

Article submitted on 2010. 11. 30.
Examination completed on 2010. 12. 07.
Publication accepted on 2010. 12. 18.

How to Enhance International Competitiveness of Korean Pharmaceutical Industry with CEPA as a momentum?*

Park, Hyun Chae**

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I. Introduction

It is obvious that FTA(Foreign Trade Agreement, hereinafter FTA) is transforming the way of doing international business. Currently Korean Government tries to make a deal of FTA with many foreign countries like China, U.S.A. and India etc. One of such examples is CEPA(Comprehensive

* This study was financially supported by Chonnam National University,2010.

** Assistant Professor, Dept. of Business Administration, Chonnam National University

Economic Partnership, hereinafter CEPA) between Korea and India.

CEPA between Korea and India signed in Aug.7th, 2009 and ratified in Nov.6th, 2009. The main purpose to conclude a deal of CEPA with Indian government is searching for the market potential and business opportunities in India.

As you all may know, India classifies as one of super emerging markets since economic growth rate per year shows around 8.5% last 5 years and people on the mid-income level are being increased from 30 million to 40 million people every year.

Before Japan and China government, Korean government proceeds CEPA to focus Indian market more. As a result, CEPA becomes effective formally from Jan. 2010. The Korea International Trade Association estimates trade volume with more than 3.3 billion dollars between Korea and India may increase and 1.3 billion dollars GDP can go up thanks to CEPA.

Indian Government is enacting "Look East Policy" to mark a strategic shift in India's perspective of the world. In January of 2010, Korean president, Mr. Lee has visited India to pave the way for closer bilateral cooperation and agreed on "Strategic Partnership" with India. In addition to this, they've also consented on the increase of total trade volume upto 30 billion dollars by 2014. As shown in <Table 1>, total trade volume in 2008 should be increased two times to achieve the above-mentioned target amounts.

<Table 1> The total trade volume status between India and Korea

(Unit ; 100 million U\$)

	2003	2004	2005	2006	2007	2008
Export	28.53	36.32	45.98	55.33	66.0	89.77
Import	12.33	18.50	21.12	36.41	46.24	65.81
Trade balance	16.20	17.82	24.86	18.92	19.76	23.96
Total	40.86	54.82	67.10	91.74	112.24	155.58

Source ; The Ministry of Foreign Affairs and Trade, 2009.

There are many Korean companies like LG Electronics, Hyundai Motors and Samsung Electronics which are so successful in India. But Developed nations like U.S.A, Germany and Japan are increasing the investment amount year by year as you can see in <Table 2> so Indian market shows very serious competitions among nations.

<Table 2> The investment amount of U.S.A., Japan, Germany and Korea
(Unit ; Million U\$)

	2006	2007	2008	2009
U.S.A.	856	1,089	1,802	1,510
Japan	85	815	405	1,034
Germany	120	514	629	481
Korea	100	296	190	100

Source ; www.commerce.nic.in

Along with green industry, the pharmaceutical industry is regarded as one of future growth engines because the percentage of net profit is relatively higher than that of any other industries and growth rate of the industry will show leading position owing to new bioengineering and genetic technologies.

However, the internationalization level of Korean pharmaceutical industry remains inferior to Indian Pharmaceutical Industry because Korean domestic market presents so attractive in profit-wise so Korean pharmaceutical firms have shown lazy in developing international market. In addition to these reasons, they do have little global competitiveness in sophisticated technologies to develop generic drugs(as a short form, generics)¹⁾ and capabilities for overseas marketing as a whole. As a result, Korean pharmaceutical industry

1) a drug which is produced and distributed after patent-off of active ingredient. The generic drug may still have a patent on the formulation but not on the active ingredient. Generics are identical or within an acceptable bioequivalent range to the original brand drug.

shows trade deficit as shown in <Table 3>. In the other hand, export amounts of Indian pharmaceuticals is much bigger than import amounts, which result in trade surplus.

<Table 3> The status of Korean pharmaceutical market

(Unit ; Billion Won, %)

	2003	2004	2005	2006	2007	2008	Average Growth Rate
Production	8,741	9,637	10,598	11,472	12,598	13,893	9.7
Export	824	811	813	862	946	1,255	8.8
Import	2,398	2,446	2,646	3,271	3,410	4,319	12.5
Trade balance	-1,574	-1,635	-1,833	-2,409	-2,464	-3,064	14.2
Market size	10,315	11,272	12,431	13,881	15,062	16,957	10.5

Source ; The Korean Pharmaceutical Association 2009

<Table 4> The Status of Indian pharmaceutical trade

	2008(U\$ Mil.)	2009(U\$ Mil.)
Export	5,078	5,191
Import	925	1,098

Source ; Ministry of Commerce and Industry in India(commerce.nic.in)

In terms of entry into India by Korean pharmaceutical industry, there are only three big Korean pharmaceutical firms until now. LG Life Sciences remains first company to come into Indian market. After this, Daewoong pharmaceutical Ltd. and SD diagnostic establish their subsidiaries at India. In view of potential market purchase power, entry level in number of Korean pharmaceutical firms shows very poor up to now.

Under the circumstances of FTA or CEPA with many countries, international business environments may change a lot so one of key issues which should be tackled in international commerce points of view will be how to enhance global competitiveness and survive in unstable market situations. So the purpose of this study is to examine the impact of CEPA on Korean

pharmaceutical industry and suggest several ways to enhance international competitiveness of Korean pharmaceutical industry in benchmarking and taking advantage of competence and capabilities of Indian pharmaceutical industry.

To evaluate and compare effectively competitive advantage of Korean pharmaceutical industry with Indian industry, the study uses the variables suggested by double diamond model which can explain well the detail features of competitiveness in international business.

II. The Review of Related Literatures

There are only a few related Korean studies on CEPA between Korea and India. It covers the results and prospects of CEPA²⁾, the effect of tariff abolition and reduction of CEPA³⁾ and the long-term effect of CEPA⁴⁾. But there is no Korean study to handle the impact and internationalization strategies of Korean pharmaceutical industry in CEPA.

In case of related foreign studies on Indian pharmaceuticals or CEPA, there are some studies which mention global strategy of Indian pharmaceutical industry⁵⁾, strategic synergies in Indian pharmaceutical firms⁶⁾, knowledge diffusion and innovation capacities of Indian pharmaceutical industry⁷⁾ and the

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- 2) Lee, S.C. (2006) "The Results and Prospects of CEPA", KIEP, World Economy.
 - 3) _____ (2010) "The Effect of Tariff Abolition and Reduction of CEPA ; Focusing on the Tariff Concessions", International Regional Studies Vol.13, No.4.
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estimation of the potential effect of CEPA⁸⁾.

With regard to the studies related to international competitiveness and diamond model, Porter M. claimed competitive advantage and competitive strategies. He also suggests "Diamond Model" to explain the competitiveness of nations⁹⁾. Thereafter Rugman and D'Cruz improve this model into "Double Diamond Model" adding global features¹⁰⁾. Moon et al. developed and generalized "Double Diamond Model" and apply the model to analyze global competitiveness of Korea and Singapore¹¹⁾. Moon & Lee has shown the usefulness of the model in analyzing the competitiveness of industries or firms¹²⁾.

III. Impact of CEPA on Korean Pharmaceutical Industry

As stated in <Table 5>, the contents of CEPA consist of preamble, total 15 chapter, 188 articles and appendix. The appendix includes trade concession, service concession, the list of professionals and explanatory notes on investment reserve. The contents of trade in goods on chapter 2, trade in services on chapter 6, investment on chapter 10 and bilateral cooperation on chapter 13 fall under the chapters and articles which are related to pharmaceutical and healthcare industry.

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- capacities in the Indian Pharmaceutical Industry," *New Technology, Work & Employment* 24(3).
- 8) Bhattacharya, S.K. (2009) " An Estimation of the Potential Effects of CEPA" Seminar(Jan.9), Korea Institute for International Economic Policy.
- 9) Porter, M. (1990)
- 10) Rugman & D'Cruz (1993)
- 11) Moon H.C., A.M. Rugman and Verbeke Alain (1998) " A generalized double diamond approach to the global competitiveness of Korea and Singapore," *International Business Review* 7, pp.135-150.
- 12) Moon & Lee (1995)

<Table 5> The composition of CEPA

<p>Preamble</p> <p>Chapter 1 General Provisions and Definitions</p> <p>Chapter 2 Trade in Goods</p> <ul style="list-style-type: none"> - Annex 2-A : Tariff reduction or Elimination - Annex 2-A : Korea's schedule of Tariff Concessions - Annex 2-A : India's schedule of tariff concessions - Annex 2-B : Telecommunicatinn equipment, Electronic equipment <p>Chapter 3 Rules of Origin</p> <ul style="list-style-type: none"> - Annex 3-A : Products Specific Rules - Annex 3-B : Exemption from the Principle of Territoriality - Annex 3-B-1 : Product list subject to exemption from the principle of territoriality <p>Chapter 4 Origin Procedures</p> <ul style="list-style-type: none"> - Anex 4-A : Issuing Authority of Certificate of Origin - Annex 4-B : Certificate of Origin <p>Chapter 5 Trade Facilitation & Customs Cooperation</p>	<p>Chapter 6 Trade in Services</p> <ul style="list-style-type: none"> - Annex 6-A : Schedule of Specific Commitments of Korea - Annex 6-B : Schedule of Specific Commitments of India - Annex 6-C : Financial Services <p>Chapter 7 Telecommunication</p> <p>Chapter 8 Movement of Natural Person</p> <ul style="list-style-type: none"> - Annex 8-A : Professionals <p>Chapter 9 Audio-Visual Co-production</p> <p>Chapter 10 Investment</p> <ul style="list-style-type: none"> - Annex 10-A : Expropriation - Annex 10-B : Security Exceptions for investment - Annex 10-C : Non Justiciability of Security Exceptions - Annex I , II (Explanatory Notes) <p>Chapter 11 Competition</p> <p>Chapter 12 Intellectual Property Rights</p> <p>Chapter 13 Bilateral Cooperation</p> <p>Chapter 14 Dispute Settlement</p> <ul style="list-style-type: none"> - Annex 14-A : Model Rules of Procedure <p>Chapter 15 Administrative and Final Provisions</p>
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1. The Impact on Trade in Goods

As shown in below-mentioned <Table 6>, tariff concession is concluded on 99.3% of Korean products and 94.4% of Indian products among healthcare and pharmaceutical items. The tough negotiations with Indian government ,which has very conservative trade protection policy and little experience in opening the Indian market, results in such higher level of concession. The results are not very satisfactory but so efficient.

Indian government ask Korean government to remove trade tariff right away on pharmaceutical raw materials and consumable medical devices like syringe

which show relatively competitive advantage. But Korean government removes tariff immediately on the products like hormone raw materials which rely on import mainly and are imported by small quantities. The trade tariff on raw materials for antibiotics and consumable medical devices will be removed maximum eight years later to protect Korean market and consider India's competitive advantage. The tariffs on items like ultrasound diagnostic device and bio-symptom diagnostic device which have competitive advantage in Korea side will be removed 5 years later at the maximum. However, the recognition on the effect of trade tariff removal will take longer time because the period of tariff removal in CEPA presents longer than that of FTA with Chile and U.S.A..

<Table 6> The status of trade concession in CEPA

	India side	Korea side
Immediate Removal	Cellular phone, Computer accessories, Fax machine etc	Benzene, Xylene, Raw materials of hormone, Polycarbonate etc
Removal during 5 years	Medical electronic device, Ultrasonic diagnostic device, Camera etc	Pharmaceuticals for retail, Agrochemicals etc
Removal during 8 years	Cement, Cosmetics	Medical device for sugery, Penicillin, Cement etc
Reduction to 1-5% during 8 years	Stereo for car, Car parts etc	Petroleum for car
Reduction to 50% during 8-10 years	Refrigerator, Pesticide etc	Parts for Controller
No tariff concession	Air conditioner, Car etc	Light oil etc

Source: www.fta.go.kr

India has global competitiveness in developing generics. The export amount of generics lies 1.5 billion dollars in 2003 but it is increased upto 4.9 billion

dollars in 2008. If trade tariff with range of 0%–8% is abolished, Indian generics can be exported much more to Korean market. There will be severe competitions between Indian firms and Korean companies in developing generics with each other, in the long run.

The average of trade tariff in India shows 12.5% whereas the average of Korean tariff on pharmaceuticals remains 5.6% which show around half of Indian's. Korean government expects lowering total import amount of pharmaceuticals owing to reduction of tariff in pharmaceuticals.

〈Table 7〉 The impact of CEPA on trade in goods

Contents	Short-term	Long-term
Tariff Concession or Removal	Export Korean goods to India and Import Indian goods into Korea will be increased only a little bit. (Tariff 12.5% of Korean medical electronic device in export to India will be removed during 5 years. Tariff 6.5%–8% of Indian pharmaceuticals for retail in export to Korea will be removed during 5 years.)	serve as a major tools in export & import (Antibiotics like penicillin & Indian medical device for surgery in export to Korea will be removed during 8 years.)
opportunities in international business	Chance of export and import related to the goods in tax concession can be increased.	Chance of export and import related to the goods in tax concession can be increased.
Overall impact	limited	Medium

2. The Impact on Trade in Services

Indian government strongly asked Korean government to open movement of professionals like medical doctor and nurses but Korean government does not

accept this. However Korean government should be prepared for such movement in advance after referring to Japanese cases to admit nurses coming from Philippine.

In terms of business service, Korea opened to India research & development services on natural science besides marine science investigation, whereas India opened business services related to medical service to Korea. As a result, Korean companies can acquire shares upto 74% and open new limited companies in India for medical, dental and hospital service, if Korean companies provide new technology in curing diseases. In addition to this, test and analytical services also opened to Korean firms. But bio-technological service with medical purpose was not opened yet to Korean firms. Namely, Korean pharmaceutical business service industry like medical service including hospitals are able to enter into Indian market. In terms of India side, Indian IT professionals who can develop medical softwares are able to come to Korea.

〈Table 8〉 The impact of CEPA on trade in services

Contents	Short-term	Long-term
Movement of Professionals	Indian medical doctors and nurses cannot come to Korea so there will be no effect on Korea. But demands on Indian assistant to help Korean doctors; foreign clinical trials will be increased. Korean medical service can go to India and open limited companies with shares upto 74%.	Eventually, Korean government cannot avoid partial movement of medical professionals from India or developing countries so they should be prepared in advance. International exchange in medical business service between Korea and India will be sharply increased.
opportunities in international business	Chance of alliance and partnership in special hospitals can be enlarged.	M&A and direct entry on medical business service can be suggested.
Overall impact	limited	Medium

3. The Impact on Investment and Bilateral Cooperation

In terms of investment, Indian government allow Korean firms to invest manufacturing industry except primary industries, basically. An action or a series of actions by India or Korea cannot constitute an expropriation unless it interferes with a tangible or intangible property right in an investment made in the territory of India or Korea. Korea and India also accord to investors of the other party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation and sale or other disposition of investment. Therefore Korean pharmaceutical firms can invest Indian pharmaceutical manufacturing industry, theoretically.

In terms of bilateral cooperation, cooperations on the development of traditional medicine based on herb are allowed. Additionally, Korea and India agree on the cooperation of the exchange in science and technology policy and R&D systems on pharmaceuticals including generics, documentation and information on domestic regulation in the fields of pharmaceuticals, clinical trials, blood products and vaccine. Moreover, the cooperation also fall under sharing of information and experience in modern and traditional health care system, collaborative research in the fields of preventive and curative medicine and healthcare, medical tourism, international conference and conventions related to healthcare or pharmaceutical industry and exchange of programs between medical educational institutions.

〈Table 9〉 The impact of CEPA on investment and bilateral cooperation

Contents	Short-term	Long-term
Investment and bilateral cooperation	The systems on Investor protection like prohibition of expropriation, expansion in scope of lawsuit on investor protection are prepared. Korean pharmaceutical industry based on manufacturing can enter into India, theoretically. Cooperation in the development of generics, R&D and medical tourism will be increased.	Gradually, investment on Korean pharmaceutical industry and Indian pharmaceutical industry will be increased in the form of strategic alliance or M&A. The activities of Korean pharmaceutical firms related to the development of generics will be transferred to India ultimately.
opportunities in international business	Chance of cooperation and partnership with R&D center in India can be expanded.	M&A and direct entry on pharmaceutical industry can be suggested.
Overall impact	limited	Medium

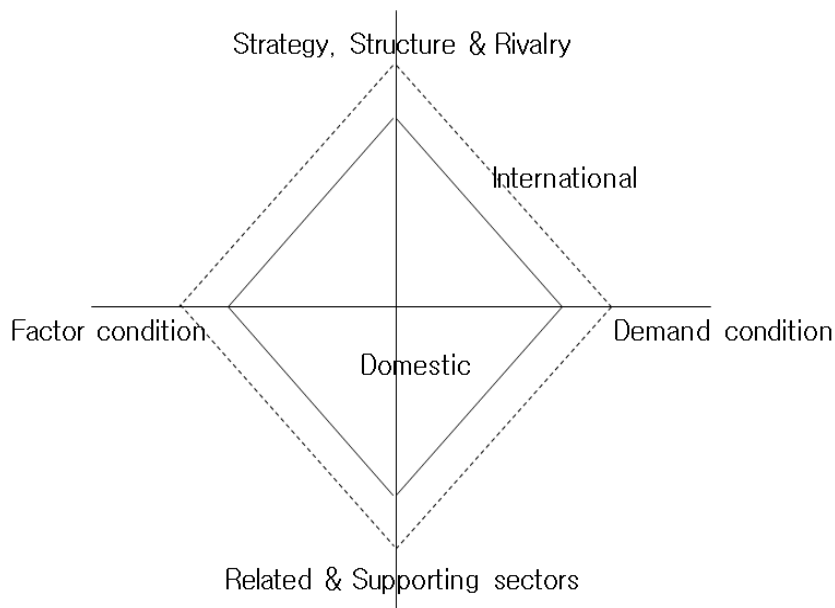
As a whole result of analysis, the impact of CEPA on Korean pharmaceutical industry seems to be minimal in short-term and shows medium in long-term since the contents with stronger influence like quick decrease or removal in trade tariff or permission of movement in medical professionals are not included but, in Korean pharmaceutical industry points of view, CEPA can play a role of momentum to draw big attentions on Indian pharmaceutical industry which have better global competitiveness.

IV. The Strategies to Enhance International Competitiveness of Korean Pharmaceutical Industry

As we've analyzed before, there will be no doubt internationalization of the pharmaceutical market will be the direction of future change arisen by CEPA or FTA although the impacts or changes owing to CEPA on Korean

pharmaceutical industry show minimal or medium level. Therefore, formulation of the strategies securing international competitiveness will be a must in survival at the domain of international business because Korean pharmaceutical domestic market will be no longer stable and profitable owing to CEPA or FTA. Thus the paper may suggest several ways to bring on international competitiveness by comparing the competitive advantages of Indian pharmaceutical industry with that of Korean industry, in viewpoints of "double diamond model" which is widely used in analyzing international competitiveness.

<Figure 1> The double diamond model



1. The Comparisons of Competitive Advantage

1) Factor conditions

(1) The drug development

In terms of generics, capabilities in research and development of Indian pharmaceutical firms show very high so the market shares of Indian firms like

Ranbaxy and Dr Reddy's in generics at U.S.A. which appears the largest market in the world are being increased, as shown in <Table 10>. On the other hand, there are no Korean pharmaceutical firms who are selling generics in U.S.A.

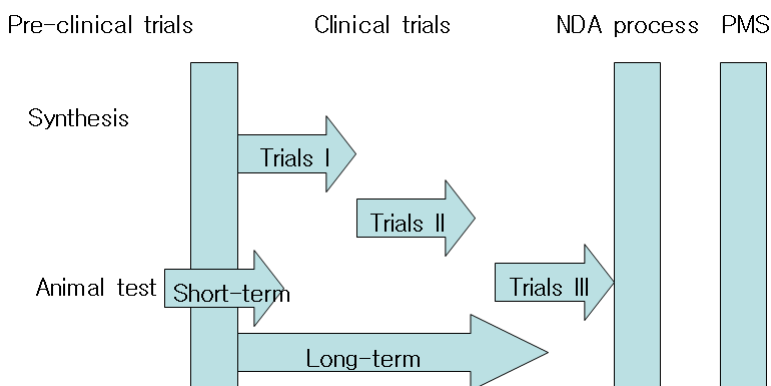
<Table 10> The market shares of generics by Indian pharmaceutical firms in U.S.A.

Year	Market Shares(%)
2005	1.9
2006	3.8
2007	5.9
2008	7.5
2009	7.4
2010	10.5

Source ; Datamonitor 2009

As displayed in <Figure 2>, the process of new drug development is so complicated and it takes around 13 years. The cost of new drug development is also huge which amounts from 100 million dollars to 400 million dollars, depending upon therapeutic areas.

<Figure 2> The Process of New Drug Development



In case of new drugs, India does not have any record yet to register new drugs in U.S. FDA(Food and Drug Administration) but Korea has record to register new drug in U.S. FDA whose name is "Factive" as quinolone antibiotics. As a result, Korea becomes 10th country which has record in new drug registration at U.S. FDA. In this regard, Korean pharmaceutical industry may have a little bit more knowledge and competence than India. (2) Manufacturing facilities

To export pharmaceuticals to U.S.A., one of minimum requirements is cGMP facilities which are considered as most advanced and safe pharmaceutical facilities. There are around 120 factories in India which comply with cGMP¹³⁾ in America. In other words, one of the nations that have many cGMP facilities next to U.S.A. is India. In the other hand, Korea has a few cGMP facilities.

In terms of the level of clustering manufacturing location, there are 9 pharmaceutical manufacturing clusters in Badhi, Haridwar and Ahmedabad etc of India, whereas Korea has only 2 clusters in Osong and Hyangnam.

2) Demand conditions

As shown in below-mentioned <Table 11>, Korea has ranked 10th country with 17 billion dollars in market size while India has ranked 14th country with 11 billion dollars in market size. In other words, total Korean pharmaceutical market size is still bigger than that of Indian market but Indian pharmaceutical market size may outstrip size of Korean market around 2015 as per the report by McKinsey & Co. The reasons behind this result will be mainly based on stiff increase of diabetic patients owing to eating habits and obesity. In addition to this, the number of patients who suffer from cardiac disease and high blood pressure will go up to total 100 million people.

The size of expenditure on pharmaceutical products may give a rise to 13-15% percent in 2015 from 7~8 % currently. Namely, the future potential

13) cGMP ; current Good Manufacturing Practice

on market demand of Indian pharmaceutical industry can be higher than that of Korean industry.

〈Table 11〉 The pharmaceutical market size by country (2009)

Rank	Country	Market Size (Billion U\$)
1.	U.S.A.	332.8
2.	China	121.6
3.	Japan	76.8
4.	France	41.4
5.	Germany	39.9
6.	Italy	26.7
7.	Canada	26.6
8.	Spain	22.2
9.	U.K.	21.7
10.	Korea	17
14.	India	11

Source ; IMS Health 2010

3) Strategy, Structure and Rivalry

(1) Strategic part

Indian pharmaceutical industry pursue internationalization strategy earlier since the price of Indian domestic pharmaceutical market appears very lower than that of any other markets relatively because there is no national health insurance system. As presented in 〈Table 12〉, the weightage of export in India shows almost same as sales amounts in domestic market. On the other hand, Korean pharmaceutical industries mainly focus on domestic market where they can enjoy reasonable level of profit and proper market demand. So the percentage of domestic sales revenue displays 90%.

In the meantime, opening of Korean domestic market owing to CEPA or FTA may bring serious competitions so many Korean pharmaceutical firms try to enter into foreign market but it should have been done much earlier.

〈Table 12〉 A Comparison of Percentage in Overseas Sales Revenue between Korea and India in Pharmaceutical Industry

	Korea	India
Domestic market	90%	48%
Overseas market	10%	43%
Tender business	–	9%

Source: IMS Health 2009

2) Structure part

The organization structure of Indian pharmaceutical larger firms like Ranbaxy, Dr. Reddy's and Cipla etc. are very much internationalized since they are conducting global operations in many countries like U.S.A., Japan and E.U. etc. On the other hand, Korean firms are using overseas distributors mainly to export their products.

3) Rivalry part

The intensity of rivalry by Indian pharmaceuticals shows much stronger because they're fighting in world market. But Korean pharmaceuticals are being operated in domestic level so level of competition are not so strong. If we compare the sales revenue of top three Korean pharmaceutical companies with that of top two Indian pharmaceutical firms, the difference in level of intensity of rivalry can be felt indirectly.

〈Table 13〉 The sales revenue by top 2 Indian and Korean pharmaceutical firms(2009)

Rank	Korea		India	
	Company Name	Amount(Mil,U\$)	Company Name	Amount(Mil,U\$)
1	Dong-A	728	Ranbaxy	2,937
2	Yuhan	572	Dr. Reddy's	2,811

Source ; Annual Report of each company 2009

4) Related & Supporting Sectors

(1) Government Healthcare Policy

Indian government policy pursues encouraging market competitions basically but they want to control some of matters like price control on essential pharmaceutical products. In the other hand, Korean government still keep partial openness policy so they do not allow establishment of profit-making hospitals and incorporation of hospitals.

In terms of intellectual property, Korea admitted material patent in 1987 but Indian government admitted material patent in 2005. Before 2005, India was a heaven for copy drug.

(2) Tax incentives

To motivate and boost R&D, Indian government deducts 150% of R&D amounts from income tax. Additionally, they exempt sales tax 3% and item tax 10% in economic free zone to encourage the establishment of pharmaceutical firms in economic free zone.

2. The Strategies to Enhance International Competitiveness of Korean Pharmaceutical Industry

1) Factor Conditions

The establishment of R&D center at India by Korean pharmaceutical firms can be a choice. In that case, Korean firms can take advantage of the competence in drug development which many Indian firms have. Especially, as India has diverse spectrum of human diseases, Korean firms can use those spectrum in conducting clinical trials. For example, the development of vaccines requires the clinical trials on new-born babies whom Korean firms do have much difficulty in securing but who are readily available in India. Next suggested strategic option will be CMO (Contract Manufacturing Organization) business. Rather than setting up upgraded manufacturing facilities, Korean firms can utilize many Indian facilities which already comply

with cGMP. Then Korean firms can also use educated professionals who already know U.S.A. manufacturing guidelines.

2) Demand conditions

If Korean firms enter into India, they can enjoy the market potential which India has.

In addition this, they can fill up market demands related to API which Korean pharmaceutical firms import by big quantities from India, as shown in <Table 14>.

Moreover it will be very attractive options for Korean firms which have good product portfolio for diabetic patients, heart disease and high blood pressure, as we notify before. Adding to this, Korean firms can also consider tapping into U.S.A market after learning proper international marketing knowledge from Indian partnering firms.

<Table 14> The status of Import and export countries by Korean pharmaceutical firms(2008)

	Active Pharmaceutical Ingredients				Finished Products			
	Export		Import		Export		Import	
	Country	U\$Mil.	Country	U\$Mil.	Country	U\$Mil.	Country	U\$Mil.
1	Japan	149	Japan	300	Vietnam	100	Swiss	368
2	U.S.A.	45	China	270	U.S.A.	96	U.S.A.	297
3	Germany	38	Italy	244	Pakistan	86	U.K.	236
4	China	37	Germany	195	Japan	70	Germany	222
5	India	29	France	157	China	38	France	163
6	Italy	29	U.S.A.	144	Bangladesh	34	Japan	146
7	Puerto Rico	22	India	103	Brazil	26	Belgium	119
Total		614		1,754		777		2,127

Source ; Korean Pharmaceutical Export and Import Association 2009

3) Strategy, Structure and Rivalry

The authority IMS Health estimates that the global generics market was worth U\$77 billion in 2009. With the total prescription market estimated to be worth U\$808 billion, generics account for about 10% of the total prescription market in value terms. Over the period 2005–2009, global generic sales increased at a strong CAGR(compound annual growth rate) of 10.3%. In comparison, sales of branded pharmaceuticals across the leading 50 branded manufacturers increased at a CAGR of 6%.

Strategic alliance or M&A with Indian pharmaceutical firms can be alternative options for Korean firms to gain international competitiveness and focus more on world generic markets. M&A case of Ranbaxy done by Daiichi Sankyo in Japan can be a good example for the suggested strategic options. Likewise Korean firms can target Dr. Reddy's for M&A or alliance. As you've seen in <Table 15>, Dr. Reddy's has complementary competence in terms of generics and API in Korean firms' point of view.

<Table 15> The sales revenue of generics and API(active pharmaceutical ingredients) in Dr. Reddy's (Unit ; Million Rs)

	2008–2009			2007–2008		
	Sales Revenue	Profit	% of Profit	Sales Revenue	Profit	% of Profit
API	18,758	5,595	30%	16,623	5,645	34%
Generics	49,790	30,448	61%	32,871	19,567	60%
Others	893	457	51%	512	196	38%
Total	69,441	36,500	53%	50,006	25,408	51%

Source ; Annual Report of Dr. Reddy's

4) Related and Supporting Sectors

Korean government can consider introducing tax incentives on the investment of R&D or M&A to encourage R&D on new drug development or a deal of M&A with Indian firms. To avoid conflicts in government policies

related to pharmaceutical industry and making a long-term plan, setting up control tower which means so called "National Strategic R&D Committee" is also suggested.

In the meantime, constitution of u-healthcare system through convergence of IT and pharmaceutical technology can be also reviewed. Introduction of telediagnosis through u-healthcare system can be good example to have global competitiveness.

V. Conclusion

Concluding CEPA or FTA by Korean government is inevitable under the situation of higher level of dependence on international business including export.

CEPA can also give more negative influence than positive influence because Korean pharmaceutical industry is inferior to Indian industry in many regards. Under the kinds of such circumstances, the paper examines the impact of CEPA on Korean pharmaceutical industry and suggests several ways to enhance international competitiveness. CEPA may bring some changes on Korean pharmaceutical industry in the long term. Therefore, the study suggesting various ways of survival for Korean pharmaceutical industry may become so meaningful.

Our findings on recommendable strategies for Korea are summarized in following <Table 16>.

<Table 16> The summary of suggested business strategies

	Suggested Business Strategies
Factor conditions	1. The establishment of R&D center at India 2. Introduction of CMO business
Demand conditions	1. Entry into Indian market to gain future market potential 2. Detour penetration into the largest U.S.A. market

Strategy, Structure and Rivalry	1. Strategic alliance or M&A with Indian pharmaceutical firms to have complementary competence
Related & Supporting Sector	1. Introduction of tax incentives on R&D or M&A 2. Establishment of u-healthcare system through convergence of IT and pharmaceutical technology

If Korean firms approach and recognize CEPA as a business opportunities rather than a threat by the concept of "out-of-the-box thinking", they can use the competence of Indian pharmaceutical industry as leverage to upgrade it. because Indian pharmaceutical industry has many complementary competencies in the viewpoints of Korean pharmaceutical industry.

Through above-mentioned business strategies, it can be expected that a Korean pharmaceutical firm who has more than 1,000 million dollars in sales revenue will come on the scene earliest as possible, after joining world generic markets.

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ABSTRACT

How to Enhance International Competitiveness of Korean Pharmaceutical Industry with CEPA as a momentum?

Park, Hyun Chae

CEPA(Comprehensive Economic Partnership Agreement, hereinafter CEPA) between India and Korea may influence some changes on Korean pharmaceutical industry which shows less competitive advantages than Indian industry in many regards. So the purpose of this paper remains on suggesting the way of enhancing international competitiveness for Korean industry on the basis of double diamond model.

Through the comprehensive and deep analysis, our findings on recommendable business strategies for Korea are as follows ; in terms of factor conditions, first, cooperative strategy in R&D for developing generics will be required. Second, Introduction of CMO business can be considered.

In terms of demand condition, Korean firms should find out the chance for demand creation in Indian market which has future market potential and American market exploration, as soon as possible.

With regards to strategy, structure and competition, trying M&A with leading Indian companies and utilizing well organized medical professionals in India will be considered.

In the points of related and supportive parts, lastly, Korean government should try to make so called "National Strategic R&D committee" for pharmaceuticals and bring u-healthcare service to Korea in the first place.

If Korean pharmaceutical industry implement above-mentioned strategies, CEPA can be turned into business opportunities from the crisis. As a result, Korean firms shall have more powerful global competitiveness eventually.

Key Words : CEPA, India, International Competitiveness