Integrated Knitwear Production for Hong Kong and the Interior of China*

Kin - fan Au (区健勋), Julissa Wai - kuen Lee (李慧娟)
Institute of Textiles & Clothing, The Hong Kong Polytechnic University, Hong Kong

Hong Kong knitwear manufacturers were among the pioneers to invest in the Pearl River Delta region of Guangdong, China. Owing to limitations on technological level at the time of the initial investments, the content of production - sharing for the Inland in China were basically of simple technology and labour intensive in nature. Through venturing hardships, the investment has been able to boost the economy of Guangdong and foster close trade relationship, especially in outward processing trade. By now, the co - operative production between the two places is becoming more mature and the trend has signified that Hong Kong established subsidiary firms in the Interior of China is taking up more responsibilities in the knitwear production pipeline. The mass development in infrastructure in the Interior of China and its impending accession to the World Trade Organization will further accelerate the pace of activity transfer.

***Keywords*:** *economic integration, co - operative production, knitwear supply pipeline, outward processing.*

Introduction

The Interior of China is currently the biggest clothing exporter in the world and together with Hong Kong (HKSAR), accounted for about 23 per cent of the global exports of the merchandise in 1998. On further analysing of the breakdown of clothing export items, it was identified that with the broad classification of knitted and woven clothing exports, HK has demonstrated a more competitive profilio for knitwear exports as a whole[1]. The Interior of China, on the other hand, has shown consistently that its share of woven garment exports fare better than the knitted counterparts. In 1996, HK recorded 14 and 13 per cent of the global knitted and woven garment exports respectively. The corresponding clothing export categories for the Interior of China were 12 and 16 percentages (Table 1). It is a common global scene which also applies to both the Interior of China and HKSAR that woven garments assume a higher value in terms of world export trade. While HK has secured a higher global market share in knitwear, especially with knitted outerwear garments; a difference of 17 per cent for HK and 12 per cent for the Interior of China in 1996 is visualized. The research has also identified that HK knitwear manufacturers are more responsive to the knitwear fashion market trend and thus considered to possess a better competitive edge in the clothing sector of knitted garment production and trading.

Table 1 Breakdown of the interior of China and Hong Kong global clothing exports in 1996 (in percentages)

SITC code	842	843	844	845	846	847	848
The Interior of China	17.6	14.4	15.8	11.8	12.3	11.6	21.7
Hong Kong SAR	10.1	13.6	12.2	16.9	11.3	8.0	11.8

842 ~ 844 : Woven garments; 845, 846 : Knitted garments; 847 : Textile & clothing accessories; 848 : Headgear and non - textile clothing
Source: Trade Statistics (United Nations).

Among the different provinces in the Interior of China, Guangdong is the one with the highest exporting record in clothings. The 1997 statistics showed that there were 4 391 clothing establishments employing 814 100 workers. These represented the topmost in terms of number of factories and manufacturing workforce employed in the province and generated a gross industrial output value of 41 018 million yuan (at current price)[2]. Export statistics also demonstrated that textiles and clothing constituted about 32 per cent of Guangdong's total exports. Comparison between the knitted and woven clothing categories indicated that the former took up about 46 per cent of the total garment exports in 1998[3]. While it is generally realized that the outstanding exporting performance in textiles and clothing for Guangdong Province would not have sustained without the investment, managerial and technical inputs from HK enterpreneurs. This paper intends to analyse further the existing and prospective manner of production co - operation and the future potential and development for HK and the Interior of China with reference to knitted garment production. For the sake of a generic meaning, the Interior of China mentioned in this

Received Jan. 1, 2000

paper generally referred to the Guangdong Province.

The Linkage between Hong Kong and Guangdong

1 Economic integration and foreign direct investment

Soon after China's opening up in 1979, the economies of the mainland and HK have become highly integrated. The two localities further developed to become each other's foremost partners in trade and investment[4]. Research have also made for studying HK and Guangdong relationship under the perspectives of political and cultural forces, institutional structure and development, the conclusion that derived is all these would favour the transition from market socialism to open economy and enhance the integration of HK and Guangdong[5]. Other than geographical location, the connections of the two places are tied up with kinship relations and cultural heritage. It is with these strong family relationship and business affiliations, that HK has emerged as the number one investor to the Interior of China as a whole, since the implemented open door policy to attract Foreign Direct Investment (FDI) in the late 1970s. In fact, HK textiles and clothing industrialists were pioneer investors in the Province ever since the adoption of the compensation trade policy in the early stage of China's opening up. Records showed that since 1983, HK has been the largest foreign investor and accounted for about 63 per cent of the total FDI in the Interior of China[6]. A Hong Kong Trade Development Council survey also indicated the invested figure is nearly 10 times that of the second Asian recipient of foreign investment from HK. The situation with Guangdong is even more concentrated with its sources of foreign capital came from HK (83%), followed by Taiwan (5.6%), Macau (3.1%), U.S.A. (1.6%) and Japan (1.4%)[7].

With anticipated increase in communication and transport requirements, the HKSAR government is planning to expand boundary crossing facilities between HK and Shenzhen. Other than the increase of cross-boundary links for road traffic, an extension of the KCR East Rail from Sheung Shui to Mok Ma Chau is intended for linking up Shenzhen's metro system[8]. The economic relationship between HK and the Interior of China is expected to gain momentum with the admission of China to the World Trade Organization (WTO). HK can position herself as the facilitator between the international market and the mainland with Guangdong as the hinderland.

2 Knitwear production integration, outward processing and certificate of origin

It was estimated that HK manufacturers employed about 6 million workers in Guangdong. Such a large industrial workforce has facilitated the production integration and sharing of production processes with the extensive factory network set up by HK industrialists. Taking the proximity advantage, Guangdong obviously has assumed the bulk of the outward processing operations under the auspices of HK firms. The phenomenon was further evident with HK's imports from Guangdong that related to Outward Processing (OP) accounted for 93 - 95 per cent of the total imports from the Interior of China involving OP[4]. In the case of OP for textiles and clothing, raw material inputs to Guangdong or the Interior of China are yarn and fabric for processing into finished fabrics and garments. On the other hand, OP trade accounts for about 70 per cent of HK's domestic exports of textiles and clothing and an increasing proportion of re-exports of the Interior of China origin through HK.

In general, the nature of knitwear manufacture is relatively labour intensive compared with other clothing products. The linking and stitching for certain parts of the knitted garment demands high manual dexterity skills. The abundant supply of young female labour for the processing and knitted panel manipulation is an advantage that can be vested with the mainland. The merit of labour exploitation together with its proximity to the HK's controlling headquarters further encouraged HK knitwear manufacturers to set up subsidiary production sites in the Pearl River Delta (PRD) and other Special Economic Zones (SEZs).

For the production of knitted clothing (similar to other manufactured products), there is a regulatory provision under the Certificate of Origin (C.O.) that permits the processing and assembly for certain parts of the knitted garment to be carried out in places other than the registered location of the origin manufacturer. To claim origin certification, the principal manufacturing process has to be conducted in HKSAR and the subsidiary processes can be taken up in the Interior of China under the Outward Processing Arrangement (OPA).

The mainland also promoted the OPA under two schemes known as 'processing with supplied materials' and 'processing with imported materials' with the latter demanding for duty of imported raw materials[9]. Interviews and information sources revealed that HK knitwear firms (textile & clothing in general) did not regard the Special Economic Zones (SEZs), i.e., Shenzhen, Shantou, Zhuhai, as the most favourable locations for setting up textile and clothing production subsidiaries in Guangdong, albeit most of their initial investments were started off in the Shenzhen SEZ at the early times of China's opening up. In terms of preference for textiles and clothing production arrangement and investment in the SEZs, Shantou has the highest share of production output (some investment also came from Taiwan industrialists), followed by Shenzhen and Zhuhai. Whereas many HK textile and clothing industrialists preferred to set up production sites in Dongguan, Panyu, Huizhou, Zhongshan, Jiangmen and regions of the PRD.

Research Methodology

The sampling frame for knitwear firms were taken from the Directory of Hong Kong Garment Industry 1998. A stratified random sampling was adopted and each strata chosen was based on the size of the company which reflected the number of employees, machines installed and the area of the factory plant. To comply with the random principle and in order to allow for differences in variability of the interested variable between strata[10], the sample firms from each strata were allocated on a disproportionate basis to the stratum size of 150. Questionnaires were sent by post or faxed to the company in the period between September and October 1998. After further follow up actions, a total of 65 questionnaires were received giving a response rate of 43.3 per cent. The questionnaire consisted of 3 parts. The first section was concerned with the general information and background of the company. The second section required the company to respond on the different activities of the knitting production pipeline related to HK and the Interior of China performance and potential on a 7 - point Likert scale. Also included were multiple choice questions inquiring about problems in connection with the pipeline activities, e.g. material sourcing. The third section contained open - end questions on the competitiveness and prospects of the knitting industry in HK and the Interior of China.

Interviews were also conducted with seven knitting companies around early 1999 using an unstructured format with guided questions. The content was basically concerned with the production details in the Interior of China in aspects of quality control, quota availability, managerial problems and the strengths and weaknesses in knitwear manufacture for HKSAR and the Interior of China.

Survey Results and Discussion

1 Current status

The following analyses on the responding results on section B of the questionnaire. The questions were set on the production of knitwear under the four headings of pre - production activities, production and related activities, sourcing and marketing activities and infrastructure development and supporting setups. Opinions related to both HK and the Interior of China for knitwear production with regard to existing situations and future prospects were solicited from the respondent. The results, in terms of scores, were then analysed by using paired T - test. Table 2 shows the comparison of the current status and realized performance on existing situation of knitwear production between HK and the Interior of China.

Table 2 Existing performance of knitwear production and marketing for Hong Kong SAR and the Interior of China

Activity/ Process	Mean score	Mean difference	t	Df	Significance level
Designing	5.40 (3.19)	2.21	9.688	61	* * *
Sample making	4.43 (4.73)	-0.3	-1.099	63	-
Knitted product development	4.75 (4.24)	0.51	1.708	62	-
Cutting process	4.40 (4.47)	-0.07	-2.06	57	-
Panel knitting	4.08 (4.95)	-0.87	-2.607	63	-
Linking	3.73 (5.18)	-1.45	-5.199	63	* * *
Quality control	5.16 (4.18)	0.98	4.319	63	* * *
Raw material sourcing & accessories	5.48 (3.63)	1.85	6.733	62	* * *
Merchandising functions	5.61 (3.20)	2.41	9.874	63	* * *
Fashion promotion	5.34 (3.56)	1.78	8.368	61	* * *
Marketing strategies	4.80 (3.77)	1.03	3.594	63	* * *
Quota availability	4.51 (3.03)	1.48	6.464	62	* * *
Export control system	5.63 (2.97)	2.66	11.257	64	* * *
Quick response & E.D.I.	5.34 (2.89)	2.45	14.038	61	* * *
Telecommunication, infrastructure & facilities	5.48 (3.68)	1.8	9.404	64	* * *
Logistics	5.68 (3.45)	2.23	8.987	61	* * *
Financing, banking & insurance	5.36 (2.77)	2.59	10.688	63	* * *

The Interior of China score in ( ); * * * Significant at 0.001 probability level; * * Significant at 0.01 probability level; * Significant at 0.05 probability level

The statistical analysis showed that currently HK is overwhelmingly advantageous with infrastructural development compared with the Interior of China in terms of quick response to market, logistical control, and service supports such as financial arrangements, banking and insurance. HK also excels in the merchandising activities of knitwear delivery coupled with an applausible export control system. Respondents agreed that HK is also merited in knitwear designing with its ready access to fashion trends and the international exposure of the local design talents as well as the inputs from world renowned designers. For production functions, sample making and other production and related activities such as quality control have already rested with the mainland which can provide cheap and plentiful supply of industrial labour. Linking, the joining of body panels, sleeves shoulder parts and collars together by the looping machine, however is still a privilege for HK in order to conform with the stipulated regulations of the C.O. for knitwear. While some of the activities mentioned in Table 2 are linked with absolute advantage for the Interior of China, e.g. the production process, HKSAR has a better priority in knitwear designing, these items will be excluded from subsequent analyses in Tables 3 – 5.

Table 3 Predicted performance of knitwear production and marketing for HKSAR and the Interior of China

Activity/ Process	Mean score	Mean difference	t	Df	Significance level
Sample making	4.00 (5.34)	– 1.34	– 4.023	64	* * *
Knitted product development	4.65 (5.03)	– 0.38	– 1.355	64	–
Material sourcing	5.17 (4.65)	0.52	1.872	62	–
Merchandising functions	5.38 (4.25)	1.13	4.675	62	* * *
Fashion promotion	5.33 (4.52)	0.81	3.394	61	* * *
Marketing strategies	4.84 (4.76)	0.08	0.274	62	–
Quota availability	4.58 (3.68)	0.9	4.554	62	* * *
Quick response & E.D.I.	5.71 (4.35)	1.36	7.417	61	* * *
Telecommunication, infrastructure & facilities	5.48 (3.68)	1.8	4.652	63	* * *
Logistics	5.56 (4.55)	1.01	4.865	61	* * *
Financing, banking & insurance	5.40 (3.65)	1.75	7.135	62	* * *

The Interior of China score in ( ); * * * Significant at 0.001 probability level

2 Anticipated shifts to the Interior of China

Table 3 indicates the analysis on the future performance capability on knitwear production for HKSAR and the Interior of China. Respondents expected that knitted sample making before mass production will be further resorted to the Interior of China. They also anticipated that China will also advance its infrastructural developments in the areas of telecommunication, banking and other supporting services. The open up will continue and conditions for investment are expected to become more welcoming and liberal to cope with the economy growth of the country as a whole. China's logistics arrangement will be improved with the growing consciousness of 'quick response' as demanded by customers. An interesting identification is that HK firms considered that the Interior of China will take a more proactive role in merchandising functions. Some of the activities which are traditionally vested with the HK firms will be shifted to the Interior of China, in particular are the activities that are closely linked with or follow up actions that relate to knitwear merchandising.

3 Can HK sustain competitiveness?

On the future prospects of knitwear production in HK, respondents believed that quite a number of the traditional activities or processes can only exhibit marginal advantages if these are continued to be performed in HK. Table 4 shows the activity analysis and indicated that HK can demonstrate better performance in sample making and sourcing of raw materials. While the former can be com-

Table 4 Existing and predicted performance of knitwear production and marketing for Hong Kong

Activity/ Process	Mean score		Mean difference	t	Df	Significance level
	Existing	Future				
Sample making	4.43	4.00	0.43	3.422	64	* * *
Knitted product development	4.75	4.65	0.1	0.629	63	-
Sourcing of raw materials & accessories	5.48	5.17	0.31	3.071	63	* *
Merchandising functions	5.61	5.38	0.23	2.590	62	–
Fashion promotion	5.34	5.33	0.01	0.173	63	–
Marketing strategies	4.80	4.84	0.04	0.000	62	–
Quota availability	4.51	4.58	– 0.07	– 0.704	62	–
Quick response & E.D.I.	5.34	5.71	– 0.37	– 2.718	61	* *
Telecommunication, infrastructure & facilities	5.48	5.70	– 0.22	– 2.676	63	* *
Logistics	5.68	5.56	0.12	1.656	61	–
Financing, banking & insurance	5.36	5.40	– 0.04	– 0.531	62	–

* * * Significant at 0.001 probability level; * * Significant at 0.01 probability level

plemented by HK designers who are more exposed to the international trend, the latter advantage is derived from the established relationships of HK knitwear manufacturers and overseas suppliers. The credit reliability also enhances the trust and procurement ability of HK firms. On the service side, HK garment manufacturing sector is highly regarded for its flexibility, rapid response capabilities, reliable quality and knowledge of markets and merchandise[11]. In terms of infrastructural development, HK still outweighs the mainland with the established set-ups and government's willingness to maintain HK as a business hubs for the Far East.

4 The Interior of China gains in functional role

On the assessment of China's potential, there is a total favourism for it to become a knitwear production centre. Opinions secured revealed that knitwear firms in the mainland are increasing capable in handling sourcing and merchandising functions. This has been the result of skills acquisition by the Chinese side from HK people. Through technology transfer, staff in China has been able to learn the technical and managerial aspects of production from HK personnel. With the opening up of China for retail opportunities and the growing contacts in international context, China is also getting momentum in the development of marketing strategy for exporting. Further to this, the service support is another aspect that is expected to signify great improvements. The pace for the infrastructural developments in terms of telecommunication, logistics and the platform for the facilitation of e-commerce through Electronic Data Interchange (EDI) is advancing rapidly in recent years. An example is the construction of the metro systems in Shenzhen, Guangzhou and Shanghai. Table 5 illustrates the strong potential of China's firms in knitwear production as envisaged by HK knitwear industrialists.

Table 5 Existing and predicted performance of knitwear production and marketing for China

Activity/Process	Mean score		Mean difference	t	Df	Significance level
	Existing	Future				
Sample making	4.73	5.34	-0.61	-5.724	63	* * *
Knitted product development	4.24	5.03	-0.79	-6.266	62	* * *
Sourcing of raw materials & accessories	3.63	4.65	-1.02	-6.970	62	* * *
Merchandising functions	3.20	4.25	-1.05	-7.959	62	* * *
Fashion promotion	3.56	4.52	-0.96	-7.382	61	* * *
Marketing strategies	3.77	4.76	-0.99	-6.819	62	* * *
Quota availability	3.03	3.68	-0.65	-4.547	61	* * *
Quick response & E.D.I.	2.89	4.35	-1.46	-8.628	61	* * *
Telecommunication, infrastructure & facilities	3.68	4.77	-1.09	-8.068	63	* * *
Logistics	3.45	4.55	-1.1	-8.095	61	* * *
Financing, banking & insurance	2.77	3.65	-0.88	-7.598	62	* * *

* * * Significant at 0.001 probability level

The Evolving Model of Knitwear Co-operative Production

HK knitwear manufacturers similar to enterpreneurs of other local industrial sectors, are equipped with strengths in production and market flexibilities. They have good knowledge of the international markets, cope with fashion trends and willing to attend to customer requirements in different markets. In the competition war with other low cost suppliers, they seek for cheap production sites worldwide. The Interior of China, in particular Guangdong is a favourite site for setting up production subsidiaries. Through such venture practice, they are able to gain experience in co-ordinating clothing production in a remote site which involves labour management and the logistical supply of raw materials and accessories typical for the assembly processes of knitwear production. Instead of the reputable 'made in HK' label, they are more emphasising and concentrating efforts on the 'made by HK' logo[12]. HK is firmly established as a sourcing and marketing centre of clothing in the Far East. The prospect is visioned as service-oriented development for the establishment of a one stop shopping centre for overseas clothing buyers. Fig. 1 illustrates the developmental production co-operation between HKSAR and the Interior of China for knitwear production. Activities are slipping downward to the inland rather than moving up towards the HK firms.

On the inland side, the processing functions of the supply pipeline is ascertained with its favourable factors of production. HK's smaller knitwear manufacturers and sub-contractors, lacking in design and resources inputs, are more inclined to rely on production capacities in the PRD region. This further accelerated the production shift across the border. Proper training and experience effects have resulted in more activities being taken up by the staff in the mainland subsidiary. Following the transfer of processing operations, other technical and managerial tasks including sample making, quality control, merchandising, and other supporting activities will be gradually assumed by the administration of the factory in the

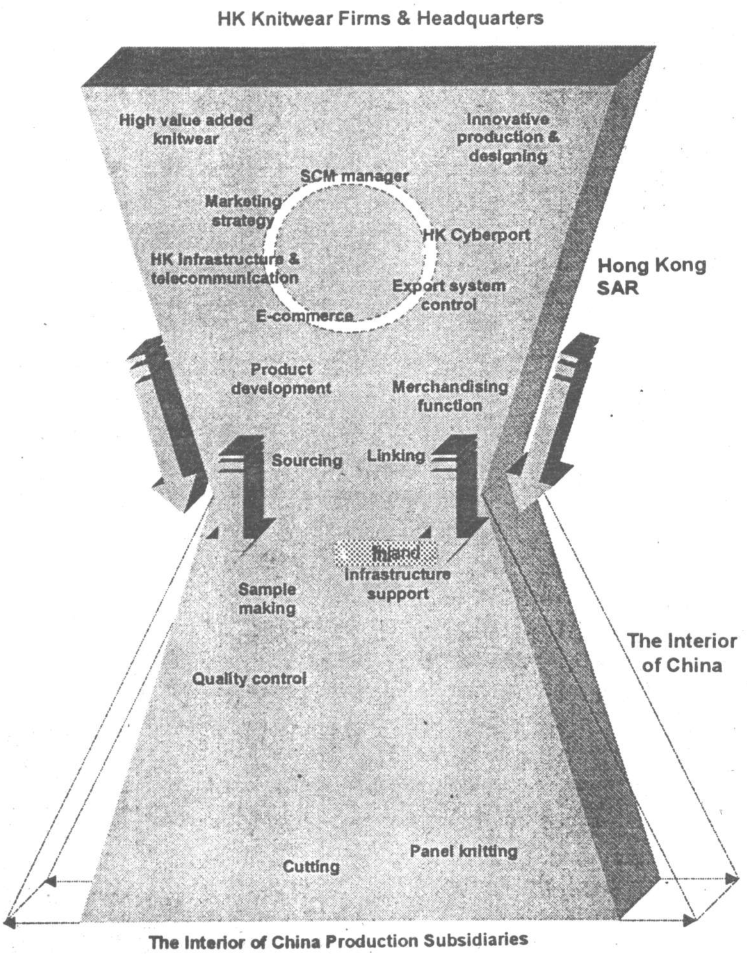

Fig. 1 An integrated model of knitwear production for HK and the Interior of China

Interior of China. The magnitude of work and responsibilities are growing steadily with the gradual development in infrastructure and other supporting facilities. A significant structural change is anticipated with the entry of China to the WTO and the abolition of export quotas in 2005. By then, mainland companies will be more exposed to the outside world. Other than direct contacts with potential clients and vendors, they can further proliferate into the strategic and decision making activities of business transactions.

Conclusion

Despite the inherent competitive positioning, HK knitwear manufacturers are losing advantage in the labour intensive processing of knitwear. To compensate for this, companies have been transferring the pre – production and production activities to the Interior of China in order to alleviate the impact on the high cost for local production. The survey has shown that HK will be relatively backward in the four aspects of comparison for processing and infrastructural development compared with the Interior of China. The situation is expected to be even more threatening with China's accession to the WTO. A breathe – breaking blessing that may be helpful is that quotas are not to be abolished until 2005. HK region should accelerate the pace of development in service – enhanced production and exercise great efforts to assume control on the software of the supply chain with the co – ordination function as a major role of the HK headquarter. Above all, HK knitwear manufacturers should aim at cultivating innovative designs, improved functional and quality technology for developing high value – added products with desirable attributes to attract customers in order to sustain competitiveness and face future challenges.

Acknowledgement The author wishes to express his appreciation to The Hong Kong Polytechnic University for providing research grant to support the survey part of the study.

References

[1] AU KF, *Research Journal of Hong Kong Institution of Textile and Apparel*, 1998, 2(1), 88 – 97.

[2] Guangdong tong ji nian jian, 1999, Zhong – guo tong ji chubanshe, Jiangxi.

[3] *Guangdong Socioeconomic Statistics Monthly*, 1999, May, Socioeconomic Statistical Information Service Center.of Guangdong.

[4] Sung YW, *Hong Kong and South China: the economic synergy*, 1998, City University of Hong Kong Press, Hong Kong.

[5] Kwok RYM and Ames RT, '*A Framework for exploring the Hong Kong – Guangdong Link*', in Kwok RYM and So AY (eds.), *The Hong Kong – Guangdong Link, Partnership in Flux*, 1995, Hong Kong University Press, Hong Kong.

[6] Fung KC, *Trade and Investment: Mainland China, Hong Kong and Taiwan*, 1997, City University of Hong Kong Press, Hong Kong.

[7] Lau PK, '*Industry and Trade*', in Yeung YM and Chu DKY (eds.), *Guangdong: Survey of a province undergoing rapid change*, 1998, Chinese University, Hong Kong.

[8] Tung CH, '*Quality People Quality Home: Positioning Hong Kong for the 21st century*', address by the Chief Executive – the Hon. Tung Chee Hwa, at the Legislative Council on 6 October, 1999.

[9] Strange R, '*Trade and Investment in China*', in Strange R, Slater J and Wang L (eds.), *Trade and Investment in China: the European Experience*, 1998, Routledge, London.

[10] Moutinho L, Goode M and Davies F, *Quantitative Analysis in Marketing Management*, 1998, John Wiley & Sons, New York.

[11] Enright MJ, Scott EE and Dodwell D, *The Hong Kong Advantage*, 1997, Oxford University Press, Hong Kong.

[12] Berger S and Lester RK (eds.), *Made by Hong Kong*, 1997, Oxford University Press, Hong Kong.