (1) producing more sophisticated goods or performing functions higher in the value chain, or (2) expanding into new products and market spaces where the value added and profit margins are greater. It appears that China has begun to do both in recent years. This nascent move up the international value chain is seen in recent changes in China's production mix as reflected in its export composition. Specifically, many point to the rising significance of machinery, intermediate goods, and telecommunications equipment in China's exports as an indicator of its movement up the value chain (Cui and Syed, 2007). This trend is seen in Table 1, where primary exports as a percentage of China's total exports have declined from 50% to a mere 5% between 1980 and 2008. The emerging prominence of manufactured exports is also accompanied by a decline in light textiles exports as a percentage of total manufactured exports, from 44% to 19%, and a rise in intermediate goods such as machinery and transport equipment, from a miniscule 9% to 50%. To the extent that production of machinery and transport equipment requires more technological and process skills than that of textiles, a movement up the value chain can be said to have occurred in China since the late 1990's.

2. Discussions in this section are intended only to provide a background rather a thorough review of China's trade structure.

Table One: Compositions of China's Exports, 1980 - 2008 (100 million RMB)

				Components of Manufactured Exports		
Year	Total	Primary	Manufactured	Chemicals	Light textiles	Machine and transport equipment
1980	181.19	50%	50%	12%	44%	9%
1985	273.50	51%	49%	10%	33%	6%
1990	620.91	26%	74%	8%	27%	12%
1995	1487.80	14%	86%	7%	25%	25%
1996	1510.48	15%	85%	7%	22%	27%
1997	1827.92	13%	87%	6%	22%	28%
1998	1837.09	11%	89%	6%	20%	31%
1999	1949.31	10%	90%	6%	19%	34%
2000	2492.03	10%	90%	5%	19%	37%
2001	2660.98	10%	90%	6%	18%	40%
2002	3255.96	9%	91%	5%	18%	43%
2003	4382.28	8%	92%	5%	17%	47%
2004	5933.26	7%	93%	5%	18%	49%
2005	7619.53	6%	94%	5%	18%	49%
2006	9689.36	5%	95%	5%	19%	50%
2007	12177.76	5%	95%	5%	19%	50%
2008	14306.93	5%	95%	6%	19%	50%

Source: China Statistical Yearbook, 2005, 2006, and 2009.

One consequence of China's move up the value chain has been its manufacturing trade surpluses with the US and EU. Indeed, China is now the largest exporter of manufactured goods to the US, and the EU is China's largest manufacturing export market since 2008. Growth in the machinery and transport sectors has consistently outpaced other export categories during the past five years. An important element of China's trade surplus with the US has been its rising exports of Advanced Technology Products (ATP) to the US. By one estimate, the US' "ATP deficits with China account for more than the total US losses and are also larger than the total global surplus in Intellectual Property royalties and fees of all US-incorporated firms. ...The number of distinct ATP in which US-based producers enjoy a surplus with China declined from 287 in 2001 to 225 in 2008; the number of Chinese-produced ATP with surpluses increased from 312 in 2001 to 328 in 2008" (Cui and Syed. 2007). Leading this growth in China's ATP exports is its leading telecommunications equipment maker Huawei Technologies Co. Ltd. (hereafter Huawei). This company has developed an international presence and has seen its foreign contracts increase from $244 million in 2001 to $4.8 billion in 2008. Today, Huawei has 37,000 employees in 40 countries, 18,000 of whom are involved in R&D (Miller, 2006b). More importantly, Huawei is the recipient of the 2010 Corporate Use of Innovation Award from *The Economist* (*Financial Express*, 2010), attesting to the rising sophistication and competitiveness of Chinese firms in the telecommunications sector. However, notwithstanding the growing competitiveness of Chinese high technology firms, much of the exports of technology goods from China have remained the domain of foreign companies,

who account for 85 percent of China's high technology exports and the bulk of its high technology production in 2008 (Hout and Ghemawat .P.97).

At home, China's move up the value chain is seen in the greater production of intermediate input and upgrading of existing product lines. Examples of such movements include production of higher value textile products such as synthetic fibre operating rate, polyester staple fibre (PSF), and textile chemicals[3]; industrial machinery and equipment; marine and shipping equipment; transport equipment and automobiles; and consumer appliances. This movement toward more sophisticated products has seen Haier, a major white goods producer, and various motorcycle producers in China capturing an increasing share of the world market as well. Concomitant to an upgrade of existing product lines, Chinese firms have also entered into new areas of production such as aircrafts, high speed rails, aerospace equipment, pharmaceutical products, etc. While many of these sophisticated products are currently produced only for the domestic market, they are indicative of China's ambitions for a leading position in the global value chain.

3. Value Chain Upgrade as a Development Policy

Despite many improvements in its technological capabilities, China must do more to escape the role of a low margin producer in the global economy. China must overcome the technological gap with foreign producers if it is to become a producer of high technology products. Such a gap exists even in areas that China has aggressively pursued at home, such as aviation, computer software, wind energy, and rail technologies (Hout and Ghemawat. p.98). To move up the value chain, fostering domestic innovation has been and will remain a key policy goal of the Chinese government. The recent re-statement of a target R&D-to-GDP ratio of 2.2 percent in China's 12th Five-Year Plan is simply a continuation of its innovations policy over the past decade. China's aggressive promotion and support for R&D activities through various channels such as government-sponsored science parks, university and corporate research, and foreign direct investment programs have led to a burst of R&D spending in China.

3. ICB (2009) "China textile chemicals move up the value chain: the long march", August 24, 2009.

Table 2: China's R & D Expenditures and Activities, 2004 – 2008

	2004	2005	2006	2007	2008
Full-time Equivalent of R&D Personnel	115.3	136.5	150.2	173.6	196.5
(10,000 Man-year)		(18.41%)*	(10.05%)	(15.58%)	(13.21%)
Funding for S&T Activities	4328.3	5250.8	6196.7	7695.2	9123.8
(100million RMB)		(21.31%)	(18.01%)	(24.18%)	(18.56%)
Expenditure on R&D	1966.3	2450	3003.1	3710.2	4616
(100 million RMB)		(24.60%)	(22.58%)	(23.55%)	(24.41%)
R & D Expenditure as % of GDP	1.23	1.33	1.42	1.44	1.54
# of Patents Application Accepted (piece)	353807	476264	573178	693917	828328
		(34.61%)	(20.35%)	(21.06%)	(19.37%)
# of Patents Application Granted (piece)	190238	214003	268002	351782	411982
		(12.49%)	(25.23%)	(31.26%)	(17.11%)

Note: * indicates annual rates of growth.

Source: China Statistical Yearbook 2005 and 2009.

An overview of China's R&D expenditures and activities is given in Table 2. The upward trend in R&D expenditure and activities in China is beyond doubt, but it is the quality of such activities that has been the subject of scrutiny among scholars and observers. Whether the patent applications in China are an appropriate indicator of China's rising technological prowess is open to dispute. International patent applications are generally accepted as a more accurate measure of a country's R&D outputs[4]. When PCT (Patent Cooperation Treaty) applications are used as an indicator, China is ranked among the top five nations in the world, as illustrated in Table 3.

4. A more exacting benchmark would be patents associated with market-ready or commercially applicable technology.

Table 3: PCT international applications – Top 15 countries

RANKING	COUNTRY	2006	2007	2008	2009	2010 ESTIMATE	2010 PERCENT	2010 GROWTH
1	United States of America	51,280	54,043	51,637	45,618	44,855	27.5%	-1.7%
2	Japan	27,025	27,743	28,760	29,802	32,156	19.7%	7.9%
3	Germany	16,736	17,821	18,855	16,797	17,171	10.5%	2.2%
4	China	3,942	5,455	6,120	7,900	12,337	7.6%	56.2%
5	Republic of Korea	5,945	7,064	7,899	8,035	9,686	5.9%	20.5%
6	France	6,256	6,560	7,072	7,237	7,193	4.4%	-0.6%
7	United Kingdom	5,097	5,542	5,466	5,044	4,857	3.0%	-3.7%
8	Nether-lands	4,553	4,433	4,363	4,462	4,097	2.5%	-8.2%
9	Switzer-land	3,621	3,833	3,799	3,671	3,611	2.2%	-1.6%
10	Sweden	3,336	3,655	4,137	3,567	3,152	1.9%	-11.6%
11	Canada	2,575	2,879	2,976	2,527	2,707	1.7%	7.1%
12	Italy	2,698	2,946	2,883	2,652	2,632	1.6%	-0.8%
13	Finland	1,846	2,009	2,214	2,123	2,076	1.3%	-2.2%
14	Australia	1,996	2,052	1,938	1,740	1,736	1.1%	-0.2%
15	Spain	1,204	1,297	1,390	1,564	1,725	1.1%	10.3%
	All Others	11,531	12,595	13,725	12,659	12,909	7.9%	2.0%
	Total	149,641	159,927	163,234	155,398	162,900		

Source: WIPO News and Events, World Intellectual Properties Organization, 2011.

This emergence of China's status as an R&D contender is the result of a decade of double-digit growth in its R&D spending, as indicated in Table 2. However, in absolute amounts, China's R&D spending has remained only a fraction of the level observed in most developed nations. It is thus reasonable to conclude that, despite China's aggressive support for R&D activities, it will be some time before it can assert dominance as a technological powerhouse.

While some evidence of initial success is reported, there remains much concern with China's capability to do become a producer and exporter of high technology products. Given China's production capability and factor endowment, it is generally accepted that further development of suitable human resources, technological know-how, management expertise skills, and other innovative skills is required for China to move up the value chain. The current supplies of such ingredients in China are considered inadequate by many for a rapid transformation and upgrade of China's value chain position. Indeed, these are the same essential determinants of an economy's long-term competitiveness identified in the literature

on 'new economic geography', business studies, regional science, and innovative studies (Humphrey and Schmitz, 2002). China must continue to develop these factors as it continues on its development path. Not surprisingly, government policies in China have actively focused on the cultivation of these factors both as a matter of developmental policy and as support for Chinese firms to augment their competitiveness and move up the value chain[5].

4. Constraint of Value Chain Relations

As a matter of economic reality, government policies have been important in shaping economic and industrial development in China since the economic reform in 1978. The "Go Global" policy inaugurated after China's entry into the WTO in 2001 has been instrumental in furthering economic openness, and is responsible for the impressive growth of the Chinese economy. To build on this economic momentum, China has implemented a host of policies since 2005 designed to promote greater globalization and competitiveness of its firms[6]. They include construction of new infrastructural facilities in transport and communications, promotion of science and innovations through technology parks and the 10 Industry Revitalization Plan, financial support and tax incentives for high-tech enterprises, establishment of new domestic standards for goods and technology[7], greater direct foreign investment abroad, and entry into new product markets. The aims of these policies are to maximize value-added production and advance China's technological capability.

While the aforementioned policy initiatives are undoubtedly essential prerequisites to China's move up the value chain, many determinants of value chain relations are beyond the direct influence of Chinese government policies. These include international demand factors, sourcing and supply chain strategies of multinationals, international distribution systems, and competitive market conditions. China's move up the value chain will be affected by these fundamentals of market forces and global value chain relations as much as by the force of government policies. One must recognize the realities and constraints of value chain relations in studying China's ambition of moving up the value chain.

By focusing on value chain coordination, Humphrey and Schmitz (2002) have identified a continuum of value chain relations we could adapt to our analysis. The continuum ranges from vertical integration at one end to a total arm's length relationship at the other. In between lie networks value chain, where member firms are characterized by complementary competencies and skills; and quasi-hierarchy, where a powerful partner, usually an international buyer, dominates the value chain. While a networks value chain typically denotes horizontal (or non-dominant) production relations among suppliers of a given product, a quasi-hierarchy

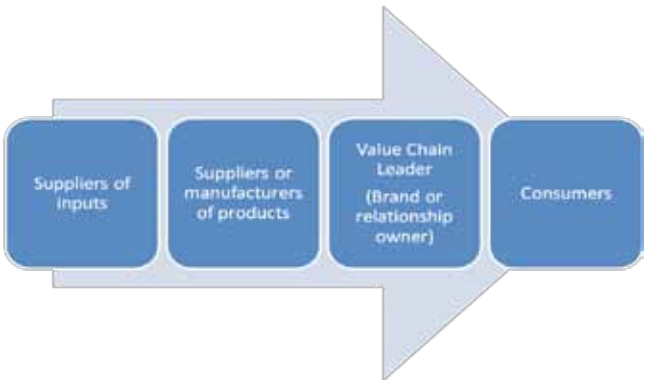
5. The role of government in promoting economic growth is seen in the study of regional economics in enhancing agglomeration economies and human resource development (Scott 1996 & Edquist 1997).

6. See Schmittzehe & Partners (2009).

7. For example, China has moved to adopt TD-SCDMA for its domestic wireless mobile 3G standard as a way to develop the domestic telecommunications industry (Economist 2010).

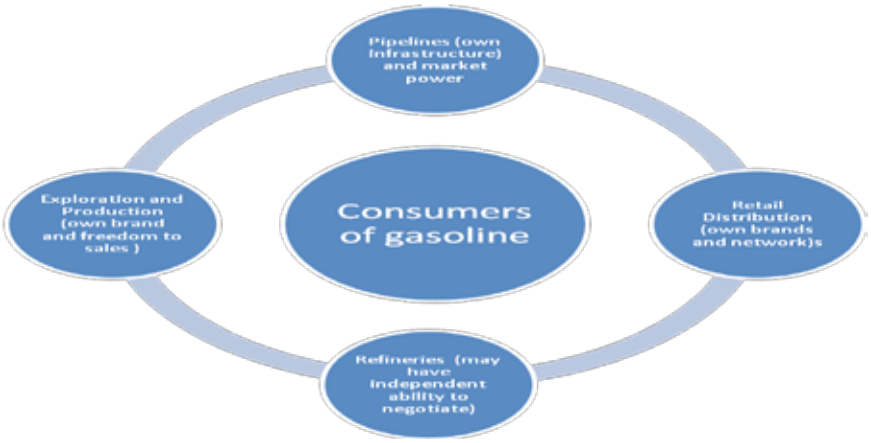
is defined by the asymmetrical power existing between local producers and international buyers. Examples of quasi-hierarchy include large global retail chains such as Walmart, who enjoys tremendous power in its value chain, and the global computer industry, where U.S. companies play the leading role at the top of the value chain with Taiwanese ODMs and OEMs in the middle and mainland Chinese manufacturers at the bottom. A hypothetical quasi-hierarchy is illustrated in Figure 1. The most important aspect of this figure is seen in the value chain leader's ownership of a brand that is recognized by consumers, which allows it to "own" and cultivate the relationship with the consumers.

Figure 1: A Hypothetical Hierarchical Value Chain



A network value chain, on the other hand, consists of producers who interact with each other and work together to co-produce values for a particular industry. They represent different nodes in the value chain network but each enjoy their own market power and brand equity in the market. Members of the network value chain work in a complementary fashion to meet the needs of the final consumer. An example of a network value chain is the petroleum industry, which works to meet consumer demands for gasoline as a final product. A network value chain is shown in Figure 2.

Figure 2: The Petroleum Industry as a Network value Chain



In today's global market, the boundary or distinction between a hierarchical and network value chain is not always permanent. Network value chains can evolve into quasi-hierarchies through mergers and acquisitions by dominant firms who aim to gain control of the value chain for their own interests.

It is important to know a firm's role in a value chain if we are to understand how it may go about changing its position and whether such change is likely to succeed. How firms relate to each other in the value chain will not only determine how their value chain positions may evolve over time, but also predict the likely outcomes of any disruptions to the existing value chain. For instance, it would be more difficult for a firm in a quasi-hierarchy than for a firm within a network value chain to move up the value chain unilaterally by producing a more sophisticated product or adapting its product for a different target market. This is because such a move is likely to invite resistance from the value chain leader, who may not welcome the new competition this would bring. On the other hand, the value chain leader of a quasi-hierarchy may encourage or even facilitate a firm's move up the value chain if it is required for its own strategic interest, such as changing its own product mix or improving product quality, for example. In the latter case, a lead firm in the value chain who wants to switch to more sophisticated products or expand their product offerings would actively assist a Chinese firm to move up the value chain through acquisition of new kills and capabilities.

This means a unilateral attempt by firms within a quasi-hierarchy to move up the value chain without client cooperation may engender barriers and resistance that would make such a move difficult. They must be prepared to overcome various market barriers and competitive responses from existing producer or lead firms up the value chain. After all, international lead firms or leaders up the value chain can be expected to react to new market entrants and competition adversely. The ability of Chinese firms to compete with international firms further up the value chain will thus be a crucial success factor in upgrading their position in the global value chain. As we will discuss subsequently, most international value chains are dominated by multinational firms who enjoy significant advantages in areas such as international brand equity, management and marketing expertise, design capability, and ownership of existing distribution channels. Overcoming these advantages will not be an easy task for Chinese firms aspiring to a similar position in the global value chain.

Within the macro environment created by government policy and value chain relations, the question of value chain upgrade can also be approached from the firm's micro perspective. In general, there are four types of value chain upgrades a firm may wish to pursue[8]. They are: (1) process upgrading through better technology or more efficient production systems; (2) product upgrading via movement into more sophisticated product lines (up the supply chain); (3) functional upgrading by acquiring new functions or increasing the skill level of activities; and (4) inter-sector upgrading through movements into new activities. Not all of these upgrading categories offer the same technical and economic challenges. For example, process and product upgrading are underscored by technical considerations that are more directly subject to a firm's control and influence than functional and inter-sectoral upgrading. A firm can be expected to exert greater influence on the outcomes of process and product upgrading as they are immediately related to a firm's efficiency and competitiveness. The barriers to upgrading presented by value chain relations are not immediately apparent and

8. These categories are adapted from Humphrey and Schmitz (2002).

threatening. Consequently, process and product upgrading is where one would expect China to experience and demonstrate the most success in moving up the value chain. The requirements of the different types of upgrade for new technology, process, and market access, as well as the degree of control a firm may exert over the upgrade, are presented in Table 4.

Table 4: Comparative Views of value Chain Upgrade

Type of Upgrade	New Technology Required?	New Process Required?	New Market Necessary?	Degree of Firm Control
Process	Yes	Yes	No	Great
Product	Yes	Yes	No/Maybe	Great
Functional	Yes	Yes	Yes	Small
Inter sectoral	Yes	Yes	Yes	Small

However, China's objective of value chain upgrade calls for more than just process and product upgrading. Functional and inter-sectoral upgrading are important elements of this objective. Production of high technology products and entry into markets for these products are considered essential to creating a modern Chinese economy. This means China's attempt to move up the value chain in high technology products is constrained by macro factors such as value chain relations and market forces beyond the firm's immediate control. A synthesis of the aforementioned factors is attempted in the next section in order to assess the prospects of China's value chain upgrade strategy.

5. A Framework for Analysis

Complex supply chain relations and organizations underlie today's value chains. They are intended to compete with other value chains with maximum efficiency across the entire value chain. Modern value chain relations are fashioned to achieve a high level of efficiency and consumer responsiveness. Cooperation and collaboration throughout the value chain are essential to the efficacy and viability of such chains. This means any attempt by a value chain member to modify or terminate its role in the value chain will cause a disruption in fundamental value chain relations if not coordinated with value chain partners. The potential benefits accruing to a chain member from a disruption of existing value chain relations must be balanced against their costs. Successful movements up the value chain are dependent on more than improvements in production capability and supportive government policies. Market demand, product distribution, and consumer acceptance are the other side of the proverbial coin.

If improvement in productive capacity, product innovations, and enabling government policy are the supply-side factors, consumer preferences and market conditions are then the

demand-side factors in the fashioning of a successful value chain. Lead firms in any value chain are usually those who have proven their skills in reconciling supply- and demand-side considerations in satisfying the needs of a particular market demand or consumer segment. A successful value chain is more than a supply chain that produces goods at a competitive cost, but one that delivers these goods with the design, quality, distribution channels, and after-sale service required by the consumers. As the product line becomes more sophisticated, product customization and differentiation will become increasingly important in maintaining its market competitiveness. A successful value chain is one in which the forces of production are organized in an effective and competitive manner to meet the needs of the market. The high margin value chain activities such as marketing, brand development, product design, and customer service will increase in significance as a firm moves up the value chain. Unfortunately, expertise in these high margin activities is generally lacking in many developing countries. Suppliers in these countries may also find it difficult to enter foreign consumer markets without the requisite cultural and market familiarity, should they decide to create their own value chain. This accounts for why most international value chains are quasi-hierarchies led by multinationals from Western countries.

For China to successfully move up the value chain, it must therefore overcome constraints on both the supply and demand sides. Our analytical framework is thus built on the interplay of supply and demand factors.

5.1. Supply-Side Elements

A necessary, though not sufficient, condition for value chain upgrade is an improvement in China's productive capability. It must become more technology- and skill-intensive irrespective of the type of upgrading it aims to achieve. Indeed, all four types of value chain upgrade previously discussed have been identified as desirable for Chinese firms. These firms are encouraged to capture a greater share of production up the value chain, produce with better technologies and quality, and enter new industries and markets. Any strategy that would expand China's productive and technological capabilities would enhance its supply-side readiness for value chain upgrade. China's success in upgrading its value chain position will thus depend partially on its success in improving its productive resources.

Notwithstanding recent advances, China is said to suffer from a variety of deficiencies that will act as barriers to upgrading its value chain activities. As these deficiencies are widely discussed, it suffices to report that they include inadequate human resources and competency[9], inefficacious management systems and capability, limited innovativeness, lack of cross-cultural and international expertise, poor international product image, etc. Not all critics are optimistic that China is equipped to overcome these weaknesses in short order. It is China's uneven business performance and lack of experience in activities further up the value chain that have caused many to express doubts about its attempt to move up the value chain. In particular, China's relative lack of professional skills in modern management, marketing, product design, and innovation is seen as a major barrier to its value chain upgrade efforts. The above deficiencies are nevertheless surmountable barriers for process and product

9. These would include technical, cultural, and linguistic skills.

upgrading and movements up the supply chain. Better technology and processes can be adopted to produce more sophisticated products to capture more value in the supply chain. Indeed, recent changes in China's trade structure have suggested significant improvements in these areas. However, it is these deficiencies' impact on functional and inter-sectoral upgrading that needs to be addressed. Consequently, recent government policies in China have enlarged its focus on enhancing its productive and innovative capabilities. Policies to encourage high technology investment and acquisition, scientific research, and human resource development are clearly intended to bolster China's supply-side ability to move up the value chain. China's records in industrial policy and economic development seem to augur well for its efforts to enhance its productive or suppl- side capabilities.

However, improved productive capabilities and competency are not sufficient for a value chain upgrade. One must also recognize the dampening effect demand-side determinants may have on China's attempts to upgrade its value chain functions and compete in new global sectors or markets. Specifically, China's inability to influence consumer perception and create its own value chain is not correctable by domestic government policies. The absence of global brand recognition and China's reliance on multinationals for access to foreign markets are key barriers to Chinese firms altering their functions in the value chain or establishing their own value chains[10]. This suggests that China's prospects for process and product upgrading are much better than for functional and inter-sectoral upgrading.

5.2. Demand-Side Considerations

China's efforts to upgrade its value chain must go beyond the realm of productive capabilities to include market and demand-side considerations. Demand-side in the current context denotes not only consumer preferences and demands but also market conditions faced by Chinese firms in the global market. Specifically, market structure and value chain relations that would influence international demands for Chinese goods are also classified as part of the demand-side equation. China's ability to produce must be reconciled with international demands and market conditions in order to properly assess China's strategy of altering its value chain position.

While demand-side factors are relevant to all four types of value chain upgrade, our current discussion will focus on functional and inter-sectoral upgrades. These two types of upgrade would challenge and disrupt existing value chain relations and require a fundamental transformation of China's value chain capabilities. Specifically, both of these upgrade categories imply development of new product value chains that would require higher value chain functions such as product differentiation, design and innovations, brand development and marketing, and customer relations; these functions are not known to be strengths of Chinese firms. To succeed at functional and inter-sectoral upgrade, Chinese firms must become competitive with existing global value chain leaders with their own brands and distribution channels. They must build a high degree of consumer confidence and product image for the "made in China" label. Enhanced productive capability alone will not suffice. Chinese products must become accepted by foreign consumers as comparable to Western products in

10. See (Miller 2006).

terms of quality, reliability, service support, or exclusivity if Chinese firms are to compete at the higher end of the value chain or create their own value chains.

Functional and inter-sectoral upgrades are therefore most affected by the constraints of existing value chain relations and demand conditions. Will China be sufficiently competitive in these new markets? Will it be able to meet the requirements of new technical and value chain management skills? Will it be able to create the brand recognition and consumer acceptance necessary for success? Disruptions to existing value chain relations are also unavoidable as Chinese firms attempt to create their own value chains and compete with other existing value chains. What are the potential business costs engendered by such a strategy? What are the likely reactions of their current value chain partners? After all, insertion into international value chains led by foreign multinationals with existing markets and brand recognition has been responsible for China's export surge and subsequent economic growth. Instead of working within the existing quasi-hierarchies, can Chinese firms compete with their own value chains? This last question begs a discussion on China's relative competitiveness outside of its manufacturing prowess.

It is well known in economic literature that the international competitiveness of an economy is intimately linked to the income level and characteristics of the domestic economy. In addition to human, technological, and physical resource endowments, domestic consumption can also act as a powerful determinant of a country's economic competitiveness. From Linder's theory of demand similarity (Linder 1961) to Porter's competitive diamond (Porter 1990), the level and composition of domestic demand has been identified as a decisive determinant of a country's production structure and competitiveness. Countries tend to produce a high level of those goods that are commonly consumed by their populace, and build up a competitive advantage in these goods over time because of scale economies and innovations. They then become exporters of these goods, even to countries with similar resource endowments and technological backgrounds, because of product differentiation[11].

The lifestyles and demands of domestic consumers are thus important determinants of how a value chain should be fashioned to access a given consumer market. Domestic firms that are familiar with the cultural nuances and consumer characteristics in their home markets clearly have an advantage over foreign firms in capturing domestic consumers for their products. Over time, a large domestic market for a product can transform these firms into global value chain leaders as their products move through the product lifecycle and production becomes internationalized. If this is how existing value chain leaders acquire their dominant positions in the quasi-hierarchies, the demand-side barriers to Chinese firms building their own value chain in competition with existing value chain leaders will be daunting[12]. This observation also serves to reinforce doubts about Chinese firms' capacity to market and develop their own brand names, and become competitive organizations in the global economy. Aside from manufacturing capability, China's move up the global value chain will also depend on its ability to overcome the cultural barriers and understand the psychic and lifestyle requirements of foreign consumers[13]. Failure to overcome these difficulties would manifest

11. The global wine market furnishes an excellent example in which French, Italian, American, and Australian wines are sold side-by-side in the domestic markets of different wine-producing nations.

12. It is generally believed that it is value chains rather than individual companies that compete with each other nowadays.

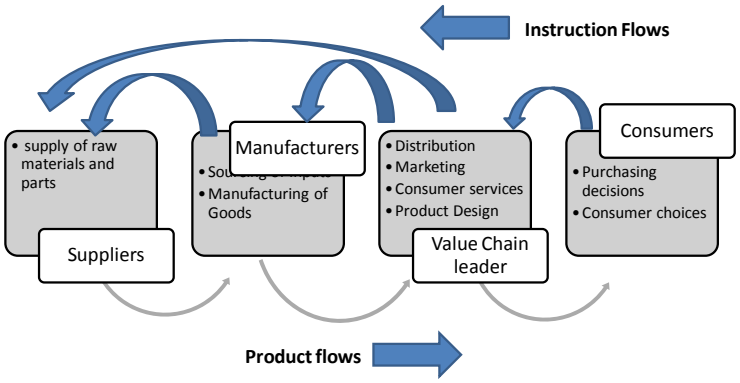
13. While China is the largest manufacturer of bicycles in the world, the recent installation of the public bicycle system in London utilizes bicycles manufactured in Canada, where a public bicycle system has been in use in Quebec for some time. This is an example of a lifestyle-generated innovation.

itself as failure to market effectively, design products with the features and quality demanded by foreign consumers, and supply requisite after-sale services.

5.3. Mediation of Supply and Demand through Value Chain Leadership

To successfully move up and compete at the higher end of the value chain, firms must be able to mediate between the supply and demand sides. The productive and creative capabilities of producers in the supply chain must be harnessed in a way that meets the requirements and needs of the consumers. Leadership of a value chain means the capacity to reconcile these two forces[14]. A conceptual representation of this process is presented in Figure 3, in which instructions to the value chain flow from the consumers to the leader, who then coordinates the supply chain and disseminates production instructions to other value chain members. Physical flows of inputs and goods go in the opposite direction, from suppliers to manufacturers to the leader; the leader then distributes and markets the product to the consumers. It is clear from this Figure that the value chain leader is the interface between the consumers and the other value chain members.

Figure 3: Hierarchical Leadership in a Value Chain



While Figure 3 describes the importance of value chain leadership in mediating between the forces of supply and demand, it does not explain how such leadership originates. In general, two origins of value chain leadership can be identified. First, it tends to evolve out of a business's ability to fulfill consumer needs with innovative, novel, or niche products created through technical innovations or product differentiation. Examples of technical innovation abound in the consumer electronics and telecommunications market, including companies such as Nokia, Intel, Apple, and Dell Computers. Leadership through product innovation or differentiation is best illustrated by brand names such as Nike, Zara, and Boss in the fashion

14. Some may also suggest that the value chain leaders are also the ones who can create new products to serving emerging consumer needs.

industry. Second, value chain leadership can be created by a firm's ability to organize and coordinate the existing supply chain in a way that creates new value for consumers, either through a rise in efficiency or a fall in production cost. Such leadership is best exemplified by companies like Walmart, Dell Computers, Proctor and Gamble, Unilever, and Toyota. In both scenarios, the firms' ability to create value through new products or new processes gives rise to a strong market position in their own industry. Their market dominance is the result of their ability to develop a brand identity that consumers can relate to, one that communicates a certain unique and desirable quality to consumers. In turn, the resultant brand equity and loyalty lead to a high degree of market power that allows the firms to dominate a supply chain and become value chain leaders.

The above analysis suggests that upgrading China's global value chain position outside of product and process upgrading will take time. Developing brand equity in the global market will be challenging, and will require a skill set that Chinese firms have yet to demonstrate. Acquisition of foreign brand names and expertise will likely continue to play a major role in China's movement up the value chain in the near future. However, China's move up the learning curve is likely to accelerate as China exercises what Child and Rodriguez (2005) call the late-comers' advantage. As late-comers in the international economy, Chinese firms are now in a position to selectively acquire and invest in complementary assets and skills such as technology, brand knowledge, R&D capabilities, and internationally experienced management to address their value chain weaknesses. Lenovo's acquisition of IBM and Cheely's acquisition of Volvo are examples of "complementarity"-driven investments. Nevertheless, the long-term success of this strategy must not be taken for granted.

Much movement up the learning curve is still required of Chinese firms engaged in this strategy. Our analysis suggested that, to become global value chain leaders, Chinese firms must develop the value chain leadership skills and brand equity enjoyed by the current value chain leaders. China must be able to duplicate the skills, knowledge, and expertise required for value chain management and design. Chinese firms must develop the kind of capabilities that companies like Walmart, Intel, and Toyota are known for. Given that global competition is now between international value chains rather than individual firms, functional weaknesses at the top end of any China-led value chain would represent a major obstacle for Chinese firms. The corollary to this observation is the question of where China might enjoy an advantage and not suffer a disadvantage in assuming the leadership of a value chain. In other words, how would Chinese firms develop the value chain leadership skills necessary to become global value chain leaders? The answer may lie with China's domestic economy.

6. Upgrade through the Domestic Market

Most discussions of China's value chain strengths and weaknesses are undertaken in the context of the global value chain. However, given China's expanding economy and its growing impact on world trade, an analysis of China's future value chain position is not complete without taking into account its domestic developments. Indeed, China's pheno-

menal economic growth in the past two decades has transformed it into one of the most important consumer markets in the world. With most of the world mired in recession during the past two years, China has continued to expand and has emerged as a bright spot in the otherwise gloomy global economy. It is now the fastest growing market for Western branded luxury products in the world. A side effect of the stimulus measures applied by China to protect its economy from the global downturn in 2008 has been a stronger domestic economy. It is this rising strength of the domestic economy that will have a strong impact on China's move up the value chain.

As indicators of the growth in China's domestic market, the annual growth rates in China's real GDP and real per capita GDP are reported in Table 5. According to this Table, the average annual real GDP growth in China between 1991 and 2010 is an impressive 10.27 percent. The real per capita GDP growth for the same period of time is 9.40 percent. Despite the continual income gap between China and the developed world, this uninterrupted economic growth has helped lay the foundation for an emerging consumer market in China.

Table 5: Annual Rates OF Growth in Constant Prices, 1990 - 2009

Year	GDP	Per Capita GDP	Year	GDP	Per Capita GDP
1991	9.2	7.7	2001	8.3	7.5
1992	14.2	12.8	2002	9.1	8.4
1993	14	12.7	2003	10	9.3
1994	13.1	11.8	2004	10.1	9.4
1995	10.9	9.7	2005	10.4	9.8
1996	10	8.9	2006	11.6	11
1997	9.3	8.2	2007	13	12.5
1998	7.8	6.8	2008	9	8.4
1999	7.6	6.7	2009*	9.1	9.9
2000	8.4	7.6	2010*	10.3	8.8

Note: * denotes figures calculated from data reported in *World Fact Book - CIA*, 2010 and 2011.

Sources: *China Statistical Yearbook* 2009 and *World Fact Book - CIA,* 2010 and 2011.

The domestic market is important for China's value chain upgrade in two respects. First, it can provide the proving ground for Chinese firms who wish to move up the global value chain. The home market constitutes a familiar landscape free of the challenges associated with operating in a distant foreign market. Firms can develop their products and competitiveness in a more familiar environment at home before venturing abroad. Indeed, the home market can become a friendly battleground for Chinese firms to begin their challenge to foreign competitors. If they cannot compete with foreign companies at home, what are their chances of success abroad? While this question is not merely rhetorical, the author recognizes that consumer markets might be segmented in a way that Chinese consumers of Western goods may not be attracted to Chinese products in the near future due to the status that

consumption of Western luxury goods confers[15]. However, cultural knowledge and familiarity should allow Chinese firms to take advantage of the large pool of emerging consumers and become leaders of competitive value chains at home. This implies a strategy of developing value chain skills and competitiveness by cultivating and serving the domestic market as it grows. The long-term effect would be production of sophisticated products and services that are uniquely suited to the needs and lifestyles of the Chinese consumer. Second, producing for the domestic consumer market helps China mitigate the constraint of existing value chain relations. It allows Chinese firms to circumvent the difficult of competing with existing value chain leaders or brand names and accessing established international markets. The domestic market is where Chinese firms can exploit their productive capabilities to capture the leadership of emerging value chains at home[16].

To the extent that similarity in consumer preferences exists between China and other developing countries, growth through the domestic market offers another benefit. It would allow China to develop its own value chains that would also serve markets in the developing world. The relatively minor presence of multinational retailers in developing markets, where the focus is on price competitiveness, creates a rather conducive environment for Chinese exports. China's price competitiveness will be a significant advantage in promoting its own value chains in these markets. Products from consumer goods to automobiles to electronics can be exported to non-Western markets through China's own value chains. In other words, exports to developing countries can offer another avenue for upgrading China's global value chain positions. In fact, this suggestion seems to be borne out by the activities of many Chinese firms who have expanded their exports of consumer goods, motorcycles, automobiles, and telecommunications equipment to Africa and Southeast Asia.

While the approach to value chain upgrade suggested above focuses on China's strengths, it does not necessarily suggest a retreat from Western markets. It simply points out where China's comparative advantages lie and where it may expect to acquire value chain leadership. Growth in the Chinese market should enhance China's international competitiveness as Chinese firms become more innovative and efficient over time.

7. Conclusions

China's desire to upgrade its position in the global value chain is driven by both market forces and policy impetus. It is natural that after two decades of economic growth, China has decided to try to move up the value chain and develop a more technologically advanced economy. This will allow it the opportunity to acquire and develop new technologies and build a foundation for a more advanced economy. China's efforts to develop and upgrade its productive capability at both the micro and macro levels will undoubtedly go a long way in assisting Chinese firms to accomplish the objective of moving up the value chain. This pa-

15. Western luxury goods have retained a following even in an advanced industrial economy such as Japan.

16. The recent closure of Home Depot and Best Buy outlets in China is an indication of the strength of Chinese firms in their home market and how they may leverage their local knowledge to compete with firms from abroad.

per proposes a framework to analyze the economic and policy issues pertaining to China's efforts to upgrade its value chain position. The framework delineates the underlying factors into supply-side and demand-side factors and brings to bear the relevance of market constraints and value chain relations. Unless existing global value chain relations are part of the analysis, any prognosis of China's value chain strategy based entirely on technical and endowment factors would be greatly incomplete. This approach points out the difficulty in overcoming existing value chain advantages enjoyed by the chain leaders and the need to remedy China's deficiencies in functions further up the value chain. To the extent that government policies are unable to alter global business conditions, domestic growth in China and trade with other developing countries will offer China a natural platform for future value chain development. This means policies to foster a more efficient domestic economy through greater domestic competition, a more efficient logistics system, and better allocation of financial capital should all be part of China's value chain strategy.

Efforts by China to move up the value chain also contain lessons for countries in Latin America. Inserting oneself into the global value chain can be a relatively expedient way to increase income and employment, but countries must be aware of the long-term constraints this approach might entail. The building of supply-side capability should be accompanied by a strategy to address the aforementioned value chain constraints and the need to develop a strong domestic economy over time[17]. China's experience is admittedly most instructive for countries such as Mexico and Argentina who have pursued a role in the North American value chain as an important growth strategy[18]. However, even Latin American suppliers of raw materials and resources should be mindful of the long-term implications of global value chain integration. Latin American nations must be cognizant of the long-term constraints and vicissitudes that would accompany the short-term economic benefits of global value chain integration.

17. Should the current discussions to promote freer trade and greater economic integration among Latin American countries prove to be successful, it would have the same effect as strengthening the demand side of the value chain for the purpose of value chain development.

18. The role of a low-cost, low-margin producer of manufactured goods for North America may render upward movements on the value chain and a high level of economic development difficult in the longer run.

References

Child, J.; Rodrigues, S.B. (2005), "The Internationalization of Chinese Firms: A Case for Theoretical Extension?", Management and Organization Review, Vol. 1, Num. 3, pp. 381–410.

"China textile chemicals move up the value chain: the long march", (2009, August 24), ICB.

"Creative Solution", (2011, January), China Economic Review, pp. 27–33.

Cui, L.; Syed, M.H. (2007), "Is China Changing Its Stripes? The Shifting Structure of China's External Trade and Its Implications", IMF Working Paper, Num. 07/214.

Edquist, C. (1997), "Systems of Innovation: Technologies, Institutions and Organizations," Frances Printer, London/Washington.
Hout, T. M.; Ghemawat, P. (2010, December), "China Vs the World: Whose technology is it?" Harvard Business Review, pp. 95–103.

"How China is Handling Cost Rises by Boosting Value", (2006, May 7), Financial Times.

Humphrey, J.: Schmitz, H. (2002), "How Does Insertion in Global value Chains Affect Upgrading in Industrial Clusters?" Regional Studies, Vol. 36, Num. 9, pp.1017–1027.

Kotler, P.; Keller, K. (2006), "Marketing Management", Pearson Prentice–Hall, London.

Linder, S. B. (1961), "Essay on Trade and Transformation", John Wiley & Sons, New York.

"Made in China: moving up the value chain", (2009), Schmittzehe & Partners.

Midler, P. (2009), "Poorly Made in China: An Insider's Account of the Tactics Behind China's Production Game", John Wiley & Sons, New Jersey.

Miller, T. (2006.a), "Trading with the Dragon, Part 1: Manufacturing that doesn't compute", China Business.

Miller, T. (2006.b), "Trading with the Dragon, Part 2: Working up the Value Chain", China Business.

"Picking Winners, Saving Losers", (2010, August 7), The Economist, pp. 68–70.

Porter, M. (1990), "The Competitive Advantage of Nations", MacMillan, London.

Scott, A.J. (1996), "Regional Motors of the Global Economy", Futures, Vol. 28, Num. 5, pp. 391–411.

Sleigh, A.; von Lewinski, H. (2006), "Moving up the Value Chain", Accenture.

Soderman, S. J.; Jakobsson, A.; Solerc, L. (2008), "A Quest for Repositioning: The Emerging Internationalization of Chinese Companies", Asian Business & Management, Vol.7, Num. 1, pp. 115–142.

"The Economist's Innovation Awards Recognize Huawei", (2010, October 22), Financial Express.

Wilson, D.; Purushothaman, R. (2003), "Dreaming with BRICs: the path to 2050", Global Economics Paper, Num. 99.

Xinhua News, "Key Targets of China's 12th five-year Plan", http://news.xinhuanet.com/english2010/china/2011-03/05/c_13762230.htm