ISCTE IUL

Instituto Universitário de Lisboa

A Procurement Adjustment Strategy for FDI Enterprises: A Case Study under the Belt and Road Initiative

LI Zhen

Thesis submitted as partial requirement for the conferral of the degree of

Doctor of Management

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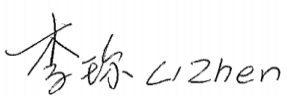
Signed 

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Abstract

This study combines international trade theories, purchase management theories and SWOT analysis together. Based on these theories, this study firstly finds the problems in multinational procurement management and then studies how multinational enterprises (MNEs) select their procurement strategy for the procurement of raw materials under the Belt and Road Initiative (BRI). Also, this study takes Group A as a case company to perform a detailed analysis on.

Contributions of this study are as follows. Firstly, from the macro level, the current research is mainly about the purchasing behaviours and procurement management in MNEs especially the procurement management in MNEs. However, this study conducts a micro level analysis of a specific enterprise, taking Group A as a case study. Secondly, combined with the MNEs location choice and procurement management, this study analysed, in particular, the localised purchase management models. Thirdly, by taking Group A as an example, the author constructed a dynamic mechanism of its procurement management selection mode combined with corresponding data of raw material procurement costs. Fourthly, the study analysed the motivation of procurement management shifts and discusses the possible new growth engine of Chinese MNEs and the localisation selection of MNEs.

Keywords: The Belt and Road; FDI Enterprises; Procurement Strategy; Group A

JEL: M16; D23

Resumo

Este estudo combina teorias referentes ao comércio internacional com as teorias de gestão de compras e a análise SWOT. Com base nessas teorias, este estudo investiga primeiramente os problemas na gestão de aquisições das empresas multinacionais e, em seguida, estuda como as EMNs selecionam a sua estratégia de aquisição para a compra de matérias-primas tendo em consideração a Belt and Road Initiative (BRI). Além disso, esta tese toma o Grupo A como um exemplo para realizar uma análise detalhada.

As contribuições deste estudo são as seguintes. Em primeiro lugar, as pesquisas existentes preocupam-se, a um nível macro, com os comportamentos de compra e gestão de aquisições em empresas multinacionais. No entanto, este estudo conduz uma análise mais ao nível micro de uma empresa específica, tomando o Grupo A como um estudo de caso. Em segundo lugar, combinando a escolha da localização das EMs e a gestão de aquisições, este estudo analisa o modelo de gestão de compras. Em terceiro lugar, tomando o Grupo A como exemplo, o autor constrói um modelo dinâmico de seleção e gestão de compras combinando os dados correspondentes aos custos de aquisição de matéria-prima. Em terceiro lugar, o estudo analisa a motivação das mudanças na gestão de compras e discute o possível motor novo de crescimento das empresas multinacionais chinesas e a seleção da localização das empresas multinacionais.

Palavras-chave: A Iniciativa Cinturão e Rota; Empresas de IDE; Estratégia de Compras; A Empresa

JEL: M16; D23

摘要

本文以现有中外学者在企业国际化理论、采购管理理论和 SWOT 分析法方面的研究成果为基础，结合目前“一带一路”新型政治经济环境，以 A 集团作为案例公司，深入分析其作为跨国企业在面粉原材料采购管理方面存在的问题，探讨其在华跨国企业原材料采购的战略模式选择问题。

本文的贡献主要表现为：首先，目前关于跨国企业采购管理尤其是跨国公司的采购管理方面的研究多数从宏观层面研究企业采购行为，而本文将从微观层面入手，以某一跨国企业为例进行微观层面的分析；其次，本文将结合企业国际化理论、采购管理理论和 SWOT 分析法三方面进行分析，关注跨国公司本土化的采购管理模式研究；再次，本文以 A 集团为例，结合其原材料采购成本的相应数据，构建其采购管理模式选择的机制，为在华跨国企业新增长动力的选择和跨国企业本土化提供新的理论和实际依据。

本文的主要结论为案例公司应当以下几方面：重视采购部门；完善采购信息系统；严格规范采购标准，权责明确；强化对采购人员专业性的培训，规范采购人员行为；拓展外部采购信息的来源，增加对跨国采购信息的搜集；建立跨国采购的风险规避机制，降低跨国采购的风险。

关键词：“一带一路”；外资企业；采购战略；A 集团

JEL: M16; D23

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Chapter 1: Introduction

1.1 Research backgrounds and significance

1.1.1 Research backgrounds

Since the beginning of the 21st century, with the deepening of international capital flows, policy reform, opening up and the transition to a market economy, China has gradually become the most attractive recipient economy for outward direct investment globally. According to the "Global Investment Trend Monitoring Report" released by the United Nations in 2015, China reported total inbound investment of 119.6 billion U.S. dollars (excluding banking, securities and insurance) in 2014, an increase of 1.7% over the same period a year before. For the first time, China's inflow of foreign capital exceeded that of the United States (Li, 2015). Foreign direct investment (FDI) and the development of transnational corporations in China bring with them advanced technology, organisational and management experience as well as providing the essential elements for Chinese economic growth (Yao, Feng, & Wei, 2006).

However, China's manufacturing industry is dominated by labour and resource-intensive industries and has long been at the low end of the international value chain. Global political and economic changes, as well as the optimisation and upgrading of China's economic structure, has brought significant adjustment to China's development model. The rise of input prices and the opening up to the international market will surely affect the production and development of FDI and domestically-funded enterprises further still. In recent years, due to the increase of labour and land costs, slowdown of Chinese economy and other factors, a small number of multinational corporations (MNCs) have changed their business strategies in China, some have even shut down factories. For example, Nokia recently shut down two handset factories in China and Japan's Matsushita also said it will withdraw two colour TV production lines from China soon (Zhu & Wang, 2016). Although the withdrawal of individual foreign-funded enterprises does not attest to a massive flight of foreign capital from China, we cannot ignore the fact that foreign-funded manufacturing enterprises are finding it difficult to continue producing in China as they did previously. As such, it is important for foreign-funded enterprises in China to evolve their production and business

strategies in this new business environment, to ensure success in the future.

On the other hand, China recently raised a new national strategy plan, the Belt and Road Initiative (BRI), which also has tremendous impacts on the external economic environment faced by multinational enterprises in China. The BRI is a top-down regional cooperative development framework proposed by China. It aims to meet the common needs of countries along the proposed routes and opens new windows of opportunity to promote complementarity and market liberalisation. It is a new platform for international cooperation. With the introduction and implementation of the new the BRI strategy, consumer and input sourcing markets have expanded geographically, target markets have diversified, competition has intensified and the production information available has increased considerably.

Group A is a relatively early manufacturing FDI company in China and a MNC with three branches on Mainland China - Ningbo, Zhuhai and Tianjin. The areas developed cover the coastal areas of East China, South China and North China and the group's primary interests are in pulp and paper, finance, agriculture and food processing, real estate, mining and mobile communications. Group A has a solid traditional manufacturing foundation and Group A's raw material purchasing costs account for more than 68% of its total cost of production. In the context of the BRI, the prices and sources of raw materials available are bound to affect their total cost of production in new ways.

The well-known management guru Peter Drucker believes that strengthening procurement management, by reducing procurement costs and increasing profitability, will become the third source of profit for enterprises. He holds that the level of procurement costs determines product prices and market competitiveness. Keeping control of procurement costs has increasingly become an important factor determining the profits of enterprises, affecting the competition, survival and development of the entire enterprise (Ma, Lin, & Chen, 2000). Therefore, under the new background of the BRI, studying how to strengthen Group A's management of purchasing costs and how to improve controlling over purchasing costs generally, both for manufacturing-oriented foreign-funded enterprises and domestic-funded enterprises, has great practical significance.

1.1.2 Research significance

As China gradually becomes one of the most attractive destination countries for foreign capital and as circumstances both at home and abroad undergo significant change, MNEs in China will face challenges and pressures throughout the development process. This research

takes Group A as a case study and studies its raw material procurement management practices as the research focus. This has important theoretical and practical significance for foreign-funded manufacturing enterprises in China and foreign-funded enterprises in China more generally.

1.1.2.1 Theoretical significance

Firstly, the study is based on the Enterprise Internationalisation theory and related Procurement theories. This research studies the survival and development of manufacturing MNCs in China, using Group A as an example. This will help to enrich and improve theoretical research on manufacturing MNCs and MNC procurement strategies. We provide theoretical guidance for enterprises to better internationalise and broaden multinational manufacturers' purchase management decision making processes. Since the beginning of the twenty-first century, the global strategic layout and "localisation" of multinational corporations has become a focus of common concern for governments and academic circles around the world. However, in China these studies mainly focus on the impact of FDI on Chinese economic growth (Yao et al., 2006; Gao & Kang, 2006; Liu & Li, 2013), the locational choice for FDI enterprises (Krugman, 1980; Yue & Fan, 2014; Yan, 2014), the difference in productivity between domestically-funded and foreign-invested enterprises and achieving "localisation". As such, bringing new theoretical perspectives (procurement internationalisation) and research methods to interpret FDI provides great value, especially for large emerging economies such as China, where it has even more far-reaching significance.

This study reviews the relevant theories of enterprise procurement in existing literature and conducts an in-depth and systematic study of corporate purchasing behaviour theory. It reveals the inherent mechanisms and developmental laws of a corporate purchasing organisation and operation, then attempts to solve a series of key problems faced in corporate purchasing. This offers great theoretical significance by enriching and improving modern enterprise procurement and supply chain management theory, deepens the research on raw material procurement cost control for manufacturing multinational enterprises and promotes management quality and the market competitiveness of multinational enterprises.

1.1.2.2 Practical significance

For a long time, research on multinational corporations at the macro level has concentrated on its impact on the economic growth of a country or a region. On the micro level, however, research has focused on the motivations of FDI location selection,

"Localisation" and going-concern research. When a small number of foreign-funded enterprises withdraw from the market, it could easily arouse panic of "foreign capital flight" and affect the decisions of other FDI enterprises, in addition to their own production and operational decisions.

As a manufacturing-oriented foreign-funded enterprise, Group A not only possesses the characteristics of all other manufacturing-oriented foreign-funded enterprises in China, but also possesses the characteristics of foreign-funded enterprises in China generally. Group A is thus a relevant subject for case study. This study analyses Group A's purchasing strategies on the background of the BRI. It incorporates FDI business operations, in particular purchase management, into a dynamic, external environment, which differs from previous static purchase management approaches. This helps FDI companies adapt to changes in the global political and economic environment, on the background of the optimisation and Chinese structural reforms. It will also aid companies to adjust to the new mode of development, relieve the pressure of rising global commodity prices, rising labour and land costs and ensure they can promptly respond to ever-changing international market conditions.

At the same time, purchasing is an important field of study for internal production processes. The cost of raw material procurement in manufacturing enterprises directly affects enterprise profits. The quality and efficiency of procurement processes determine the value of the final product and the overall market competitiveness of the enterprise. For manufacturing-oriented Group A, establishing a professional and coordinated procurement management model, strengthening the management of external resources and risk control, paying attention to the development of strategic cooperative relations and developing long-term and stable relationships with suppliers, are new trends the business must focus on.

Therefore, working from Group A's current management and raw material procurement cost control processes, this work summarises the characteristics of raw material supply, analyses the issues in raw material purchase cost control and investigates the influencing factors of purchasing cost based on questionnaires and interviews. It analyses the main factors affecting the purchase cost of raw materials for flour; as a traditional food manufacturing enterprise, "Flour" is the key raw materials for Group A's food production. This study proposes raw materials procurement cost control management from four aspects: procurement planning, supplier selection, procurement implementation and raw material inventory. Through the research in this study, scientific and practical management measures for Group A's raw materials procurement cost controls are offered, along with references for

multinational raw materials procurement cost control management for the industry as a whole.

1.2 Research contents and ideas

1.2.1 Research contents

Based on the author's abundant professional working experience in raw material procurement management within Group A, as well as relevant purchasing theories, this study analyses current situation regarding the problems associated with raw material procurement, how to control procurement costs for Group A and how to establish a new raw material supply chain across countries. By detailing a process of multinational procurement and supply management pricing, Group A can reduce the purchasing costs of raw materials to promote the market competitiveness of their goods. The specific contents are as outlined below.

Chapter 1, the introduction, provides a brief discussion of the research background, research significance, content and methods. The chapter also introduces the basic research framework used in the case study.

Chapter 2 examines existing literature, collecting related theories, including International Trade theory, Enterprise Purchasing Management theory, Enterprise Internationalisation theory and SWOT methods. The review of these theories leads to the research content and the emphasis of the study.

Chapter 3 discusses research methods and data. This chapter describes the design, implementation and processing of interviews and questionnaires and studies the internal and external environment of this case study's procurement practices from different perspectives and for various objectives.

Chapter 4 analyses the current environment for enterprise procurement under the BRI. Taking Group A as a case study, this chapter analyses Group A's business status and current procurement management practices in relation to the new policies of the BRI (analysis of the supplier questionnaires) by identifying existing problems in the procurement process. In conjunction to this, SWOT methods are used to analyse the opportunities available in flour procurement and the new opportunities and threats to raw material procurement. Finally, using the Analytic Hierarchy Process and with the construction of a Judgment Matrix, an appropriate purchasing selection decision model for Group A that can be used for reference in future selection processes is proposed.

Chapter 5 draws conclusions on the main research topic and summarises the main contributions of this study, identifying problems that require further investigation.

1.2.2 Research method

This research is conducted with various methods, including literature study, interviews and questionnaire survey, SWOT analysis and the Analytic Hierarchy Process analysis.

Firstly, through deep literature study, this study collects information related to procurement theories, develops a specific theory for this study from existing procurement related theories and literature. Also, this study uses the deductive method and inductive reasoning to analyse some basic theory. This study collates and analyses theories and ideas of enterprises' procurement cost control and management and it summarises existing research findings as the basis of this study.

Secondly, this study collects information related to procurement of Group A through questionnaire survey and interviews. The author then undertakes empirical analysis on the purchasing cost control of Group A. In addition, the study analyses the important determinants of purchasing cost with flour procurement for instant noodle production as an example and it investigates the advantages and disadvantages of flour purchasing business for Group A. The author also analysed external and internal environmental changes of flour procurement for Group A with the BRI as background. Combining the important determinants mentioned above, the study further analyses opportunities and challenges that these changes may bring to the flour purchasing business and discusses what strategic adjustment options Group A should take according to the related purchasing management theories.

Thirdly, the study empirically analyses data at both macro-level and micro-level related to purchasing cost control of Group A. The study then studies strategy and actions to promote procurement cost control of Group A through qualitative and quantitative analysis.

Lastly, the Analytic Hierarchy Process (AHP) method is used to analyse the optimal choice among suppliers. In the analysis, both the cost and quality of raw materials, the rate of timely delivery, on time demand response and capability are considered. The author tries to select the best supplier based on multiple targets and the information from the survey on Group A's suppliers. Specific factors for supplier selection are also investigated with the discrete choice model.

1.2.3 Research ideas and framework

Considering the BRI, this case study aims to examine how Group A can achieve a cross-regional sourcing strategy through the purchasing operation process. Furthermore, this study identifies how Group A adjusts and reduces purchasing costs, optimises procurement resource allocation and improves market competitiveness and the competitiveness of its products. Combined with the analysis of relevant global purchasing theory and with reference to the relevant research results at home and abroad, this study identifies and analyses the aforementioned problem and proposes solutions to tackle it. Finally, this study investigates global purchasing strategies and strategic adjustment to improve and optimise competitive advantage under the BRI.

In order to more clearly show the structure and methods deployed in this work, Figure 1-1 presents the overarching framework employed. The structure reflects the relationship between the chapters and the research ideas.

1.3 Summary

This chapter has introduced the issues investigated in this case study, showed the purpose and significance of the research and introduces the research methods and principles employed in the overall structure of the study.

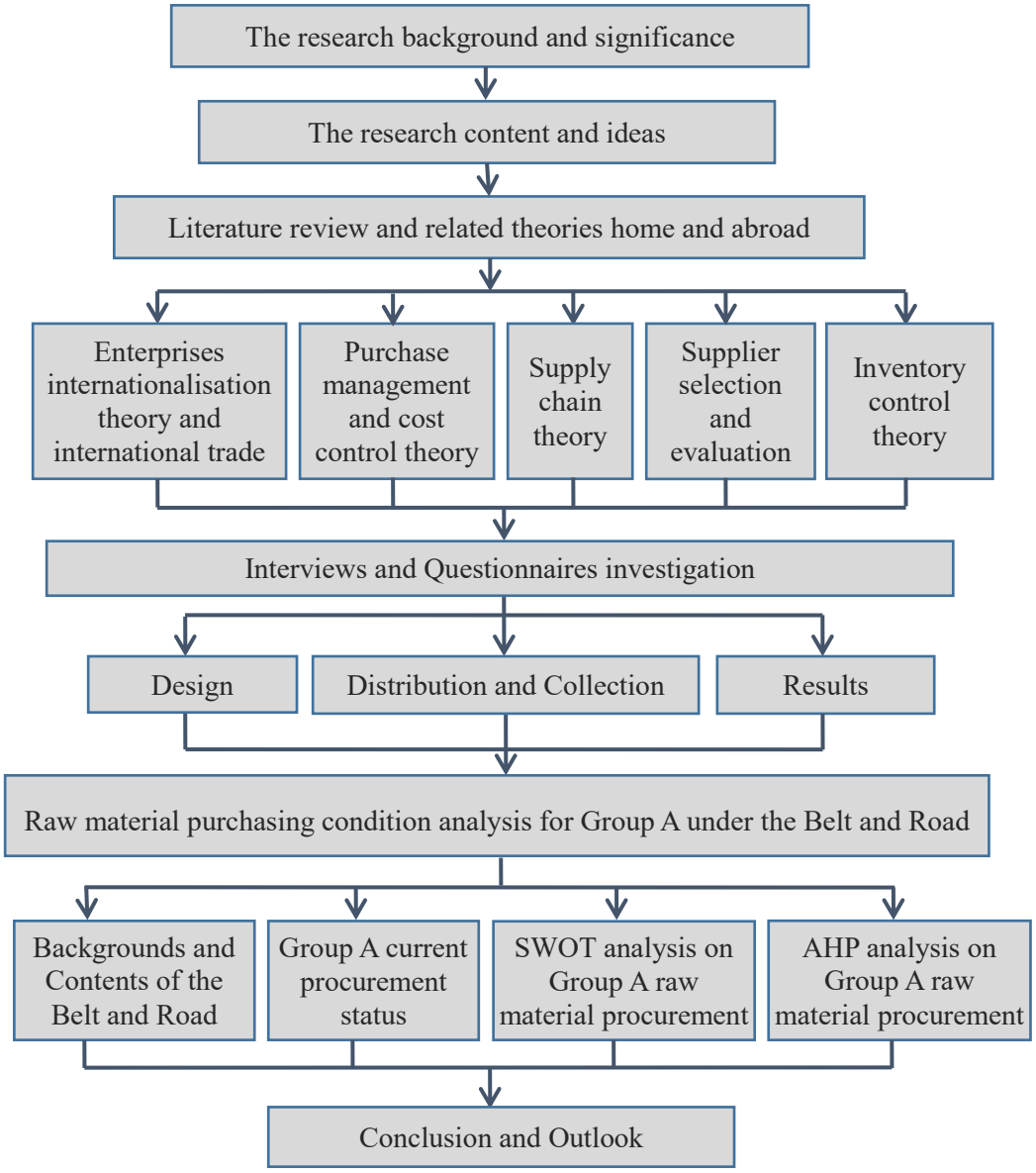

Figure 1-1 Framework

Chapter 2: Literature Review

2.1 Definitions

2.1.1 Internationalisation of enterprises

Enterprise Internationalisation can be seen as an enterprise to participate in the international division of labour. An enterprise can extend from the domestic market to the international market and subsequently see the extension from domestic enterprises to develop multinational companies. Broadly speaking, the internationalisation of enterprises reflects competition and cooperation of products, services, technology, labour, management and enterprises. Narrowly speaking, enterprise internationalisation aims to invest abroad, set up production and operation institutions and ultimately extend development, production and marketing capabilities internationally. Accordingly, the internationalisation of enterprises can be divided into 2 parts. The first one is about the output of goods and services and this refers to export of goods, services, technology and labour. The second one is about the output of capital and this refers to foreign direct investment and multinational companies (Zhao, Gao, Zhou, & Liu, 2010).

2.1.2 Multinational enterprises and business

According United Nations Commission on Trade and Development definition, transnational corporations are economic entities that establish branches in two or more countries, co-ordinate decision making and control by parent companies and engage in cross-border production and business activities (Chu, 1996). Multinational companies have three characteristics: strategic global trans-nationality, management concentration and internal interconnection. Firstly, from the transnational perspective, multinational corporations engage in cross-border investment and business activities; however generally there is a parent company involved in business control of subsidiaries through ownership or other means. Secondly, from the management concentration perspective, multinational companies develop strategies from the interests of the entire company, from not only a branch or a region. Lastly, from a global perspective, the companies decide production, sales, development policies and other strategies. Therefore, the global strategy of multinational companies is developed by the

parent company and the parent company's decision making centre has a high degree of centralised management across the entire corporate entities. Again, from the inter-dependability within the company, multinational companies are formed by the entities in the country. The parent company and subsidiaries share a close relationship; some entities can share knowledge, resources and responsibilities with other entities.

Transnational business is a series of activities in which enterprises transcend the sovereignty of a country and transfer international economic resources such as goods, labour and capital. Transnational operation is the inevitable result of the development of the domestic and commodity economy; the material production process and the market are two basic conditions for realising the expansion of production. In the commodity economy, material production process breakthroughs in the traditional national boundaries show the process of internationalisation of the commodity economy in organising the production and circulation of goods. Enterprises, as a commodity economy in the transformation of resources, need to survive relying on the world market directly or indirectly and they need to achieve the expansion of production while relying on the world market. Multinational business has two basic elements. The first basic element is the foreign direct investment and this kind of activities emphasises the control exerted by enterprises, often via ownership of subsidiaries. The second basic element is the optimisation of resources and enterprises will aim to set up factories where the business conditions are most profitable (Du & Bai, 2008).

2.1.3 Purchasing and procurement management

Procurement refers to how an enterprise obtains products or services as their resources from the supply market under certain conditions. That is an operating activity in order to guarantee the successful operation of an enterprise. From a narrow perspective, procurements involve a buyer finding a supplier in accordance with the enterprise's requirement planning and followed by price negotiations and other related provisions, contract signing and receipt of the final payment thereafter. Broadly speaking, in order to meet the needs of business activities, the enterprises obtain the ownership and use of goods and services by purchasing, lease, loan, barter and various other financial arrangements (Dou, 2012). We will now discuss the purchasing activities under the narrow definition mentioned above.

The procurement management of enterprises is the activity which takes the highest efficiency and lowest cost as the goal to meet the business's own needs. To ensure proper quality conditions from the appropriate suppliers, the principle of Five Rights are used: the

right suppliers, the right quality of goods, the right time, right prices and right quantity of goods or services (Yan & Chen, 2003). It is the planning, organisation, implementation, control and improvement process of suppliers, raw materials, procurement staff, procurement organisational structure and all the relevant factors.

Under the new BRI, this study studies the strategic models of how FDI enterprises purchase raw materials with the Group A as the case firm to study its purchasing activities. On one hand, international trade theories explain the inevitability and rationality of trade, foreign investment and multinational corporations and these give theoretical support in selections and flow of factors for multinational enterprises and cross-regional enterprises. On the other hand, the purchasing management theory illustrates the necessity of production factors, management behaviour and the importance of sources of corporate profits from the micro-economic individual enterprise level. This can provide theoretical support for internal behaviour of enterprises. As such, this study reviews existing literature in international trade and enterprise purchasing management and takes these reviews as its theoretical basis.

2.2 Reviews and comments of international trade theories

The research of enterprise internationalisation theory is based on the cross-border business behaviour of enterprises which has been developed gradually since the 1950s. With the continuous development of the world economy, the increasing internationalisation of production and capital and the increasing content and form of cross-border activities, multinational corporations and their international direct investment have seen rapid growth far exceeding that of international trade. Additionally, the speed of international investment has become the leading force in the development of the world economy so the theory of internationalisation of enterprises, especially multinational corporations, is also in constant development.

The theory of internationalisation of enterprises has studied the international development of enterprises from the following three different routes (Lu, 2003). Firstly, from the perspective of business management, the international development of enterprises stage theory is mainly formed by transnational business behaviour and internationalisation process. Secondly, based on the theory of industrial organisation, with the condition of imperfect competition, the international direct investment theory of transnational corporations is the main body of this research route. Thirdly, based on the theory of international trade, the

internationalisation theory of international trade and investment is the main body of this research route.

2.2.1 Theory of internationalisation of enterprises

2.2.1.1 Theoretical connotation

In the 1970s, several scholars at the Uppsala University in Sweden, Johanson and Wiedersheim-Paul (1975), Johanson and Vahlne (1977) established the internationalisation theory in the process of internationalisation of Nordic enterprises. Because these scholars are mostly from the prestigious European Uppsala University in Europe, so the theory is also known as the Uppsala theory or Uppsala model (Uppsala Model, referred to as U-M). The development of the theory has gone through three stages.

In the first stage, during 1975, on the basis of study of four Swedish companies, Johanson and Wiedersheim-Paul found the internationalisation four-stage model. They held that the nature of multinational companies would go through an “irregular export behaviour -- through independent agents or intermediaries for export -- the establishment of overseas sales subsidiaries -- overseas production” process.

In the second stage, based on the study of the relationship between knowledge and market promises, Johanson and Vahlne developed the Uppsala progressive internationalisation model. The Uppsala progressive internationalisation model combines the theory of corporate behaviour proposed by Cyert and March (1992) in previous studies; that is, the organisation can grow like a person through learning. This kind of research regards internationalisation as a product of increasing market commitment, assuming that knowledge is a major obstacle to internationalisation of firms and the lack of knowledge affects the international cost of business (Eriksson, Johanson, Majkgard, & Sharma, 1997). Following on, the existing knowledge will affect the commitment of the decision and the current activities. Businesses can learn and gain the knowledge they need through current activities and influence the commitment decisions and current activities through new knowledge, that is, the impact of knowledge and commitment on the internationalisation of the business (Eriksson et al., 1997; Johanson & Vahlne, 2006). Uppsala’s progressive internationalisation model argues that internationalisation is the process of the evolution of the interaction between knowledge development and market commitment (Johanson et al., 2006) and the establishment of learning and commitment is a process that takes time; at the same time, there is a corresponding risk and uncertainty in this process (Figueira, Johanson, & Vahlne, 2011). The

majority of subsequent research has traditionally tried to prove these views through empirical research (Gemser, Brand, & Sorge, 2004).

In the third stage, Johanson and Vahlne re-examined the model from a network perspective in 2009, describing the internationalisation of the enterprise as a process of changing the location of the network. Emphasising the interaction between the development of market knowledge of the micro-network and the network, the internationalisation of enterprises is actually other counterparts to establish and develop a network of relationships (Håkansson & Ford, 2002) and subsequent research focuses on the transformation of group headquarters and subsidiary knowledge (Choi & Johanson, 2012). In addition, there is focus on the management of subsidiaries (Vahlne, Schweizer, & Johanson, 2012).

In these studies, scholars sum up the four main factors that affect the internationalisation of enterprises (Shen, Yang, & Su, 2009). Firstly, the enterprise's own characteristics; scholars believe that the scale of enterprises (Erramilli & Desouza, 1993; Reuber & Fischer, 1997) and the age of the firm (Jones & Coviello, 2005) can have a favourable or unfavourable impact on the internationalisation of the business but these factors will not become an obstacle to the internationalisation of enterprises. Secondly the senior management team as a business manager of the business and strategic decision makers will inevitably have an important impact on the internationalisation of enterprises (Sarasvathy, 2001; Forsgren, 2002; Loane, Bell, & McNaughton, 2007), especially foreign work experience (Choi & Johanson, 2012) foreign educational experience (Bloodgood, Sapienza, & Almeida, 1996), globalisation, global vision (Oviatt & McDougall, 1995) and the degree of sensitivity to the environment (Autio, Ylirenko, & Salonen, 2011). Thirdly, the enterprise resources and capabilities are all important parts of corporate internationalisation. The financial strength of enterprises, unique assets, research and development costs, inter-firm network and reputation are key factors in achieving and maintaining a competitive advantage (Morrow, 1988). Fourthly, the environment in which enterprises exist will inevitably have an impact on business activities, in the process of internationalisation of enterprises and the domestic environment. Additionally, the foreign environment will have a direct impact on the internationalisation of the effect and accounting for industry factors, the market situation will be particularly evident (Andersson, 2004). As such, the process of internationalisation of enterprises is carried out under the combined action of multi-faceted factors.

Therefore, the core argument of U-M theory is that the internationalisation of enterprises is a gradual process. The internationalisation of enterprises is a developmental process seeing

enterprises gradually increasing investment in foreign markets. Because the cultural, political, economic and institutional settings faced by an enterprise when it enters a foreign market may differ from what they previously knew (Hohenthal, Johanson, & Johanson, 2003), firms often learn about the foreign markets through experience (Sullivan & Bauerschmidt, 1990), gradually reduce the psychological distance of foreign markets and ultimately adopting a "leaping" process. However, there are three expectations (Johanson & Vahlne, 1990). Firstly, when the enterprise has a lot of resources and the international market investment has little impact on enterprises, the pace of international investment will be larger. Thus, larger enterprises should adopt a larger international pace. Secondly while the market environment is stable and homogeneous, considerable market knowledge can be obtained through experience outside the aforementioned method. Thirdly when the enterprises get considerable experience from similar markets, the enterprises might apply these experiences to specific activities. Another important feature of the internationalisation process model is that an enterprise is a loose coupling system. In this system, different participants hold different interests and ideas. In particular, companies engaged in international market activities will encounter market opportunities and challenges and they will seek a solution to the problem and find ways to promote the settlement of the problem. Therefore, once enterprises start international business activities, the internationalisation process will continue, regardless of whether the enterprise has made a strategic decision on internationalisation.

A key assumption of U-M is that the lack of foreign market knowledge is the main factor hindering the internationalisation. Key variables of U-M are market knowledge, market input, investment decisions and business activities. From the scope of the market, the internationalisation of the enterprise is: the local market -- the regional market -- the national market -- overseas neighbouring markets -- the global market. From the mode of operation, the stage of evolution is: pure domestic business -- indirectly through indirect export -- export -- setting up overseas sales organisation -- overseas production and sales. The U-M model is based on empirical research conducted by four Swedish companies and empirical studies have found that Swedish companies develop international business step-by-step rather than investing heavily in a particular location thus the internationalisation of most Swedish companies is gradual. Typical international business is usually conducted by agencies and then enterprises establish branches in the host country, until finally enterprises begin direct production in the host country.

2.2.1.2 Applications

Traditional trade theories believe internationalisation of enterprises is a gradual process however internationalisation of enterprises has been accelerating in recent years. Many enterprises have a multinational development at the start of establishment, which cannot be explained by traditional theories (Cai & Li, 2007). Thus, studies of enterprise internationalisation will analyse from the two angles.

After reviews of traditional and new theories in enterprise internationalisation, Yan and Zhang (2010) found that the most significant difference would be if there is a gradual process. Traditional theories believe enterprise internationalisation is a progressive process and is formed by different stages, but the new theories believe enterprises can cross some stages and go into the international market directly or may have direct investments in other countries. Thus, enterprise internationalisation is born to have a character of globalisation.

Lin and Ma (2012) divide these theories into gradual enterprise internationalisation and innate internationalisation. The gradual theory believes enterprises will expand their scale domestic market with accumulation of technology, capital and network and then they will go into the international market. However, the innate theory believes that enterprises are born for multinational business and that the overseas market is the target for sales (Knight & Cavusgil, 1996). So, based on the gradual internationalisation theory, the innate internationalisation theory provides us an open thought and theoretical basis to capture the internationalisation chance. Chetty and Campell-Hunt (2004) believe that compared with traditional international companies, innate international companies exhibit faster learning rhythms and more active learning strategies. Also, these companies can face many trials and even have to accept failures, so they own a higher degree of learning tendency to actively look for the solution to problems.

Zhang and Ye (2009) divide these theories into gradual enterprise internationalisation and leaping internationalisation. Gradual theories explain the linear internationalisation phenomenon. Leaping theories explain the ladder internationalisation phenomenon. However, almost all these theories have limitations and unilateralism. Taking gradual and leaping theories as guidance in practice, theoretical study must shift to the negligence fields.

However, enterprise internationalisation can be influenced by all kinds of factors. Johanson and Mattsson (1988) systematically discuss the issue of enterprise internationalisation in network relations. They believe that any enterprise can only survive in a certain social relationship. This kind of social relationship is called the enterprise network.

Internationalisation strategies and operations of small companies in the natural network will be affected by the degree of internationalisation of other typical participants in their network. Sharma and Blomstermo (2003) believe that the strong connections (networks) that exist in new international companies benefit from sharing knowledge and ideas between companies. Duan (2005) believes that technological innovation and resources under the network environment must be applied properly. Except for the correct organisational activities, a key factor in the success of a company's internationalisation is to have a group of senior personnel who can understand the risks and benefits of global business systems and overcome these risks.

Chen and Ma (2004) mentioned that the former theory of internationalisation of enterprises in the Internet era believed that the internationalisation of enterprises was "orderly and progressive development". Small and medium enterprise (SME) internationalisation model believes the development of information technology represented by the Internet has provided opportunities and effective tools for SMEs to carry out international operations, so that many SMEs have the possibility of equal participation in international competition. The constraints of the resources, scale and market knowledge of small and medium-sized enterprises on the internationalisation of enterprises is gradually shrinking and the internationalisation of enterprises may take place at any stage of the development of an enterprise. Bennett (1997) believes that small businesses with web sites often regard Internet applications as an effective way to reduce the cost of international marketing.

Based on the social network theory and enterprise internationalisation theory, Wang and Jiang (2013) analysed the influence of horizontal and vertical relationships of entrepreneurs on the internationalisation of Chinese SMEs and discussed the impact of entrepreneurial networks on the internationalisation of SMEs in China. They proposed four propositions about how the entrepreneurial relationship network influenced the internationalisation of Chinese SMEs, which needs to be further examined. Zuo's (2013) theory of internationalisation for contemporary companies continues to complement the theory of internationalisation of traditional enterprises and also is supplemented and revised from the socioeconomics of new economy. Especially in the study of international SMEs and international start-ups, research from social networks and social capital have become more abundant. With the development of the theory of internationalisation of enterprises and the popularisation of network analysis tools, the research perspective of using and building social networks to realise the internationalisation of enterprises has gradually become a new

research trend. The content, location and changes of social networks are closely related to the success or failure of a company's internationalisation. The more interactions and exchanges between members in the network have, the faster the process of integrating the company into the international market will be.

More scholars focus on the issue of the internationalisation of SMEs (Coviello & McAuley, 1999; Oviatt & McDougall, 2005). The traditional enterprise internationalisation theory is based on the theory of "strength scale" under the premise that firms have monopolistic advantages. This theory is mainly directed at large transnational corporations. As a supplement, there is also a "target Singapore dollar" theory for the internationalisation of SMEs. The internationalisation of SMEs is not the use of existing competitive advantages but is aimed at internationalisation in order to obtain and make up for competitive advantages. China's private enterprises are based on property rights, which is a standard, distinguished from state-owned enterprises. They are not divided by scale. The private enterprises co-exist with market economy, but state-owned enterprises are inseparable from the planned economy. Tan and Ma (2007) believe that from the perspective of the relationship between enterprises and the environment, on the basis of analysing the domestic development of private enterprises, a strategic framework for the "internationalisation" and "chemical internationalisation" of private enterprises is constructed and the evolution of private enterprises is summarised from the perspective of systems. Yang (2009) also believes that the traditional theory of internationalisation well explains the reasons and process of the internationalisation of large-scale enterprises but does not fully explain the phenomenon of SMEs participating in the internationalisation. Therefore, from the perspective of social capital, the internationalisation of SMEs is explained. Through analysis, it is found that due to the characteristics of social capital, it provides important support for the internationalisation of SMEs and overcomes the major problems faced by SMEs in internationalisation. Therefore, social capital is the main factor for the internationalisation of SMEs. In the process of internationalisation of SMEs, SMEs should actively and effectively cultivate social capital and rely on social capital to promote internationalisation.

Wang, Zhang, and Hu (2009) believe that international management is an inevitable way for private technology companies to acquire sustainable development capabilities. On the basis of summarising the theories of the internationalisation and development stages of domestic and foreign companies, the principles for evaluating the international development stage of private technology companies has been determined and the Trade Specialisation

Coefficient method has been used to deal with the industry and typical enterprises. The development status and international development stage of the internationalisation of private technology enterprises in Xi'an were measured. Finally, measures were put forward for private technology enterprises to accelerate the pace of international development. Ouyang (2005) believes that the history of overseas operations of Chinese SMEs is very short. The internal institutions and management systems of enterprises are difficult to meet the requirements of market competition and they also lack experience in overseas operations. Starting from the reality of Chinese SMEs, we should adopt the mode of gradual development in international development, attach importance to export issues, change the structure of export products and actively expand the export of branded products and high value-added products.

2.2.2 Influencing factors and analysis methods of internationalisation

For enterprises, internationalisation means transition of resources (such as raw materials, knowledge and intermediate products), combining movable and immovable resources together and then finding the market profit (Oviatt & McDougall, 1994). Therefore, the international trade is different from the domestic trade. Internationalisation theory is the understanding and generalisation of the transnational business behaviour of enterprises and scholars put forward their own different theories about how to move from the closed environment to the open market; opinions of scholars vary a lot. Of all these theories, there are many factors influencing the internalisation pace of enterprises. Andersson (2004) thought that factor conditions, demand conditions, technological progress, industrial structure, domestic and international competition, psychological distance, management decision, enterprise founder or entrepreneur international experience, organisational learning capability, enterprise network, market potential, location advantage, internationalisation and risk management and company strategy are important for enterprises internationalisation.

So next, we will build a model to analyse these factors that include external environmental factors, Entrepreneurship of Senior Executives, Characteristics of Enterprises and International Strategy.

2.2.2.1 External environmental factors

External environment factors are not only critical for enterprises but they are also important and these factors can be divided into domestic environment and international environment.

(1) Domestic environment

Domestic environment mainly refers to the political, economic, legal and cultural environment of the country where the enterprise is located.

1) Political factors include the political situation and policy factors of the home country. The political stability of the home country helps to strengthen the confidence of enterprises in long-term production activities and international activities and effective government actions can facilitate the internationalisation of enterprises (Wang, 1997). The decision making behaviour of policy support and effective period can affect the internationalisation of enterprises and industrial policy is a benchmark for the enterprise, which will affect the enterprise internationalisation entry mode choice, encourage foreign investment preferential policies to provide a strong backing and competitive advantage for the internationalisation of domestic enterprises.

2) Economic factors include market capacity, market structure and cost of production factors. The greater the domestic market capacity, the greater the development of domestic enterprises in the country, but also more willing to choose priority in the country to seek development. Compared to other enterprises, enterprises with monopolistic competition and oligopoly market structure enterprise advantage are more willing to invest directly in the target country, quickly occupy the market and improve the other similar enterprises to enter the international market barriers. When domestic factor costs do not have price advantages, firms will invest more in less expensive or profitable countries or regions (Chen, 2002).

3) Legal and cultural factors include laws and regulations, ideological relations, consumption concepts. The laws introduced by the state allow the rights of the enterprises concerning foreign affairs, the rights and interests of the protection and affairs and promote the internationalisation of the enterprises.

The more open domestic ideas and consumption concepts are, enterprises are more willing to conduct international business behaviour and enterprises are easier to accept the target country culture and consumer habits.

(2) International environment

International environment mainly includes the production factors, market factors, trade barriers, political, economic, legal and cultural factors and psychological distance of the target countries.

1) The factors of production in target countries mainly include the cost and quality of

production factors, transportation, communication and other infrastructure conditions.

If there are lower costs of production factors and more developed communication and transportation technology than target country, local enterprises are more likely to reduce the resource constraints on production, reduce the effect of time and distance to the enterprise, enhance the overseas subsidiaries and thereby reduce the cost of enterprise internationalisation.

At the same time, the target country or region with comparative cost advantage is more favourable than substitution type production enterprises and the country or region with the inferior cost is favourable for the trade modes.

The farther away the geographical distance is, the more difficult it is to transport. Compared with the trade type, the enterprises are more willing to adopt direct investment, production or contract to enter the target country.

2) The market factors of the target country mainly refer to the realistic and potential market capacity, the market competition structure and the degree of market liberalisation of the target country.

The larger the international market is, the more conducive for enterprise exports to enter the international market. At the same time, the market for small capacity to enter the cost is relatively low; the risk is relatively small, such as indirect export, export agent, authorised operation or other contractual entry modes.

On the other hand, large capacity market is suitable for international entry mode with high entry cost and high-risk control, such as setting up branch or subsidiary, local assembly or local production. The competitive market structure can be divided into the competitive market, monopolistic competition market and monopoly market in three categories. The higher the degree of monopoly of the international market is, the more intense international competition enterprises will encounter and enterprises have less opportunity to expand, which is bad for internationalisation of domestic enterprises.

At the same time, enterprise should enter the competitive market structure with the trade mode, while the monopolistic competition and the monopolistic market structure should adopt the direct investment mode and implement the localisation strategy. The higher freedom degree of the international market is, the higher the degree of cross-border and interrelated will be and the smaller the barriers will be.

3) Trade barrier, known as trade obstacle, is a set country on foreign goods and labour

exchange by the artificial restricts and it mainly refers to a country on foreign imports of goods by the implementation of various restrictions.

Trade barrier include tariff barrier and non-tariff barriers. The tariff barrier refers to tariffs that are imposed by the customs in import and export goods. Non-tariff barrier refers to the barriers except the barriers of tariffs, such as import quota system, import license system, foreign exchange control, import minimum price, discriminatory government procurement policy, harsh technical standards, health and safety regulations, inspection and packaging, labelling regulations and other mandatory technical regulations. These measures lead to the increase in the production and operating costs of international enterprises and it also lead the loss of some international markets, the interests of damage, affecting the depth and breadth of the internationalisation of enterprises.

4) The political, economic, legal and cultural factors of the target country are the important influencing factors of the long-term decision making of the internationalisation of the enterprise. Political stability, orderly economic operations, complete laws and regulations and close social culture will lead to the choice of enterprises to enter by investment. Otherwise, enterprises tend to trade or contractual approach to go in new markets.

The situation will seriously affect the international development of enterprise security and the stability of the target market, which will affect the interests of enterprises. The disordered market economy order of the target country cannot guarantee the fair participation of the international enterprises in the market competition. Countries have different legal systems, such as national product standards and technical access, which will lead to differences in international business decision making. The cultural environment facing the internationalisation of the enterprise is very complicated. The management technology and management system of the parent company are matched with the political, business environment and operation mode of the target country and the cultural conflicts with the local enterprises, local consumers and employees are handled. The premise of stable development of the country, to avoid cultural conflicts can bring losses for the enterprise.

The differences in religious beliefs have made the nationals of Western developed countries more innovative and adventurous and most Chinese enterprises who believe in Buddhism and Confucian cultures tend to be conservative. At the same time, the difference between the home country and the target country’s social culture is an important constraint to the international expansion of multinational corporations. The greater the social and cultural differences between the two countries, the higher the information cost will be and the greater

the uncertainty of multinational enterprises will be. International companies tend to take less control of the way (a small number of joint ventures, license transactions) into the target country, by reducing the degree of exposure of corporate assets to enhance their flexibility.

5) The psychological distance refers to the "factors that impede or disrupt the flow of information between the firm and the market, including language, culture, political system, educational level, industry development level" (Johanson et al., 1975). These differences lead to the lack of market knowledge in the international business, which is the main feature of domestic operations (Johanson & Vahlne, 1977). The greater the distance between the destination country and the home country, the more the management environment and the management system of the enterprise are different from the operating environment of the destination country, the higher the information cost will be and the greater the uncertainty of the multinational enterprise is. Enterprise internationalisation tends to give priority to neighbouring countries, because there will be a higher probability of success choosing familiar neighbours than completely unfamiliar countries.

2.2.2.2 Human factors

(1) Human capital

Human capital, as the core resources of enterprises, has a significant impact on the survival and development of enterprises (Xiao & Chen, 2008). The quantity and quality of enterprise human capital determines the degree of enterprise knowledge integration and the efficiency of implementation. It is the main driving force of internationalisation of enterprises. The degree of internationalisation depends to a certain extent on the degree and use of internal and external knowledge integration effectiveness. In the process of internationalisation of the enterprise, the human capital has been integrated into the local culture, which will, in turn, promote the internationalisation of the enterprise. Managers, as the core of corporate human capital, affect the export tendencies and the strength of export marketing (Wasthead et al., 2001), while senior management team education, tenure and international experience will be the degree of internationalisation of enterprises, the process has a positive impact (Wright et al., 2007). The ordinary staff, as the main body of human capital, affects the continuous production of enterprises and product quality.

(2) Entrepreneurship of senior executives

Entrepreneurs determine the daily business activities of enterprises and major strategic decisions. Their own educational experience, international work experience, the overall

vision, the sensitivity of the environment, the international business opportunities and other aspects will affect the internationalisation process (Wang, 2014). Entrepreneurs with foreign educational background can adapt to the environment of foreign countries and help the local customs and culture to integrate with the foreign customs and culture, reduce the operational barriers and the adjustment period of the internationalisation process. International experience is different from the experience of domestic operations. Domestic operation only relies on the entrepreneur's personal and market experience, while international operation needs more experience in a specific country's production, which continues to accumulate exotic business knowledge of experiences. At the same time, the entrepreneur's own judgment and decision making ability also affects the internationalisation process. Based on their own resources and experience, entrepreneurs can help enterprises find the best strategic opportunity to enter the international market timely and appropriately. In short, the entrepreneurial factors are one of the main driving forces of internationalisation (Boddewyn, 1983).

2.2.2.3 Characteristics of enterprises

(1) Products factor

Product factors include product differentiation, technical content and factor concentration. Compared with the way of production, the way of trade is often chosen by products with differentiated competitive advantages and products with differentiated competitive advantages will lose their competitiveness in the target market because of the high export cost. So we can only choose to enter the production mode.

The strategic choice of the enterprise should not only create and maintain the competitive advantage, but also balance and make up for the shortcomings and disadvantages. The high-tech products, especially the high-tech products, tend to adopt the investment way or the license way to keep the monopoly advantage and obtain the monopoly profit. Small and medium-sized enterprises tend to focus on a relatively narrow field of expertise and form a technical advantage, so enterprises tend to extend internationalisation, by seeking overseas resources to make up for their own resources, management and financial capacity of the lack of large enterprises to overcome the professional lack of depth and bias in the internalisation.

Cheap labour and natural resources bring labour-intensive and resource-intensive products in and they tend to go in the market by investment. While the broad market in China brings capital-intensive products in. Enterprises tend to use exclusive investment in core products and core technologies and tend to take non-investment in non-core products and

technologies and they tend to use the branch or subsidiary or local production in service products.

(2) Resources inputs factor

Resource input factors refer to the richness of the enterprise resources and the willingness to invest, including the resources and management decisions of the enterprises in management, capital, technology, technology and marketing. With the richest resources, enterprises will have a broad choice to enter the market and managers will change decision making with the international practice of operating experience and growth. Under normal circumstances, the size of enterprises and resource conditions are directly related, so the size of the enterprise plays a key role to enter the international market. However, the richness of enterprises resources, after all, is only the basis of international business. Whether internationalisation or not also depends on the high-level managers' investment will. Aggressive enterprises tend to invest the market, while robust enterprises will adopt a progressive way to enter the market. Enterprises with successful international experience will increase investment, while the managers will withdraw some capital. Enterprise resources are tangible, while some are invisible. Tangible resources are visible and energised assets. Invisible resources refer to those that are rooted in the history of the enterprise, long-term accumulation of assets.

(3) Enterprise knowledge

Enterprise knowledge mainly includes market knowledge, composed by the general business knowledge and technology (that is, objective knowledge can learn from the education process, books) and knowledge and experience on specific markets (that is, empirical knowledge can only be through personal work practice Accumulate). Market knowledge of enterprises directly affects their opportunities in foreign markets and understanding of risk, thus affecting the overseas market business decisions. At the same time, the application of specific market knowledge can be transferred from one country to another country, which is conducive to the acceleration of the internationalisation process. Therefore, the overseas business experience can determine overseas business activities.

The knowledge of overseas market conditions and experience of internationalisation is one of the necessary conditions for enterprises to implement transnational operations. The experience gained in a certain market activity can help reduce the uncertainty of investment. The differences between the regional market environment and the complex and volatile nature of the business environment, within the context of information economy, makes this

knowledge irreducible. Therefore, the learning ability of enterprises is also a necessary prerequisite for the internationalisation of enterprises.

2.2.3 BRI and internationalisation of enterprises

The BRI has spawned a huge international market and provided an important historical opportunity for the development of all walks of life in our country.

Yang, Chen, and Chen (2016) started from the insurance intermediary industry, based on the analysis of the impact and opportunities of the BRI on the development of China's insurance intermediary and explored the correct positioning of the development of insurance intermediary and its development space and transformation. In the direction of upgrading, China's insurance agencies have taken advantage of the BRI opportunity for international development. They believe that China's insurance intermediary companies must "go global" by focusing on long-term thinking and cultivating multilateral relations, be integrated into the International Association of Insurance Agents and form a global network of information resources; strive to integrate into the local community, build a cross-border exchange platform and establish overseas business training. The long-term key customers; training leading enterprises, making it the backbone of the internationalisation process.

Wang (2017) started from the retail industry and discussed the choice of the development model of retail enterprises under the BRI approach. Enterprises to carry out international marketing activities must first choose the appropriate market entry mode to enter the target market country. Different market entry modes represent different levels of risk, reflecting the different levels of market participation of target market countries. The Belt and Road Initiative provides retail companies with important international development opportunities. Retailers entering the international market with franchising and other non-equity access methods must pay attention to brand building and protection. Retailers entering the international market with equity access methods such as mergers and acquisitions need to focus on integration. The process of knowledge sharing and transfer mechanism building. Retail companies should adapt to the challenges of the era of consumer sovereignty, combine the characteristics of the target market countries in the process of international development, explore and advance the layout of online and offline integration can be fully connected to the consumer omni-channel retail model.

Shen and Meng (2017) Starting from pharmaceutical companies, this study uses a resource-based theory to provide a good perspective for overseas market entry model

selection, targeting the economic environment and health care environment in countries along the BRI approach. Features, using factor-clustering analysis combined with qualitative analysis, categorise the pharmaceutical markets of countries along the BRI approach and propose recommendations for overseas market development strategies based on the resource characteristics of Chinese pharmaceutical companies.

Tan (2015) discussed the risks and countermeasures of Chinese enterprises' overseas investment under the BRI strategy. Many overseas investment projects of Chinese enterprises involve the key areas of the host country and effectively affect the national economy and people's livelihood of the host country. Due to the comprehensive evaluation of the impact of lack of investment projects and the suspicion of the company's identity, Chinese enterprises' overseas investment has encountered many political risks. National security factors and environmental protection issues have become obstacles to investment intervention. Under the BRI, Chinese enterprises should fully understand the host country's investment environment when expanding overseas investment, emphasise the environmental awareness of enterprises in their investments and construct a comprehensive security assurance system.

Mei, Ru, and Song (2016) started with logistics companies and explored the path of internationalisation of Chinese logistics companies in the context of the BRI. Domestic logistics companies should seize the opportunity of the BRI to speed up the construction of an overseas network layout led by shifting from the chasing of trade flows to the completion of overseas project tasks such as project contracting and manufacturing and complete the completion of asset facilities injection and network functions. The business is localised and the globalisation of business operations, personnel, information and other logistics elements is finally achieved through management internationalisation.

Lin (2017) conducted research on the development of the internationalisation strategy of Jiangsu enterprises under the Belt and Road Initiative. In the implementation process of Jiangsu enterprises' internationalisation strategy, we must start from the actual situation of the company and follow the laws of market economy, especially the economic environment, policies and regulations, taxation strategies and cultural customs of the investment country. He put forward the path of international development of Jiangsu enterprises from five aspects: investment timing, open platform, supervision and management, two-way investment and talent introduction.

Fang and Zhao (2017) believe that in the process of internationalisation along the BRI approach, domestic companies are faced with the problem of the choice of international

operating methods. Through the establishment of a supply and demand model, a comprehensive analysis of the impact of national distance on the two major international business model choices of export trade and direct investment. The results show that the national distance has an overall inhibitory effect on the international operation of Chinese companies; different national distances have different effects on export trade and direct investment and cultural distance, economic distance and technical distance increase the export tendency. Geographic distance and system distance are increased investment trends.

2.2.4 Product life cycle theory

In 1966, professor Vernon of Harvard University proposed the product life cycle theory. The product life cycle theory divides each product innovation into the three stages of innovation, maturity and standardisation with each stage presenting different characteristics. Therefore, the investment of transnational corporations and their countries is affected by different product stages.

Firstly, in the product innovation stage, enterprises will generally choose to produce in domestic country. In this period, multinational companies have advantages in technology and capital with less competitive products and small cost pressures. At the same time, enterprises also continue to improve the design, quality, packaging, to better meet preferences of customers. Therefore, in this stage, enterprises will export to meet the international markets. In addition, customers pay more attention to the price of products instead of the variety of products. Thus, the advantage of products gradually disappears and enterprises start to need to reduce costs to have a greater market share.

Secondly in the mature stage of the product, enterprises begin to produce in foreign countries that will lead to a larger occupation of the market. Additionally, this makes it difficult for competitors to enter the new market. When the enterprise has developed to this stage, its main goal is expanding markets. They will pay more attention to consumption habits, customs and the economic development level of other countries and this will ultimately allow them to establish subsidiaries in these new markets and carry out local production and business activities.

Finally in the product standardisation stage, the monopoly advantage of enterprises ceases to exist with increasing ease of entry for competitors. At this time, lower costs mean high profits due to the same products of enterprises. For the above considerations, lower costs mean that the cost of labour plays an important role for transnational corporations. In these

areas, enterprises will invest in developing countries in order to enhance their competitive advantage and reduce costs. Also, enterprises will transfer their own technology to these new markets in order to make full use of local low-cost labour, means of production and management. Thus, enterprises will promote the development of production and enhance product life.

Therefore, the product cycle theory explains the transnational business behaviour of enterprises and it combines the host country's regional advantages and the ownership of the enterprises to illustrate the formation of the international production pattern. It essentially provides a powerful tool for analysis of growth for manufacturing multinational companies.

2.2.5 Comparative advantage theories

British classical economist Smith (1776) believes that micro-economic entities can specialise their production according to its strength in the market and through transactions in the market. These enterprises can maximise their social welfare in general to achieve the "win-win" situation. Activities relying on their absolute advantage and activities beyond domestic countries form an international division of labour and international trade. However, the way that compares the absolute cost between the domestic products and foreign products directly will prevent some countries from participating in international trade with those countries at a disadvantage in all products. However the cost of the comparative advantage principle proposed by Ricardo (1817) compares cost ratio between domestic products and foreign products. This principle can give a reasonable explanation of probability that each country can join in the international trade.

The traditional comparative advantage theories take labour as the only production factor and ignore how capital, natural resources and technology may influence output (Qian, 2006) Factor resource endowment theory, taking Heckscher (1919) and Ohlin (1933) as representatives, believes that the origin of the comparative advantage theory is the difference in relative endowments of production factors in different regions; relative intensities of usage can also be an origin of the comparative advantage theory and finally followed by the development of international trade with the basic factors such as labour, capital and land as the main reasons leading to the differences within countries.

New modern trade theories have become mainstream trade theories by improving upon traditional theories and these modern theories emphasise the dynamic analysis of different countries' distribution, economic growth and demand preferences. In addition, they compare

the different of strengths between different countries. One hand however, these theories are derived in the countries which have a better basis of economic and it is assumed that the market regulations are sound and the framework follows the general equilibrium theory, so these theories study international trade and economics from a mature market economy point of view (Qian, 2006) and do not take into account the challenges and problems present in developing countries. On the other hand, in the contemporary international trade, there are many new trade models such as “horizontal trade” between countries, trade development within regional groupings, trade development within the manufacturing industry, multinational companies’ internal trade, processing trade and other new software outsourcing trade (Pang, 2014). However, these modern theories and models lack relevance and applicability for China, which is currently under economic and industrial restructuring alongside the enactment of the BRI.

Thus international trade theories are developed from endogenous and exogenous comparative advantage and comparative advantage is a core concept in the developing process of international trade theories. Any country’s trade in the world may be influenced by its domestic resource endowments and comparative cost. Thus under the circumstances of economic globalisation, countries cannot throw away the comparative advantage theories during the economic development and international competitive process.

2.2.6 Location choice theory

Economic globalisation is essentially different from the previous feature of the world economy in that there is the transnational flow of production factors. The flow of production factors between countries has changed dominant elements of structure and comparative advantage and has promoted international division of labour related to traditional trade (Chen, 2013). The traditional trade theories have no individual research of enterprises and the traditional trade theories study more from the industry level, hence what we call this inter-industry trade (Chen & Li, 2010). Regardless of whether we use the absolute advantage theory or the comparative advantage theory, the flow of goods and factors from the macro level is still explained. However the location choice theory is required to explain the economic agents’ production behaviour from the micro-level. On the other hand, the models are constructed to show how to become international in the export business before the international theory and the trade theories only propose that all the production process are conducted in the home country with all final products aimed for export. Moving forward, an

increasing number of multinational companies are choosing to set up production plants in the host country in an international way and this promotes the development of the FDI location theory. Brainard (1997) proposed a "near-concentration" hypothesis. When the transport costs are lower, export percentage will be higher than FDI assuming all other conditions remain unchanged. With an increase in the variable transportation cost, the cost of trade between countries will increase therefore companies will seek to set up factories and invest in the host country to avoid high freight costs.

Location theory was initially meant to explain where different agricultural products would be produced and developed. Agricultural location theory only studies the utilisation of agricultural land and Thunen (1986) is the representative. With the development of the industrial revolution and the social division of labour, the industrial theory came into being. The industry location theory taking Weber (1997) as representative has minimised the total cost of the manufacturers, transportation costs of inputs and outputs in order to get an equilibrium result of the industry location theory. The theory also takes the lowest cost as the basic evaluation factor of business locations. At the same time, it focuses on transport costs and labour costs for the industrial location therefore the industrial location theory is also known as the "minimum transportation cost theory". Although Weber's (1997) theory matches real economic industrial distributions, the minimum cost principle does not conform to market research. In other words, the minimum cost principle will not necessarily achieve market equilibrium with maximum profit and it is purely partial static analysis. Losch (1940) combines the production location theory with market factors promoting corporate establishment in the vicinity of the market for the production in order to obtain profit maximisation as the principles and objectives of the enterprise layout, that is, "the largest market principles". The theory of new economic geography is different from Losch's location theory, which stresses on its own areas. Taking the centre-periphery model (Fujita, Krugman, & Venables, 1999) as a regional general equilibrium, the theory of new economic geography pays more attention to the market-associated amplification effect. In the beginning period of economic development and being the core area of economic activity, its combined effect are often relatively strong and with a lot of factors of production closer to the core area, the peripheral regions will suffer a period of slow growth. With the development of the central area, the scarcity of factors of production prices rise leading to increasing diffusion effects, thereby increasing the rate of development of the peripheral region.

Theoretical study of multinational FDI can be traced back to the early 1980s with the

multinationals FDI theories studying the location factors and strategic factors of FDI enterprises from the advantages and motivation of these FDI enterprises. In other words, the enterprises are considering which countries and regions to give FDI. The multinationals concern much about the advantage difference between themselves and other countries when undertaking FDI activities. From a macro point of view, FDI may be affected by supply factors, demand factors and political factors. From the micro level, FDI location choice may be influenced by specific factors, such as factor cost (Shen & Tian, 2002), infrastructure, market potential (Blonigen, Ellis, & Fausten, 2005), geographic concentration (Xian & Wen, 2006), as well as regional policy (Dunning, 1980) and institutional environment (Yue & Fan, 2014).

To sum it up, whether international trade theory of absolute advantage or comparative advantage theory or FDI location theory, they all focus on decreasing costs and expanding corporate profits from the macro level under the external environment and they make their decisions by evaluating the type of products, production location, origin of enterprise production factors and transportation methods of elements and products. However, the international trade theory cannot explain how to reduce production costs from the micro-level or from a particular aspect of internal enterprise and procurement management theory can complement the limitations.

2.3 Review and comment of procurement theory

The traditional microeconomic theory regards the production process as a “black box” without explaining its internal organisation and it assumes that companies will automatically take action in accordance with the principles of rational economics and facing the same market signals that all companies would react identically. However, enterprises, as the microscopic foundation of modern market economy, are targeted on profits and they would maximise output with a minimum investment. Also, business productivity is not the same across different organisational forms, namely differences in internal factors and business behaviour will lead to differences in productivity between enterprises. Procurement is the first link in the production and operation of enterprises and directly is related to enterprise stability and sustainability (Lin, 2010). The success of procurement management will directly affect production and operations and ultimately it will affect corporate profits and the company’s core competitiveness and development potential.

2.3.1 Theory of procurement management and cost control

2.3.1.1 Procurement management

Procurement is the activity that under certain conditions, an enterprise obtains a product or service from the market as the supply of its resources to ensure that their production and business activities can be carried out normally. For enterprises, procurement is a regular behaviour and the enterprise can obtain their products or services for business activities primarily acquired through purchasing. Procurement is the planning, organisation, implementation, control and improvement processes that match suppliers, raw materials, purchasing, procurement organisation and all the relevant factors together. The procurement activity has its own specific process and it gives the enterprises an order to follow in the specific purchasing process. Generally, a complete procurement will go through the process described in Figure 2-1.

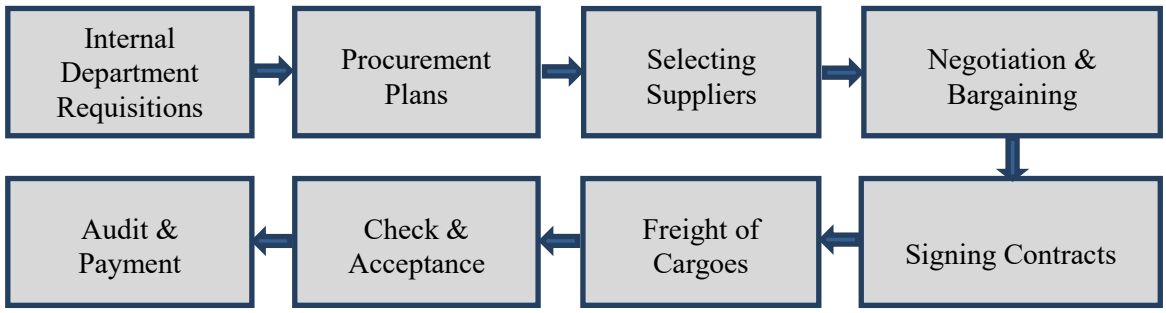

Figure 2-1 Process of Corporate Purchasing

Advanced procurement management systems can ensure that business supplies and resources are abundant. In order guarantee the effectiveness of enterprise materials, the scientific management of procurement for enterprises is necessary. It can enable enterprises to secure the right quality, the right time, the right prices, the right suppliers and right number of procurements according to “5 Rights principle”, the target of procurement management can be expressed as the following “5 Rights” (As shown in Figure 2-2).

Firstly, the right quality means suitability and availability. If the quality standards are too high, it will increase the cost of procurement and the purchase requirement will be difficult to meet. If it business acquires a low quality of goods, it will lead problems in the production process. Secondly the right time means that the procurement and delivery time should not be too early or too late. To purchase too early, it will influence the liquidity of capital and to

purchase too late, it will increase the risk of operating and potentially result in a delayed delivery time. Thirdly, the right price refers to the principle of what is fair and reasonable. If the purchasing price is too high, it will result in high operating costs of enterprises and loss of competitiveness in the market. If the purchase price is too low, it will result in a loss of suppliers and bad quality of materials. Fourthly, the right supplier means that enterprises need to establish a long-term and mutual-beneficial relationship by carefully selecting the appropriate suppliers. Finally, the right quantity means the purchase order quantity must meet production demand. Excessive purchasing not only wastes stocks and capital but also leads to impairment of materials and increasing costs. If there is insufficient number of purchases, it will affect the normal operation of enterprises.

The famous management guru Peter Drucker believes that strengthening procurement management, reducing procurement costs can increase profits in order to become the third profit source of enterprises. This may be the last source of profits that has not been found and this view has changed the long-held notion that the value of the purchase cannot increase. Bernard J Lalonde believes purchasing is a very important part in the supply chain and is placed in the position of the purchase management competitive strategy (Ma et al., 2000). In the past, procurement is considered a reaction of internal demand in order to obtain goods and service but now the concept of procurement is beyond the original scope. The main role of procurement includes ensuring security and quality of supply of raw materials, finding the lowest-cost resources in the market, promoting scientific management by dynamic market changes and enhancing the competitiveness of enterprises.

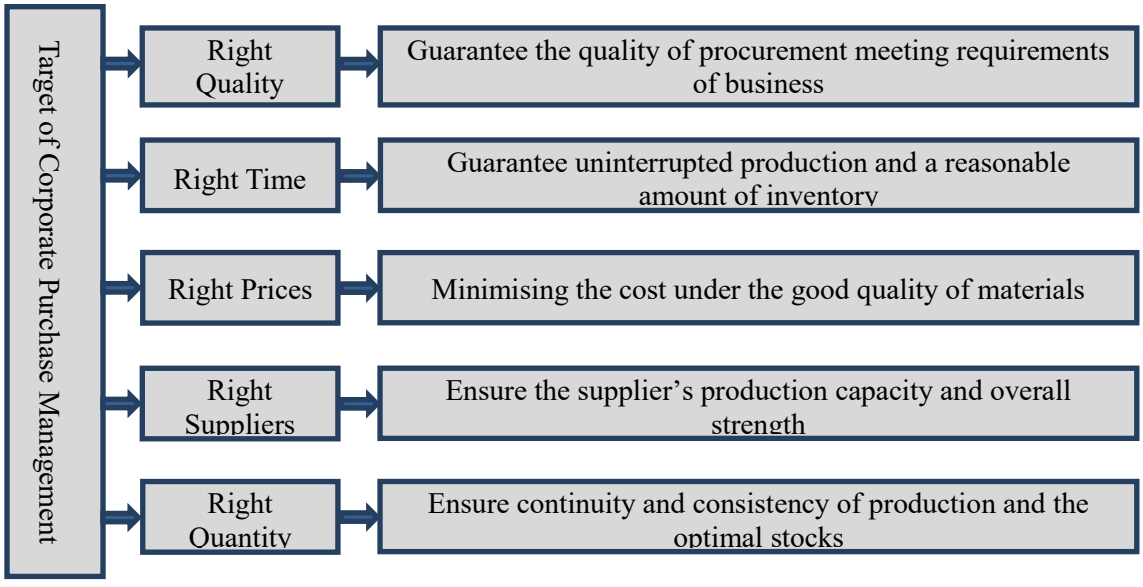

Figure 2-2 Target of corporate purchase management

2.3.1.2 Cost control

Cost is the result of labour used to produce goods and services in enterprises and labour is the monetary form of value in necessary labour (Lin et al., 2008) and it is an important component of the value of goods. The Harvard University Institute originated “Cost Control” in the 1930s and so this university developed the “Accounting Control Law”. This law is mainly used to reduce and control costs, thus it called the Cost Control Law. In a narrow view, the cost control means scientific calculations, limits and supervision of all costs during the production process. It limits the actual cost in a planning scope and analyses the reasons why costs vary from the standards and plan. Then in order to reduce the costs comprehensively, we can take quick actions. Generally, the cost control not only means controlling the cost of production, but also means controlling the cost during product design, the cost of sales and after-sales stage. So it is an important part of the modern cost management theory. Therefore, cost control looks at the cost management target according to the business situation in a specific period. Within the terms of reference, people who are responsible for cost control would take a series of actions to control all kinds of factors and conditions influencing the cost; the goal is to achieve the cost management target before the excessive costs occurs.

(1) Factors influencing procurement cost control

Procurement costs refer to all costs incurred in the procurement process. Broadly speaking, the total acquisition cost includes all costs such as the procurement management cost, order tracking, expediting, transportation, testing, rework costs, storage, downtime losses, sale and costs caused by missing sales opportunities (see Figure 2-3). The total cost of ownership is purchase price plus all related internal costs and is also present in the supply chain where it is also called the total costs of ownership (Hua, 2011). There are many reasons that influence the procurement costs and we can analyse this from the internal and external aspects.

First of all, the internal factors mainly include: a) inter-departmental communication and collaboration, procurement services related to planning, design, quality and sales, frequent changes of plans, excessive demands of design and quality. All of this would result in high procurement costs. b) Due to the impact of fixed costs, bulk purchasing and procurement batch determines the cost of procurement. c) Time and place of delivery and payment. If the delivery time is too long, the time until use of the enterprises’ purchasing materials will be long, so we would need to stock materials in advance to manage delivery risk while at the same time introducing risk of storage costs. d) Price analysis and negotiation capacity. When

negotiating, the enterprises must select effective negotiation strategies based on the current market conditions in order to achieve the aim of reducing procurement costs.

Secondly, the external factors mainly include: a) the market supply and demand situation; when demand exceeds supply, suppliers would raise prices leading to higher procurement costs. If supply exceeds demand, the purchasing enterprises are in the driving position, so they can get the best price. b) Supplier costs; the supplier's cost level is the most direct factor affecting the purchase price. The supplier's production goal is profit and so under normal circumstances, the supplier's cost is the bottom line of the purchase price. c) Production technology and quality level of suppliers; if a company's production technology is advanced and the product quality is excellent; the supplier will get a higher price for the product. According to the requirements quality, technical features and delivery, the purchaser will choose reasonable suppliers to achieve good value for money. d) Business relationships between purchasing cooperative and suppliers. If you establish a long-term win-win partnership through joint efforts both parties can reduce supply chain costs to achieve the purpose of reducing procurement costs. e) Sales strategy of suppliers; quotes from suppliers are directly related to the sales strategy with suppliers. In order to open up the market to get orders, generally the companies will offer a lower price first and after the occupying the market, they will increase the price.

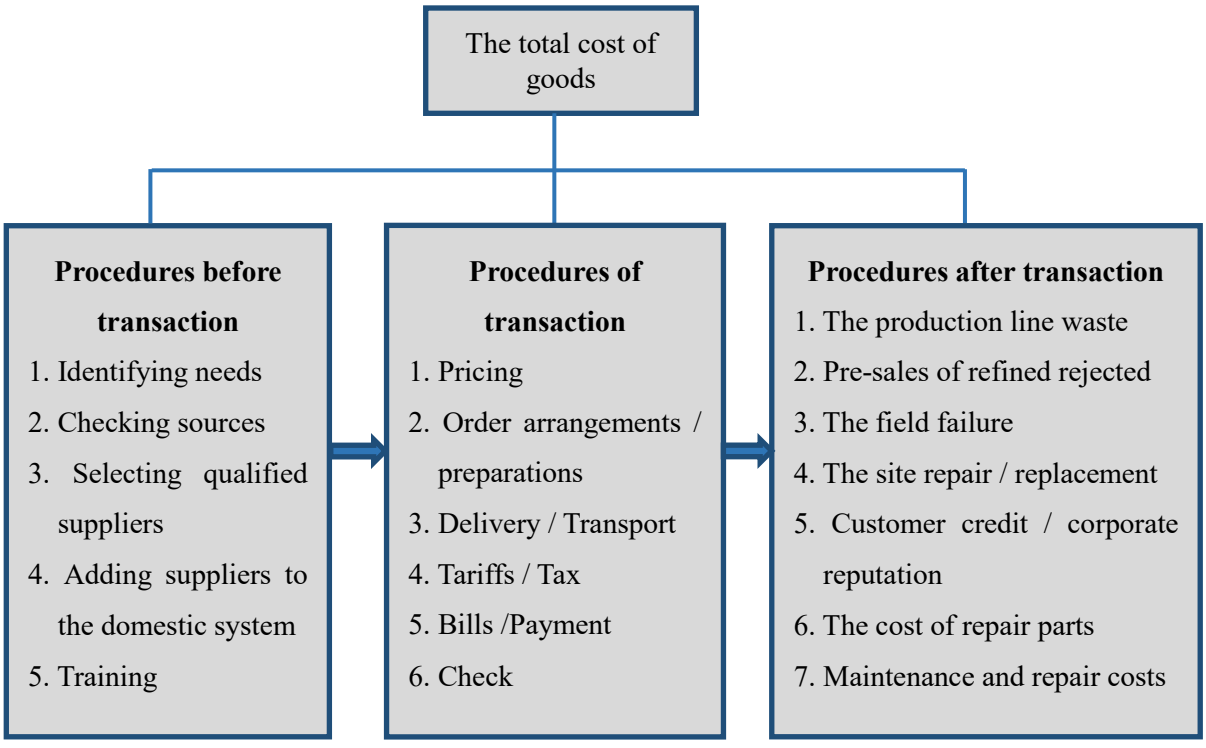

Figure 2-3 The structure of good's total cost

(2) Procurement cost control

There are many ways to control the procurement costs of enterprises. Generally, there are the following ways: a) Negotiations; negotiating is a process for buyers and sellers to reach their own goals and to reach an agreement with each other. It is also the most basic skill that all procurement staff should have. Negotiation is not limited to price, but also it can refers to some specific need during the process. b) Target Costing. Product development and design should be based on willingness at market price. We must assume that there are price lists of a competitor product and then we set the prices of our products accordingly. c) Early Involvement of Suppliers; this occurs in the early stages of product design by selecting a supplier partnership involved in the development team of new products. Using early supplier involvement, the new product development team can raise the performance specifications requirements of suppliers and then, by means of vendor expertise, they can achieve the purpose of reducing costs. d) Leverage Procurement; the head office firstly collects the demands of individual institutions and different sectors and then they negotiate together to increase bargaining space. This is act of agglomerating demand is called leverage procurement. This can prevent different business units purchasing individually, which would otherwise result in these different business units within the organisation purchasing the same parts to the same supplier but with the different price; and therefore, potentially being unaware of the lost opportunities to save procurement costs. e) Price and cost analysis; this is a basic tool of professional buyers and it is of considerable importance to understand the cost structure of basic procurement elements. If you do not know the cost structure of goods, it can be considered that you do not know purchased items are a reasonable price and so you will lose many opportunities to reduce procurement costs.

The goal of purchase management and cost control is to reduce production costs however domestic and international research often varies a lot in relation to procurement costs. The studies abroad mainly focus on the related methods of reducing procurement costs and then these studies will use various models to verify procurement costs. From an accounting point of view, Surendra (1977) analyses the costs of procurement and validates the model. From the main part of the purchase cost, Newberry (2002) analyses the current situation of procurement costs. By using inventory control strategy, Xing, Wang, and Wang (2012) believes that accounting control can reduce procurement costs by which he then studies how to reduce procurement costs using a mathematical model. Using the study of year-end inventory and empirical analysis of the current situation, Prankel and Trezevant

(1994) studies the status of procurement cost structure to calculate procurement costs. Sertcu (1995) studies how the exchange rate can influence purchasing costs of international trade by establishing a mathematical model to illustrate the impact of exchange rates on the purchasing price. However domestic research mainly focuses on the study of theories while lacking in studies of models. Tang (2008) studied common procurement cost control methods and problems we should pay attention to. After which he then analyses the value of procurement cost control and methods of direct negotiation. Liu and Tang (2009) study the current situation and the main problems of procurement performance. Yi (2007) conducted a study on how to reduce corporate MRO procurement cost. From the perspective of supply chain, Luo and He (2008) study the cost of procurement. Guo (2007) studies a method of correlation in purchasing process optimisation. Niu (2012) studies the theoretical aspects of the procurement overview of costing, contents of procurement costs and related issues. From the perspective of the material supply system, Wang (2012) studies all aspects of procurement and then proposes improvements across all aspects. By analysing the Just-In-Time (JIT) procurement model, the MRP procurement model and supply chain procurement model produced by Xu and Zeng (2006) studies modern logistics procurement.

As shown in the historical evolution of procurement management, the more intense the market competition that enterprises face, the more professional the management of procurement will be (Jing & Li, 2008).

In the modern market economy, procurement management of enterprises not only becomes a professional function of management but also becomes a strategic means to business goals. Based on the theoretical literature of foreign procurement management, procurement management can be divided into purchasing inventory management theory, supply chain coordination of procurement management and professional procurement management.

2.3.2 Purchase management based on the theory of inventory

As discussed in 2.1.2, procurement involves operational level activities in accordance with meeting the needs of production. Early procurement activities are production-oriented and the purpose of procurement was to maintain a certain level of stock in order to maintain normal production and business; as such is the theory of inventories.

Based on the theory of inventory, purchase management reviews the purchase price for exogenous variables and it studies how to minimise purchasing cost and inventory investment

to achieve optimal order quantities and optimal order cycles. Harris (1915) had studied order quantities for commercial enterprises to minimise acquisition costs and inventory investment. Taking the optimal order quantity as the decision variable, it considers the procurement of goods with stable demand rate and therefore, the well-known formula of economic order quantity (EOQ formula) came into being. However, the EOQ formula was not paid attention to at that time. This did not happen until 1934 with the emergence of Wilson's improved EOQ formula and newsboy model (Jing & Li, 2008). However, these models are based on strict assumptions and show significant deviation from observations in real practice. Thus, the latter scholars continued to broaden the assumptions by accounting for purchasing problems based directly on real life. Wilson (1995) has a summary of economic order quantity issues under inflation. Lau (1996) expands the newsboy model to the procurement of multiple products. Gullu, Onol, and Erkip (1999) extends the Economic Order Quantity problems to suppliers' capability against random situation. However, these studies take the purchase price as an exogenous variable and consider only the optimal amount of procurement and procurement cycles in decision making. Following these historic studies, scholars studied the purchasing of raw materials' under price fluctuations (Arnold, Minner, & Eidam, 2009). Berling and Martinez-de-Albeniz (2011) established optimal inventory model based on geometric Brownian motion and the process of random fluctuations in raw material prices.

2.3.3 Procurement management theory of supply chain coordination

The supply chain is derived from the "economic chain" proposed by Peter Drucker and was developed into the "value chain" by Michael Porter which eventually evolved into the "supply chain" today. Supply chain management is integrative management from the supplier to the customer's product flow, information flow and capital flow so as to maximise the value of the supply chain (Liu, 2013). Supply chain management emphasises the cooperative relationship between enterprises and it can take the various enterprises in the supply chain as an interdependent whole. Therefore the functions of enterprises such as procurement, production, distribution and marketing and other aspects of the supply chain become a coordinated development organism.

The overall goal of supply chain management is to reduce transactional costs and improve overall customer service levels through effective supply chain management (Wang, 2002). The specific objectives are to minimise the total cost of the operation, optimise quality, shorten the total cycle time, minimise inventory costs and optimise customer service.

Supply chain procurement refers to the procurement of the internal supply chain between enterprises. Business enterprises purchase goods from suppliers based on demand and these suppliers then send purchased goods to the business enterprises. Compared with the traditional supply chain, the concept of material procurement and supply and demand has not changed, however the operations of purchasing and procurement has changed significantly (Barrow, 2001). For example, it has been changed from the concept of "purchasing for inventory" to "purchasing for orders" and it has changed from procurement management to external resource management. In addition, general trading relationships have changed into strategic partner relationships.

With the changes to the market environment, demand-oriented procurement activities have shifted to production-oriented procurement activities. The production and business activities of enterprises are not only dependent on the supply of raw materials, goods and services, but we need to consider that these enterprises are also are facing fierce competition in a finite market. Therefore procurement management can coordinate and integrate the supply chain management of both buyers and sellers and procurement management can study the problem of inventory, ordering and pricing and other issues in the interests of both buyers and sellers. At this time, purchasing behaviour is considered as a transaction and both buyers and sellers can achieve win-win situation through negotiations. Lyer and Villasboas (2003) believes that the impact of different bargaining power between the buyers and sellers on the purchase price and the structure of the supply chain profit is different. The stronger the bargaining power of retailers is, the lower the purchase price will be and the better position for the overall supply chain to maximise profit.

The quantity discount model, as one of the early procurement negotiation model, negotiates an order quantity discount rather than a price discount. If the purchase amount is large, providers can enjoy the benefits of economies of scale and therefore are willing to offer lower quotes through price incentives manner in which a portion of income will be transferred to the buyer. With the small increases in purchase quantities in enterprise and more varieties of the final product, requirements of purchasing are improved. Except negotiated procurement management, the activities must abide by the JIT management system. In strict accordance to the planning schedule, the procurement of raw material and parts must be given significant attention. Supplies needed for the production schedule must be consistent with the rhythm of production so that the kind and quantity of goods procured can accurately meet the needs of the production schedule and at the time, it can also reduce inventory and therefore reduce

production costs. In this way, the JIT system can provide goods of proper quantity and quality at the right time and the right place to eliminate all unnecessary labour and material waste. Compared to traditional procurement methods, the JIT procurement system emphasises more on the human element than pas systems (Jing & Li, 2008).

2.3.4 Professional procurement management theories

Procurement management is based on the theory of purchasing inventory management aims to minimise the costs of procurement and stock investment. However, current methods of procurement and supply chain coordination emphasise the building of long-term strategic partnerships between the purchaser and suppliers. In addition, the emphasis lies in external relationships and coordination between the buyer and seller to adapt to changing market conditions. Based on the spread of technology developments in production technology, the professional procurement management theory shifts its purchasing behaviour to a buyer's market where it aims to meet customer needs, radically and fundamentally redesigning existing processes. Michael and James (1993) proposed organisational "redesign (reengineering)" and "BPR (business transformation (BT) or business process reengineering (BPR))" as a means to business improvement. The purchasing department could then perform predictions based on sales and thus set up a procurement plan ahead of time. At the same time, by taking advantage of outside information the enterprise can find the optimal platform for the supply of resources and control procurement costs using effective procurement policy. Therefore, procurement management has not only become a professional business function, but proper procurement management can also become an important means to achieve strategic business objectives. Rink and Fox (2003), illustrates the problem with procurement strategies from corporate strategic objectives of the purchasing business unit and the systematic use of the product lifecycle.

Reverse auctions, as a function of professional procurement activities, are considered to be an effective mechanism for the procurement of materials and as an effective means to achieve the Pareto Ratio. As shown in by Smart and Harrison (2002) analysis of the results of actual reverse auctions shows that companies can reduce procurement costs effectively by using the reverse auction mechanism under the conditions of low degree good complexity and multiple suppliers. However, as mechanism for buyers and multiple suppliers, the reverse auction was studied by Chen, Roundy, Zhang, and Janakiraman (2005) to show how the supplier can truthfully report the cost of production information to reduce procurement costs

effectively and in this situation, the purchaser is deemed to have strong bargaining power.

2.3.5 Supplier selection and evaluation theories

As shown in Figure 2-1, supplier selection and the evaluation is an indispensable part in purchase management process. Choosing the best suppliers comprehensively and objectively and establishing long-term and close cooperative relationships with qualified suppliers can decrease risk effectively and maximise corporate profits. Domestic and foreign scholars have undertaken many studies on supplier selection and these studies focus on two aspects: the first aspect is the standards and guidelines for the evaluation of suppliers and the second aspect is the models and methods of supplier selection.

First of all, we may see from the standards and guidelines for supplier evaluation. Back to the 1960s, Dickson (1966) firstly proposed a supplier selection index system and he used empirical methods of investigation and summing up 23 supplier selection and evaluation criteria including quality, delivery, historical performance, capacity, price, technical capability and financial condition. The following studies are developed on this basis. Weber (1993) and other scholars reorder the Dickson's 23 indicators according to the frequency in reference material and the changes in these indicators. Fan (2012) adds the design and development of new products to the system. Chen and Qi (2009) adds social responsibility to the three stage theory model of multinationals suppliers in China.

Secondly, we may consider the models and methods of supplier selection. In the conventional method to achieve a decision, fuzzy comprehensive evaluations, analytic hierarchy process and mathematical statistics methods are simple and easy to use. They have been used extensively in many decision making analyses. Some other methods, such as multi-objective decision TOPSIS, DEA and network analysis are less used by scholars (Aissaoui, Haouari, & Hassini, 2007). These studies focus on multiple-criteria decision making methods (Vahdani & Zandieh, 2010), the cost method (Roodhooft & Konings, 1997) based on the concept of empirical methods, mathematical programming (Wu, Shunk, Blackhurst, & Appalla, 2007), fuzzy set theory (Wang, Cheng, & Huang, 2009), artificial intelligence (Choy, Lee, Lau, & Choy, 2005) and a combination of the above methods (Lau, Lee, & Ho, 2006). These supplier selection studies have gone through an evolution process being qualitative, quantitative, or a combination of the two.

2.3.5.1 Multi-criteria decision making: MCDM

The traditional decision making is based on a single criterion, but with the development

of social progress and scientific management, decision making has become what is now complex inter-related criteria based on a variety of factors. This kind of method is called multi-criteria decision making (MCDM) and it is an important branch in the decision analysis field, dealing with issues that have a limited number of programs in multiple criteria decision making. MCDM methods analyse, valuate and make decisions on a series of complex issues considering multiple factors and standards under the premise of qualitative and quantitative information. This itself can be divided into multi-attribute decision analysis (MADA) and multi-objective decision making analysis (MODA) (Kong & Jiang, 2015). The MCDM method can be used in corporate strategic decision making problem by evaluating multiple strategic decisions through which we can find the most satisfactory solution amongst various strategic options. MCDM was applied to corporate strategic decision making to analyse and solve complex strategic problems of choice and obtain an objective assessment of subjective decisions. MCDM can effectively solve the problem of uncertainty encountered in decision making results and can respond to future changes under uncertain conditions, allowing it to solve complex strategic decision problems and making it enormously practical.

2.3.5.2 Analytic hierarchy process

In the early 1970s, the United States Operations Research Professor Saaty proposed AHP. AHP is an easy way to solve some complex and ambiguous questions and it is particularly suitable for solving quantitative analytics questions. Analytic Hierarchy Process divides the decision making process into objectives, guidelines, programs and other levels. Based on these levels, it can make qualitative and quantitative analysis. AHP is essentially a decision making process. It divides complex problem into various constituent elements and groups into an orderly hierarchical structure according to dominance. Then it compares relatively importance of the hierarchy factors by pair comparison and then with human judgment, we order the importance of comprehensive and decision making factors. AHP reflects the basic characteristics of these people thinking and decision making, namely decomposition, judgment and synthesis. AHP is an effective way evaluating suppliers as a result and it is a model that is used frequently now, in part due to its applicability to the situation of uncertainty and subjective information. AHP can clearly reflect the many related factors between each other, allowing policymakers to rationalise the complex problems in decision analysis while allowing the demand side to seriously consider and weigh the relative importance of indicators. All in all, AHP divides the evaluation index and object into multiple levels of elements by comparing pairs in the same level of importance. When giving

comprehensive comments of suppliers, we need focus on all the factors but in the final conclusion of these factors, the importance of value by evaluators should be considered. This is a MODA method for qualitative and quantitative analysis which gives attention to people's initiative in examining uncertain environments according to the human experience, intuition and insight for judgements. Also, it can show some qualitative factors in a quantitative form.

2.3.5.3 Costing

Costing (cost-based approach) is a common way to solve a single product-based purchasing selection problem. Firstly, it calculates procurement cost of suppliers (consisting of the purchase price, purchase and transportation costs and other expenses) by comparing all products that meet the business requirements and then simply chooses the lowest-cost supplier. The advantage of this method is to help buyers consider the overall purchase cost when making decisions, not just considering product prices and thus we can make more rational decisions.

2.3.5.4 Mathematical programming

Mathematical programming is an effective method for vendor selection and optimisation of purchases under the conditions of single and multiple sources of supply. According to single objective programming and multi-objective programming, mathematical programming can be divided into the single-objective programming model and the multi-objective programming model.

2.3.5.5 Fuzzy comprehensive evaluation method

Using some concepts of fuzzy math, the fuzzy comprehensive evaluation method establishes a comprehensive evaluation framework to evaluate fuzzy problems, to which it will then draw a concrete evaluation according to the fuzzy math method calculation (Harrington, 2002). According to the Degree of Membership theory in fuzzy mathematics, comprehensive evaluation method transfers qualitative evaluation into quantitative evaluation and it will make an overall evaluation of problems which are difficult to determine or define and factors which are uncertain. It has a clear result and is strongly systematic. It can solve vague problems and those that are difficult to quantify and it is suitable for solving all kinds of non-deterministic problems. Starting from the qualitative fuzzy selecting, it will calculate results through the fuzzy transformation principle. Taking into account of numerous factors that are difficult to determine, we do not have a quantitative solution of each factor indicator, but we have a fuzzy evaluation of factors by the experts. From there, we have a calculation

according to statistics from the expert groups providing selection factors in the assessment index system and according to the mathematic model (Ren, 2006).

2.4 SWOT analysis

2.4.1 Definition of SWOT analysis

SWOT refers to Strength, Weaknesses, Opportunities and Threats. Based on these four aspects, SWOT analysis is a process analysing external and internal environment that the object may face. After analysing the external and internal environment, we will find a best strategic combination. It will conduct a comprehensive overview of the internal and external aspects of the research object and formulate a universal method suitable for the research object's strategic strategy based on the advantages and disadvantages of the research object, also the opportunities and threats they face.

In the early 1960s, Kenneth Andrews discussed several points of SWOT analysis such as the strengths and weaknesses (Hill & Westbrook, 1997), however he did not complete a comprehensive analysis of enterprises. Not until the 1980s did Professor Weihrich (1982), from the University of San Francisco, collect all these factors together to analyse enterprises comprehensively (Shen, 2009). We can see that there is no precise author in establishing the modern SWOT analysis method. However, undoubtedly, Harvard Business School has played an important role in the foundation of the modern SWOT analysis process (Madsen, 2016).

The early SWOT analysis method was mainly used in the analysis of corporate development strategies. It is more like one of the basic routines leading the trend of the times in the field of corporate planning and strategic management (Andrews, 1971; Mintzberg, Ahlstrand, & Lampel, 1998). It has been an incredible analytical tool for strategic management and competitive intelligence. Since creation, SWOT analysis has been expanded to incorporate all different kinds of factors including industrial factors (Ouyang & Wu, 2006; Tian, 2007), regional economic factors (Zhou, 2011; Xu, 2015), city planning factors (Xiao & Luo, 2010) and national strategy factors (Zhang, 2011; Li, 2014). As such, SWOT analysis has become a famous standard across management. Osgood (2006) regards SWOT analysis as the basis of strategic plans and Orr (2013) regards it as an advanced critical analysis method. Thus, SWOT analysis is not only a strategic tool but is also a framework for use in our daily lives (Kay, McKiernan, & Faulkner, 2006).

	Strengths	**Weaknesses**
Opportunities	SO strategies	WO strategies
Threats	ST strategies	WT strategies

Figure 2-4 Matrix diagram of SWOT analysis

As we can see from figure 2-4, the SWOT matrix diagram identifies favourable and unfavourable aspects, internally and externally, offering managers various options and strategies. However, we should bear in mind that internal factors relate to finance, operation and the marketing of enterprises while the external factors relate to the political landscape and technological challenges of the external environment. Kotler (2003) holds that opportunities and threats should be defined according to the probability of occurrence and that the strengths and weaknesses should be defined using internal factors. SWOT analysis can be divided into four combinations: SO strategies, WO strategies, ST strategies and WT strategies. Opportunities and threats are not totally opposite to the other but strengths and weakness are. By using SWOT analysis, managers can use their strengths to seize opportunities and find a way to overcome some threats and weakness (Schnaars, 1998; McDonald, 1999; Kotler, 2000).

The SWOT model is widely used. However, the traditional SWOT analysis method has obvious limitations. Firstly, when analysing the corporate environment, the traditional SWOT analysis defines the internal conditions and the external environment respectively. It does not consider the corporate environment as a whole. There is no in-depth study of the interrelationship between the various elements of the company's internal conditions (advantages and disadvantages) and the external environment (opportunities, threats), which to a certain extent fragmented the integrity of things. Secondly, traditional SWOT analysis believes that opportunities and threats exist only in the external environment and advantages and disadvantages exist only in the internal environment. However, in reality, strengths and weaknesses may appear in the external environment and opportunities and threats also appear in the internal environment. It ignores the internal links between the external opportunities and threats of the company and the internal conditions of the company. Thirdly, the traditional

SWOT model is mostly used for qualitative analysis and it is impossible to differentiate many influencing factors. The key and secondary impact factors cannot be reflected in the strategic choice. When the term of the strategy exceeds three years and the influencing factors increase and become more complex, the limitations will undoubtedly be revealed. Therefore, subsequent scholars have developed many other models based on the basic principles by improving the traditional SWOT model. The most obvious improvement of these models is to develop the qualitative SWOT analysis method into a quantitative one.

Mikko, Prankel, and Trezevant (1994) introduced the AHP into the SWOT analysis. Firstly, it quantifies the internal and external factors affecting the strategic management of the company, then ranks these influencing factors and finally matches these factors with alternative strategies. Wang and Gan (1995) believe that the traditional SWOT analysis is a single use of a qualitative and non-systematic analysis method. It outlines a fuzzy corporate marketing strategic position by listing various performances of strengths, weaknesses, opportunities and threats. The conclusions and judgments however, do have some subjective blindness. They combine qualitative and quantitative analysis and used mathematical tools such as Delphi method, vector, gradient, polar coordinates and four-dimensional coordinate systems to propose mathematical concepts such as strengths, weaknesses, opportunities, threats and strategic strengths and strategic strength coefficients. A quantitative model of SWOT marketing strategy analysis was constructed to make the analysis of marketing strategy more mathematical, scientific, systematic and quantitative.

Su, Wang, and Zhou (2001) introduced the utility theory into the SWOT analysis. Based on the solution to the problems of operations research and production and sales, he tried to propose a series of optimal solutions to practical problems from a quantitative point of view. They believe that the use of quantitative models for general common sense or preliminary performance analysis will complicate the actual work. However, using the quantitative SWOT model to analyse meticulous and rigorous industry and regional development issues will have greater benefits. Li (2001) combined the SWOT model with the assumptions of the future, quantified the various influencing factors and conducted a systematic analysis. In the end, an implementation strategy plan and two alternative strategies can be obtained. Sun, Yang, and Shi (2012) constructed a SWOT strategic positioning model based on nonlinear principal component analysis method, which achieved the organic combination of SWOT qualitative analysis and nonlinear quantitative analysis and fully considered the relationship between SWOT sub-factors that influence the strategic positioning. By introducing a nonlinear

principal component analysis method, the model avoids the disadvantages of AHP-SWOT and other linear-based SWOT strategic positioning models and improves the scientific and credibility of the analysis results.

2.4.2 Applications of SWOT analysis

As mentioned above, SWOT has been widely used in different level of strategy selection, including the enterprise level, regional level and national level. It is of great value not only for business management, but even for critical thinking in our daily lives.

2.4.2.1 Application of enterprises

SWOT analysis method is one of the most widely used strategic analysis tools for companies and researchers. It summarises the various aspects of internal and external conditions of an enterprise and then analyses the advantages and disadvantages, opportunities and threats of the organisation. The strengths and weaknesses analysis of SWOT focus on the strength of the company itself and its comparison with competitors. The opportunities and threats analysis focus on the possible impact of external environmental changes on the business (Jin, 2007). SWOT analysis has been widely used at the enterprise level and the analysis method matures as studies are performed on its usage.

Houben, Lenie, and Vanhoof (1999) holds that the operation of enterprises is closely related to internal and external factors and as such, SWOT analysis is a very useful tool for small enterprises. In the course of its development, SMEs have shown various development trends and there are bound to be many choices in adapting to the strategies of SMEs. The combination of qualitative and quantitative, static and dynamic SWOT analysis provides a solid foundation for SMEs' strategic choices and can serve as an effective tool for strategic planning of SMEs. Smith (1999) has performed statistical data collection focusing on 150 different materials procured by Scottish enterprises and has used technology and financial data to analyse strategic plans. Ahmed, Zairi, and Almarri (2006) has performed analysis of the quality management of Air China using SWOT analysis.

Chen (2016) believes that the SWOT analysis method has the advantages of being intuitive and simple and that without the aid of accurate data and professional tools, it can also draw convincing conclusions. Therefore, it has been widely used in enterprise strategic research and competition analysis and has become an important analytical tool for strategic management. She uses the SWOT analysis method comprehensively analyse and evaluate the external environment and its resources of a power grid company and then proposes a

corresponding enterprise development strategy. Li (2006) analysed the advantages, disadvantages, opportunities and threats of China's agricultural product logistics implementation of supply chain management using SWOT analysis. Based on this analysis, she puts forward strategic proposals for developing China's agricultural product logistics supply chain management. Pan (2005) applied SWOT analysis to strategic cost management. He combines the company's own internal conditions with the external environment so that enterprises can take advantage of opportunities, reverse disadvantages and avoid risks. It can provide information for companies to obtain or maintain cost advantages and develop cost strategy measures.

Xue (2011) and Rao (2015) both believe that SWOT analysis can help companies, organisations, or certain systems to "know oneself and know one another" and judge the overall level of their position in the industry. It is convenient for them to effectively adjust their resources and positioning in the course of competition so as to achieve advantages and avoid disadvantages and avoid weaknesses. He also pointed out that in the course of competition and development, enterprises must integrate advantages, avoid disadvantages, face threats and adjust strategies so that they can know each other and promote their development. Hou (2007) constructed a patent strategy system consisting of five types of information research; research and development, application, defence and implementation. Based on the above, she has designed a patent selection strategy for companies based on SWOT analysis and developed four patent strategies for SO, ST, WO and WT.

2.4.2.2 Application of non-profit organisations

Dyson (2004) from the University of Warwick placed SWOT analysis into the resource strategy. Higginbottom and Hurst (2001) put SWOT analysis into the British sanitation evaluation system which is intended to build a system to ensure the sanitation quality in a large teaching hospital. Using SWOT analysis, Savickas (2007) offered a professional strategic organisation for use that is the International Association of Applied Psychology.

Crow, Hartman, Mahesh, Henson, and Jacques (2008) believe that the application of SWOT analysis in the medical field can analyse issues from global awareness, fully mobilise the advantages of various departments and enhance the effectiveness of nursing. Jeroen, Van, Gerard, Kees, and Wijk (2012) applied the SWOT analysis to four case studies of the Dutch health care organisation and proposed a new SWOT analysis method that includes expectations and learning processes. Meng, Zhang, Sun, Zhao, and Li (2016) divided the patients into two groups: the control group and the study group. The researchers used the

SWOT analysis to formulate a different nursing strategy than used with the control group. The results showed that SWOT analysis can help scientifically analyse kidney stones problems and develop appropriate nursing strategies. Liang and Ping (2012) applied the SWOT analysis method to the selection of nursing home development strategies. Under the new situation, it improved the efficiency of resources utilisation in Cadre Sanatoriums and opened up new sustainable development Areas for Cadastral Sanatoriums and then rapidly improved the development strategy for the comprehensive strength of cadres sanatoriums. Chen (2013) applied the SWOT analysis method to adjust the overall development strategy of hospital medical consortiums. SWOT analysis is conducive to the establishment of a medical consortium, the rational allocation and full use of health resources and the promotion of personnel mobility, complementary advantages and sharing of equipment.

The above scholars applied the SWOT analysis method to the medical field and some scholars applied the SWOT analysis method to the education field. Westhues, Lafrance, and Schmidt (2001) apply the SWOT analysis into the study of human resource requirements of social workers in Canada and analyse the advantages, disadvantages, opportunities and threats of social work education and occupation in detail. Sun, Zhang, and Zou (2012) using SWOT analysis comprehensively and systematically, analyse the strengths, weaknesses, opportunities and threats of industry-specialised universities. On this basis, he designed the development strategy of the colleges with distinctive characteristics of the industry and put forward six strategic choices for the sustainable development of the industry with distinctive characteristics. Zhong (2013) discusses the application of SWOT analysis in the field of library science. Ying and Qu (2007) using the SWOT analysis method analysed the introduction of talents in local colleges and universities in Beijing and proposed countermeasures from the perspective of strategy and practice. This provided some ideas and methods for local colleges and universities in Beijing to formulate talent introduction strategies and thus, these colleges can achieve the purpose of promoting more and more talented people in local universities in Beijing. Wu (2015) introduced the SWOT analysis method into party building work in colleges and universities, explored the path of party building in colleges and universities under the SWOT matrix model and tried to provide useful lessons for party building work in colleges and universities.

2.4.2.3 Application of some industries

Wilkins and Hall (2001) conduct a SWOT analysis of the wine industry in British Columbia and the signing of the North American Free Trade Agreement creates opportunities

for large-scale grape growing and wine quality improvement. Khan and Fazili (2015) review the literatures of planting and sales of the global and Indian flower industry and use SWOT analysis to analyse the current status and future development potential of the Kashmir flower industry. Taking Tangshan as an example, Tian (2017) analyses the development of some high-tech industries and proposes some strategic plans for these high-tech industries. Ouyang (2006) studies the industrial integration of Changsha, Zhuzhou and Xiangtan, after which he points out the strengths, weaknesses, opportunities and threats that the three cities currently face. From there, he proposes some development models for these three cities which could be of great value for industrial integration with these cities' development. Using SWOT analysis, Zhao et al. (2016) analyse Poland's mining investment environment from the aspects of politics, economy, labour force and infrastructure. On this basis, the SWOT matrix is constructed and the SWOT analysis of Polish mining investment decision is proposed. It is believed that investors should take full advantage of Poland's superior geographic location, rich mineral resources, high mining technology and good economic conditions. With the "One Belt One Road" development opportunity, grasp the policies of the Polish mining industry and try utmost to avoid investment risks and do a good job in risk assessment and investment budgeting.

Based on the analysis of the status quo of China's third-party logistics, Zhu (2007) uses SWOT analysis method matching internal and external factors and forms a four cross-combination development strategy. By analysing the development characteristics of China's third-party logistics with good external opportunities and significant internal defects, the reversing development strategy is taken as the key development strategy of China's third-party logistics at the present stage and concrete implementation suggestions are put forward. Liu (2013) uses SWOT analysis method to systematically analyse the internal strengths, weaknesses, external opportunities and threats of grape industry development, finds a suitable strategic positioning for the development of grape industry in Hengyang City and proposes rationalisation proposals to promote the development of grape industry in Hengyang City. Wang (2012) applies SWOT analysis to the development of strategic emerging industries.

2.4.2.4 Application of national strategy

McFarlane (2010) used SWOT analysis to explore the feasibility of successful entrepreneurship in Jamaica and conducted an effective assessment of the current environment in terms of geography, history, economy, society and culture. Derakhshani and

Hart (2010) conducted a SWOT analysis on the establishment and operation of contact centres in South Africa. They believed that contact centres have become important growth industries in many developing and emerging countries and the contact centres have attracted outsourcing services from the Northern Hemisphere through offshore outsourcing services which offers new opportunities for a developing country. Zhao and Xing (2010) added the mission and value analysis, strategic controllability analysis and political support analysis to the SWOT model. After which Zhao established a conceptual framework for the strategic management of government departments. Zhang (2011) carried out SWOT analysis on the characteristics of China's national defence construction and economic development. On this basis, he designed a set of civil and military development strategies with Chinese characteristics combined with internal resources and the external environment. Sun (2017) applied SWOT analysis to public security border defence forces in making counter-terrorism intelligence crisis decisions. Combining the AHP analysis method with the weights of various factors, the development strategy of the Public Security Frontier Defence Force counter-terrorism intelligence crisis decision making strategy was determined, which provided a valuable reference for the public security frontier defence forces in responding to terrorism. Liu, Hu, and Du (2006) applied the SWOT analysis method to the construction of military procurement information and proposed the SO strategy, WO strategy, ST strategy and TW strategy for military procurement information.

Liu and Sun (2011) constructed a SWOT quantitative model suitable for urban environmental planning using mathematical methods such as fuzzy comprehensive evaluation method, matrix analysis method, value engineering, four-dimensional plane coordinates and intensity gradients. Taking Anqing City as an example, the model was introduced to guide the urban environmental planning and the development direction and corresponding countermeasures of environmental planning in Anqing City were identified, which provided theoretical support for the sustainable development of the city. Based on field research around the marketing situation in Lianyungang, Li (2014) uses SWOT analysis to identify the strengths, weaknesses, opportunities and threats of Lianyungang and he then proposed a marketing development strategy for Lianyungang. Based on the previous investigation and diagnosis, Zhou (2011) applied the SWOT theory to the formulation of strategies for regional economic development. Through the comprehensive evaluation and analysis of the analysed objects, we draw conclusions and adjust methods and resources at both strategic and tactical levels to ensure that the objects being analysed are implemented to achieve the goals to be

achieved.

To sum it up, SWOT analysis method is widely used in various fields of economy and society. Whether it is a profit organisation or a non-profit organisation, a micro-individual entity, or a macroscopic object in a regional country, SWOT analysis can be used to analyse the principle and help analysts to choose the optimal development strategy among many influencing factors.

2.5 Summary

This chapter, as the theoretical basis of this study, has a literature review of enterprises internationalisation, procurement management and SWOT analysis. First of all, the internationalisation of enterprises and international trade theory can explain the inevitability and rationality of trade, foreign-invested companies and multinational corporations from the macro level and provide theoretical support for the transnational and trans-regional factor selection and flow of enterprises. What's more, the theory of enterprise procurement management explains the necessity of the management of production factors and the importance of the company's profit sources from the microeconomic individual level and provides a theoretical basis for the internal organisational activities. Lastly, the SWOT analysis method provides a method for the selection of corporate strategies.

Chapter 3: Research Methods and Data

Based on the enterprises internationalisation theories, procurement theories and SWOT analysis, in this chapter, interviews and questionnaires will be designed for case companies, which detailed explain the design, implementation and processing of interviews and questionnaires. The content of the investigation involves the internal and external environments and macro-level and micro-level issues of the case companies. In particular, we will pay attention to the fact that the case company's procurement strategy has been adjusted under the BRI circumstance. This chapter provides research methods and actual research data for the analysis of the full text.

3.1 Interview

3.1.1 Interview design

The design and choice of interviewees and interview questions of this chapter are based on the purchase management theory, U-M and SWOT mentioned in Chapter Two. The internal and external environments and macro and micro issues are all involved in the case company, particularly the brand-new environment that the BRI has brought for the case company, which provides sound factual basis for us to study the adjustment of the purchasing strategy of the case company under the background of the BRI. See the appendix for detailed interview content.

The interview involves three parts: interviewing each of the internal case company, governmental departments and upstream suppliers. Through the interview of the internal case company, the present status and future development trend of the internalisation of the raw material purchase of Group A in China could be known; through the interview of governmental departments, the present status and future development trend of transnational purchase of raw materials in China could be known; through the interview of the upstream corporation, that is the flour supplier, the business and supply conditions of the upstream flour supplier could be known. The following briefly introduces the design of the interview structure:

(1) The first part of the interview is from the perspective of the internal company.

Interview questions of this part are designed on the basis of U-M, influence factors of the company internalisation and SWOT mentioned in the chapter two, mainly involving strategic adjustments of the enterprise under the context of the enterprise purchase management, increasingly deepening internalisation and the BRI. The purpose is to know the present status and future development trend of the internationalised raw materials purchase by interviewing responsible personnel in the purchase and finance departments and other personnel who are involved in the transnational purchase activities with questions from the aspect of the purchase management, internationalisation deepening, SWOT and future purchase strategy of the company (see Table 3-1).

(2) The second part of the interview is from the perspective of governmental departments. Interview questions are designed based on the international trade theory and SWOT mentioned in the chapter two, mainly involving the external environment of companies' transnational purchase. The purpose is to understand the present status and future development trend of transnational purchase of raw materials in China by interviewing personnel in governmental departments, such as customs or export trade departments from the aspect of the present macro trade environment, pros and cons of the BRI and the future development trend of Chinese corporations (see Table 3-2).

(3) The third part of the interview is from the perspective of upstream supplier of the case company. Interview questions are designed on the basis of the coordination theory of the supply chain, mainly involving the raw material supplier of the case company. The purpose is to understand the supply condition of the upstream flour supplier of the case company by interviewing principals of the flour supplier. It also collects information of the upstream company of the case company from the aspect of the cognition of suppliers to the raw material market and the expectation to the development of the transnational purchase under the new background of the BRI (see Table 3-3).

Table 3-1 Content of the internal company interview design

Aspects	Specific questions
Purchase management	How does the raw material purchases matter to the company? Whether the purchase activities are frequent? What is the procedure to control the purchase cost? How is the raw material storage managed? How to choose and manage suppliers?
Internationalisation deepening	What is the present status of the transnational purchase of raw materials? What are the differences between the transnational and domestic purchase of raw materials? What factors will influence the raw material import? What are mainly considered when selecting the raw material source? How do decision-makers think of the business opportunity of the international purchase? What advantages does the company have over the other enterprises? What barrier does the purchase internalisation of the raw material have? What is the company's strategy of internationalisation deepening?
SWOT	What are the present condition of the international market, domestic market and industrial development of raw materials respectively? What is the influence of the new background of the BRI? What pros and cons, opportunities and threats will the BRI bring about? What influence will the BRI bring to the industrial raw material purchase?
Purchase Strategy	What is the purpose of the high-rise to deepen the internalisation? What are the strategies to react to the BRI? What is your expectation of the future transnational purchase of raw materials? What attitude does the company have towards the BRI?

Notes: See the appendix for the detailed interview content

Table 3-2 Content of the governmental department interview design

Aspects	Specific questions
The macro environment	What preferential policies does the raw material import have? Is there any illegal raw material import in the food industry? How much does the imported raw materials account for the total raw materials in China？ Can you talk about the regionalism of the transnational purchase of raw materials in the food industry? Are there any limitations or

	supports in tariff?
Strengthens and Weaknesses	Whether the BRI stimulates the transnational purchase of raw materials in the food industry? What opportunities and threats will the BRI countries bring to the Chinese transnational purchase? What preferential policies does the BRI provide for the transnational purchase?
Development trend	What is the intention of the government with the transnational purchase? Is there any industrial and regional preference?

Notes: See the appendix for the detailed interview content

Table 3-3 Content of the upstream supplier interview design

Aspects	Specific questions
The flour industry	How much do you know about the foreign enterprises of the same industry? What are the pros and cons of domestic flour suppliers compared with foreign vendors? What differences between the domestic and imported flour in quality, package and price? Whether domestic flour suppliers are superior to foreign suppliers in the aspect of supply and coordination? What pros and cons, opportunities and threats do flour suppliers have and face, under the new climate of the BRI? How do domestic suppliers compete with foreign suppliers of the BRI? What are the expectations of the transnational purchase development?

Notes: See the appendix for the detailed interview content

3.1.2 Interview process

Based on the previous interview design, the interview process involves three aspects: the case company, governmental departments and upstream suppliers. The interview was conducted by phone. All interviewees were interviewed one by one according to interview questions that had been designed before. The entire interview process was recorded and all those recording materials were transformed into documents and saved separately for later research when the interview was completed. Through this interview, the author obtains the first-hand material about the cognition of practice field to the transnational purchase during the enterprise internationalisation.

(1) The first interviewees are principals from the purchase department of the case

company including case purchasing director, purchasing category manager, raw material purchasing specialist. This interview consists of four aspects: the purchase management, internationalisation deepening, SWOT and future purchase strategy of the company. All interview questions are open questions, which are asked individually and sequentially. Since the interviewee has been involved in the work of the purchase department in the case company for a long term, they have abundant experience in purchase and are very familiar with the business of the company and its departments, which assures the reliability and specialty of their answers to questions about the purchase of the case company.

Acquire the truest material to enrich the contents of study and to make study more persuasive through making investigation on purchasing department of the case company and collecting the recent material about purchasing of the case company. During the interview, we should know the respondents true feelings, communicate with interviewee through material and understanding we already have of the case company in order to have comprehensive understanding of the current situation of the case company in purchasing aspect.

(2) The second interviewees are officials of customs department in some place including the first-level customs supervisor, the first-level customs inspector and the first-level customs officer. The interviewee part includes the following three aspects: macro-environment, advantages and disadvantages of the BRI and the development trend of China's enterprises. The interviewee was asked these questions one by one during the interview. The interviewee is the high-level leader of customs department in this place and he has worked in customs department for decades. He has a rich working experience, is familiar with the real situation of import and export of raw material in China now and has a better understanding of the existing of policies on import and export.

(3) The third part of the interview is from the perspective of the chief executive of upstream supplier sales department of the case company including the head of the enterprise, vice president in charge of sales, sales manager. The interview mainly covers the suppliers' understanding of raw material market and the development trend of cross-border purchasing in the new environment of t the BRI. Ask the interviewee these questions one by one during the interview. The interviewee is the senior staff of the upstream supplier of the case company. He is familiar with the raw material the case company uses -the production and operation situation of flour. His answers help to learn more about the supply situation of flour raw material and help to know cooperation relationship between the case and upstream suppliers and supply-chain link.

All in all, firstly we must filter information after interviews and extract information we need from a large amount of information. Then we reorganise information, classify the extracted information, append and analyse to make information simpler and more coherent. Lastly, we should make assessment on information and discriminate the true extent, value, functions, quality of information. Choosing the most accurate and scientific information through assessment in order to ensure this study writing is scientific and make sure the industry supporting information is credible and persuasive.

3.2 Questionnaire

3.2.1 Design of questionnaire

Based on the literature review and interviews with the case companies, the present study has designed a questionnaire for “suppliers (flour manufacturers)”. This questionnaire, aimed at the case companies, is made based on the reference of the second chapter of domestic and foreign literature review, the interview results of Section 3.2 and other types of questionnaires, in an attempt to have a more direct and detailed understanding of some of the basic production and supply of raw materials in the case companies’ supply markets, which can facilitate the in-depth study of the basic status of the case companies’ procurement of raw materials, so as to provide proofs for the construction of judgment matrix in AHP. In order to ensure the validity and comprehensiveness of the survey, based on the author’s cognition of the purchasing activities of the case companies and the interviews with the purchasing departments of the case companies, this questionnaire will identify the target flour suppliers of the case companies.

The design period of the content of this questionnaire stretches from December 2015 to March 2016. The author finished the first draft after preconception and reference to related materials. Later on, by repeated revision with a collection of multiple opinions, the first draft was made as a pre-investigation version. Finally, in order to ensure the quality of the survey and improve the layout of the content of the questionnaire, pre-investigation of the questionnaire was carried out before the formal questionnaire survey. In the pre-investigation process, the requirements on questionnaire response were standardised and suggestions from the respondents on the questionnaire were added. In the end, after these efforts and continuous improvement, the current final version of the questionnaire was made. On the front page of the questionnaire, the survey purpose of the questionnaire is briefly introduced. The results

are only used for academic research and by no means for commercial use. It is declared that any information provided by the respondents will be kept strictly confidential. The topics covered in the questionnaire are not judged as right or wrong, so as to ensure that investors will be reassured when filling in the questionnaire.

The questionnaire was formulated according to the methodology of developing a questionnaire. It includes four aspects, namely basic information, procurement information, production information and sales information of the flour suppliers, the case companies. There were 46 questions in total. These four aspects are briefly analysed in the following part.

3.2.1.1 Basic information

Because most of the answers to the questions are influenced by individual subjective factors, some basic information needs to be included in the questionnaire to facilitate the understanding of the respondents and ensure the credibility of the results. As for the main part of the questionnaire, the first part covers the basic information of the respondents, including six questions, namely gender, department, age, working years in the company, working years in the department and working years in the industry. In this part there are all multiple-choice questions to which the respondents can pay little careful consideration and therefore fill in quickly. This not only can alleviate the respondents' psychological burden and enhance their sense of empathy and belonging, but also can help the author grasp the respondents' basic information.

3.2.1.2 Procurement information

As flour is one of the main raw materials for the case companies and wheat is the raw material of flour, the second part of the questionnaire mainly deals with the supply of wheat from the respondents. There are 13 questions in total, including the source of the wheat, the proportion of imported wheat, the price of wheat, the relationship with the wheat supplier and the frequency of wheat purchases. The questions in this part are in a more complex form, including multiple-choice questions, multiple-choice questions (more than one answer), sequencing questions and supplementary open questions. For example, the procurement of wheat from the domestic areas are among multiple-choice questions (more than one answer), peak and slack seasons for the acquisition of wheat among the sequencing questions and the purchase price of wheat among the supplementary open question. These non-single-answer questions are marked to remind respondents of the various forms. Open questions require the respondents to answer in words, so as to ensure that the questionnaire is more complete, so

that the results are more real, comprehensive and intuitive. Through the analysis of such questions, the flour suppliers are remarked and the factors affecting flour production and supply are shown.

3.2.1.3 Production information

The third part covers the production issues concerning the flour companies with a total of nine questions, including the age of the enterprise, the form of ownership, the scale of production, the main processing plant, the proportion of the cost of raw materials, auxiliary materials and the proportion of cost, labour costs and logistics costs. In this part, there are mostly multiple-choice questions, except the layout of the processing plant being a sequencing question. The topics in this section more clearly show the various costs of the flour companies, which are relatively familiar to the respondents, so that they can answer without any major difficulty.

3.2.1.4 Sales information

The fourth part deals with the sales of flour companies with 18 questions in total, including peak and slack seasons for sales of flour, sales hours within capacity, sales areas, warehouse shipment quantity, shipping methods, shipping distance, the share of customers old and new, the proportion of export flour, returns rates, mainly among multiple-choice and sequencing questions. The questions in this section will help the author understand the whole supply chain process between the case companies and the flour companies and have a clearer and thorough perspective on the main factors and links that affect the case company’s raw material prices.

At the end of the questionnaire, the author reminds the respondents that the questionnaire is over, expresses gratitude to the respondents for their patience and earnestness in the survey and respondents are thanked for their support with this survey.

3.2.2 Questionnaire distribution and collection

In order to maximise the coverage of the questionnaire and ensure the high efficiency of its collection, this survey is conducted in a way that involves both a paper questionnaire and an electronic questionnaire, in an effort to achieve the convenience of the survey method, the directness of process and the comprehensiveness of results. In the meantime, in order to ensure the smooth progress of the survey, the author carried out meticulous planning and careful implementation of the preparatory work.

For this questionnaire, the author, in the principle of sample selection, determined 15 flour suppliers of the case companies. The author sent e-mails to the executives of the flour suppliers who would print the questionnaire in hard copies and distribute them randomly to 2-3 employees of the company. The executives collected the questionnaire that were filled out and had them scanned or photographed and then sent them by e-mail back to the author. In order to improve the collection rate and accuracy, from the beginning to the end of the survey, the author repeatedly communicated with the executives via email and reminded them to ensure the timely collection of the questionnaire. At the same time, the author emphasised special issues to pay attention to concerning distributing, filling in and collecting the questionnaires, in order to ensure the smooth completion of the survey. A total of 35 questionnaires were sent out, of which 31 were collected and were valid, with the effective collection rate reaching 88.6%.

In order to make better use of the survey results and achieve the research purpose of this study, the team used statistical software to conduct statistical analysis of the questionnaire results. It took one week to complete data classification, summary and entry. In the process of data entry, completeness of the questionnaire was established as the standard to determine whether the questionnaire was valid or not. If more than 90% of the questions were answered, the questionnaire was regarded as valid. During the process of inputting all the questionnaires into the statistical software, in order to convert the qualitative questionnaire into quantitative data analysis, we adopted the method of variable assignment to ensure the accuracy of the data statistics and to make better use of the questionnaire results for information disclosure status analysis, so as to fulfil the purpose of this study.

3.3 Analytic Hierarchy Process

3.3.1 Definition of Analytic Hierarchy Process

AHP is a method of analysing a complicated issue in a hierarchical structure mode then prioritising factors in the hierarchy by pairwise comparison and conducting comprehensive analysis of the judgment in order to determine the importance ranking of the factors. Meanwhile, we should also acquire the weight of each influence factor as well as the weight of each candidate scheme under each factor. Subsequently, on the basis of the combined weight, select the optimal schemes that own the maximum weight. Finally, determine the optimal design by sequencing the decision schemes. AHP involves not only the quantitative

factors, but also the qualitative ones and it is suitable for solving a great deal of practical problems which traditional optimisation techniques cannot solve. The analysing steps are as follows.

(1) Analyse the decision object and determine key decision factors according to business features

(2) Establish the hierarchical structure based on the relations of decision factors

Generally, the hierarchical structure consists of three layers, namely target layer, criterion layer and scheme layer. Target layer, involving only one factor, defines the projected goal or ideal result. Criterion layer, including main and secondary criteria, specifies the criteria that affect the target. Scheme layer presents the specific resolutions and proposals for realising the target.

(3) Design judgment matrix, ask experts for ranking and collect the scores

On the basis of hierarchical structure, judgment matrix could be established in such way that each factor owning subordination serves as the first matrix element and all factors subordinated are arranged at the first row and first line in sequence. Next, fill in the judgment matrix according to the following method: repeatedly inquire of experts and people who fill the matrix, conduct pairwise comparison on matrix factors and assign values to the matrix in accordance with prioritisation. Scale values of assignment importance are shown in the following table 3-4.

Table 3-4 Decision factors importance rating and assignment

a_{ij} assignment	Importance rating
1	Factor i is equally important as Factor j.
3	Factor i is slightly more important than Factor j.
5	Factor i is markedly more important than Factor j.
7	Factor i is significantly more important than Factor j.
9	Factor i is extremely more important than Factor j.
1/3	Factor i is slightly less important than Factor j.
1/5	Factor i is markedly less important than Factor j.
1/7	Factor i is significantly less important than Factor j.
1/9	Factor i is extremely less important than Factor j.
2、4、6、8	Median of above each two adjacent judgments

(4) Compute the weight in hierarchical single arrangement on the basis of experts'

ranking and carry out consistency check to results.

Due to the large number of pairwise comparison, it is hard to achieve 100% consistency. If the degree of consistency fails to meet the requirements, the company shall recheck and amend the pairwise comparison until qualified and then continue to conduct comprehensive calculation. To sum up, judgment matrixes are required in practice to generally satisfy the consistency and to undergo consistency check. Only the judgment matrixes that pass the consistency check are verified as logistically reasonable. Only in this condition, can we continue to carry out analysis on results.

(5) Compute the ranking weights in hierarchy and carry out consistency check to results.

(6) Analyse the ranking results and get the optimal procurement mode.

Thus, repeatedly inquiring of experts and people who fill the matrix would be the most critical step of AHP. Then filling in the judgment matrix according to the following method, conduct pairwise comparison on matrix factors and assign values to the matrix in accordance with prioritisation. And lastly, scale values of assignment importance are shown in the following table.

3.3.2 Process of experts' ranking

We will choose staff of procurement departments as the experts. These experts will rank the factor influencing procurement and we will collect this information and data by email. This process includes two steps.

The first step: choose 5 staff of a procurement department and email them about what are the influencing factors of procurement. After receiving their email reply, sort these factors by frequency. And lastly, select seven factors by frequency as the key factors of material procurement including supplier management, procurement price, product quality, transportation, delivery and timeliness, stock management and procurement risk.

The second step: firstly, email the 5 staff attached with table of decision factors importance rating and assignment (Table 3-4). Let them score these 7 factors we mentioned in the first step and then integrate these scores and get the average score after reply of email. Lastly, assign Table 3-4 according to the average score of the 7 influencing factors and the judgement matrix would be average grade giving by 5 experts of Group A's staff.

3.4 Summary

This Chapter elaborates the design, implementation, treatment and results of the interviews and questionnaires and investigates the internal and external environment of the procurement of the case company from different perspectives and different objects. Based on the analysis above, this chapter not only provides an in-depth understanding towards the whole supply chain of case companies but also provides a realistic basis for the analysis of the purchasing status of the case company and the analytic hierarchy process of the purchasing strategy in the next chapter, which helps to achieve the cognition and expectation of enterprises in internationalisation and transnational purchasing under the new background of the BRI.

Chapter 4: Case Study of Group A

4.1 Preliminary findings from interviews and questionnaires

4.1.1 Preliminary findings from interviews

4.1.1.1 The procurement department of the case company

Firstly, from the purchase management perspective, the interviewee believes:

(1) Raw material is the significant component of products of enterprises and it has something to do with the sales and operations of enterprises. If the purchasing cost of raw material cannot be better controlled, this can have a direct impact on the bottom line of enterprises. For example, there are some quality questions on raw material purchasing especially within the fast moving consumer products (food) industry where this has something to do with people's livelihood. Except damage brought by the quality questions to enterprises' reputation, quality questions also jeopardise personal safety and we cannot underestimate these problems.

(2) Purchasing cannot operate alone and it must cooperate and support with each department. Purchasing activities cover the following links: searching for the source, auditing suppliers, confirming sample, inquiring, bargaining, business negotiation, managing orders, tracing the delivery date, complaining quality. The purchasing link is complicated.

(3) At present, company implements strict control process of purchasing cost and the implementation is comparatively put in place.

(4) At present, company manages raw material inventory through quota management to ensure the number of raw material purchasing is the same with that of actual use and avoid excess inventory. If quota data changes, the purchasing department will adjust the purchasing plan of raw material accordingly. Excess material caused by inaccurate quota data, which production department should give feedback in time and give excess material back to warehouse.

(5) For companies, the requirements of choosing suppliers and management are severe. Companies not only demand qualified information and license of purchasing suppliers but make assessment on suppliers. They are willing to choose suppliers which have a strong

reputation, have rich experience in the industry and fine equipment meanwhile, applying strategic supplier management to keep the quality stable.

Secondly, from the deepening of internalisation perspective, the interviewee thinks that:

(1) 20% of raw material that enterprises production need are imported. The import volume of palm oil is the largest while that of flour is less.

(2) Compared with internal purchasing, cross-border purchasing is different from it in purchasing process of raw material and management measures. Cross-border purchasing should consider risks of foreign exchange and price and complex trade procedures and more limits. For example, for cross-border purchasing, except almost all formalities and procedures of internal purchasing, cross-border purchasing covers application for import and export license, insurance, booking shipping space, product clearance. Then cross-border purchasing cycle is longer than internal purchasing cycle.

(3) Due to differences of raw material price, quality and other aspects in internal and foreign market, the export and import volume of raw material will change. The great changes of the export and import volume of raw material will be brought about by raw material price, quality, more advanced techniques of foreign suppliers, exchange rate and other aspects. The key reason why enterprises choose to import raw material from foreign countries is that they can make more benefits. The primary reason is internal raw material cannot meet satisfaction.

(4) Purchasing from import source of raw material, which is line with international trade convention and international convention and treaties and is took based on having comprehensive understanding of law economic and trade law of suppliers and laws and regulations on import and export of our country.

(5) Decision-makers of enterprises should purchase raw material which is market-oriented operation and cost-effective to keep competitive in market.

(6) Compared with other competitive enterprises of the same industry, our enterprise boasts international purchasing advantages in technologies and services. As for technologies, due to division of labour on the basis of specialisation at home and abroad, professional skills of specific industry constantly change. Compared with other competitive enterprises, we have obvious technological advantages; as for service quality, foreign suppliers maybe have products inventory in our country. Once needed, products can be delivered immediately and service quality can keep pace with it.

(7) The time gap between the validity of product and international purchasing cycle is

narrow, which affects the purchasing number of raw material and to avoid abandonment loss of products caused by soon-to-expire products; frequent fluctuation of foreign exchange, if judgment is false, it will bring about loss of exchange rate; preparation of international transportation delivery, it is difficult to estimate problems in long-distance transportation; amortisation of transportation costs and various services fees; all these factors will affect the number of raw materials which enterprises purchase from abroad.

(8) The international barriers of purchasing raw material are the following: time difference, it means enterprises have to adjust their working time to adapt to the local working time when they negotiate with suppliers over international purchasing issues; Price risk: International commodity prices will change with the supply-demand relationship of foreign markets, so there will be delays in information transmission. Complicated trade procedure: The flow of labour, capital and other production factors are affected by economic development, commodity competitiveness and tariff and non-tariff protection measures of different countries.

(9) In the deepening of the internationalisation, the company chooses the way of self-exploration based on own strengths and weaknesses, rather than follow the footsteps of others.

What's more, in the respect of the SWOT analysis, the interviewee holds the view that:

(1) At present, the domestic palm oil price continues to fall because of the high yield of soybean in South America. It is expected that the output will be further increased, which will bring more pressure to the market. The American farmers take advantage of the rising soybean price to sell soybeans. The quantity the soybeans have been sold accounts for about half of the yearly output. With the increase in output and the slowdown in domestic demand, the broader market drops to the lowest level of the recent three months. For the fast-moving customer goods, the company takes instant noodles which have a meagre profit as the main product. The purchase amount of palm oil accounts for more than 20% of that of the raw material, so the fluctuation of palm oil price has an important influence on the gross profit of the products.

(2) The policies of the BRI, which has just been implemented, have not caused any significant impact on the company's raw material purchasing activities. However, it is undeniable that the BRI involves more than 60 countries all over the world, more than 4 billion people and more than 20 trillion U.S. dollars in total economic output. When facing plenty of opportunities, the Chinese food enterprises will also meet intricate geopolitical and

legal issues, different customs, as well as differentiated attitudes in cooperating with China. At the same time, trade and tariff barriers also form an insurmountable gap for Chinese food companies. Optimising the layout and variety structure of grain imports and exports is the policy of the BRI food imports. Kazakhstan is a major exporter of grain in the world and exports 2-5 million tons of grain per year, which are mainly wheat and flour. For the company cooperating with enterprises which have overseas businesses, a variety of tedious procedures can be saved in the actual operation. For example, an overseas trading company of grain and oil farming group in Shaanxi carries out oils and oil seeds and wheat trading in Kazakhstan. Trading the high-quality wheat back to China will meet various needs of the domestic market. For the price is lower than the protection price of the domestic wheat, the flour price is controlled from the raw material production cost. What's more, the flour production procedure is similar both at home and abroad, while the difference is the need. The overseas markets mainly use flour for making bread (high gluten) and cake (low gluten). The usage of flour #646 has a low gluten index accounts for 80% of the total flour usage of the company. Thus, it can be taken into consideration that not only produce the flour that meets the domestic market but also the flour matches with the foreign needs, thus to find a supplier which is suitable for our product structure.

(3) China will promote the integration of the regional economy through the economic belt strategy of the Silk Road in the 21st century and drive the growth of regional trade activities and a wider cooperation among regions. The BRI has not caused any significant impact on the company by now, but in the future, this industry will fully exert the comparative advantages of different economies to minimise the raw material trade cost and promote the reasonable allocation of resources among regions. All these will profoundly influence the development of China's food industry.

Finally, in the respect of the future purchase strategy of the company, the interviewee holds the view.

(1) After the BRI was introduced, senior executives of the company intend to deepen the internationalisation of flour procurement. The production cycle of grain, the transportation cycle, various formalities required by the international trade and foreign exchange transactions requires all departments of the company to have a right understanding of the BRI and asks all employees to learn relevant business skills, thus to look for suitable suppliers to establish strategic partnerships.

(2) The abundant agricultural resources and technological needs of more than 60

countries along the BRI have opened up a broad prospect for the "going global" and "bringing in" of agriculture in China. The "Promote the Silk Road Economic Belt and the 21st Century Maritime Silk Road Vision and Action" jointly released by the NDRC, the Ministry of Foreign Affairs and the Ministry of Commerce in 2015 puts forward: "to expand the mutual investment field, carry out in-depth cooperation in agriculture, forestry, animal husbandry and fishery, agricultural machinery and agricultural production and processing areas." In the long run, the grain supply and demand in our country will always be in a state of tight balance. The implementation of the BRI strategy will be conducive to accelerating the modernisation of the grain logistics system, speeding up the clustering of grain industries in advantageous regions and accelerating the globalisation of grain resources deployment as well as the integration of grain markets. The company's attitude toward the opportunities brought by the BRI is to collect all relevant information. All internal functional departments take the initiative to improve skills to tightly seize the development opportunities, thus to promote the company to a new height.

4.1.1.2 Government customs department

First, in the respect of the macro environment, the interviewee holds the view that:

(1) At present, the preferential policies on the import of raw materials published by the country mainly target energy raw materials and productive raw materials which is in short supply in the domestic market, including chemical raw materials, metal raw materials and vegetable oils. The publishing of the "Measures of the People's Republic of China for the Administration of Customs Import and Export Tax Relief on Taxes and Exemptions" and the "Measures for the Administration of Taxes Recycled in the Customs of the People's Republic of China on Importation and Levying" aims to maintain the normalisation of domestic production supply and to speed up the industrialisation in China as well as enrich the types of domestic consumer products.

(2) All departments of the country, especially the customs departments, have a strict control over the import of raw materials. Only several enterprises have acts of illegal importing or export tax rebates cheating.

(3) Taking the import of wheat as an example, over 90% of China's hard red spring wheat, hard white wheat, hard red winter wheat and soft red winter wheat are imported from Australia, Canada and the United States respectively due to insufficient production of high-quality wheat in the domestic market. This means that the import of raw materials is

highly regional, mainly in a few countries or regions and this is usually determined by the market.

Next, in the respect of advantages and disadvantages of the BRI, the interviewee holds the view that:

(1) At present, the BRI policies are not very elaborated. A series of policies have not directly and obviously stimulated the increase of the import or export of raw materials in the food industry.

(2) Although the government strengthens the development of overseas resources, the key area of the chemical industry has the priority to develop. Overseas investment gives priority to the steel, nonferrous metals, building materials, railways, electric power, chemicals, textile, automobiles, communications, engineering machinery, aerospace, shipbuilding and marine engineering industries. However, the government still focuses on the light industry internationalisation by setting up processing plants based on local product and animal husbandry resources in available countries, devoting to food processing projects in the countries with abundant labour forces, low product costs and short distances to target markets, as well as developing clustered food processing bases of complete upstream and downstream links in foreign industrial parks with favourable conditions. Such conducts promote the benign interaction between the international cooperation and the domestic industrial upgrade.

(3) The state council publicises a series of guidance, where local tax bureaus are required to serve and manage development strategies relating to the BRI. Specifically, work relating to local taxes should be implemented by taking effective measures from the following three aspects: abiding by agreements to guarantee interests, upgrading services to achieve development and normalising management to realise compliance. Meanwhile, tax agreements and relating explanatory documents signed by and between China and other countries must be strictly enforced, so as to guarantee the unified law enforcement, assisting the State Administration of Taxation’s approval and filing to extend the treaty benefits to the non-residents.

Lastly, considering the future development tendency, the interviewee holds the view that although in the short term, the product and food industries have not been included in the BRI, the government successively encourages foreign enterprises to invest in the farming, forestry, animal husbandry, side-line production and fishery, as well as agricultural food processing and manufacturing industries. It means to promote the standard and service internationalisation of the domestic agricultural food processing and manufacturing, to

promote the refined processing in relation to domestic industries, to extend the industrial chain, to construct green manufacturing bases and finally to promote the benign interaction between the international cooperation and the domestic industrial upgrade.

4.1.1.3 Flour suppliers' sales department

The interviewee denotes that:

(1) Comparing with foreign suppliers, domestic suppliers that provide the flour to domestic enterprises possess obvious edges and flaws. Foreign flour suppliers are of large scales. The flour manufacturing is generally monopolised by two to three enterprises, the demands to which are relatively unitary, namely the high gluten baking flour and low gluten cake flour. China is a great power both in the wheat manufacturing and consuming. Before 2000, the flour manufacturing industry was easy to enter, when most flour plants were small-scale. Most enterprises were regional plants with obsolete manufacturing techniques, which normally supplied the flour to the ordinary for steaming and boiling. After 2000, flour enterprises successively advanced in the scale and the techniques in accordance with market demand changes, specialising civil flour manufacturing and tailoring specialised flour for enterprises according to their demands. They are attached with scale advantages and their products' quality and stability are changing the market. With the influence of the national cereals protection policies and the revolution of the economy market, cereals will be market-driven in the near future. As a result, large-scale enterprises will register a more competitive edge. The purchasing-storage-processing-quality stability-short transportation distance values will be completely demonstrated.

(2) The flour manufactured by domestic enterprises is different from that of foreign enterprises in the quality, packages and prices. Foreign flour manufacturing techniques are almost the same. Quality diversity results from various demands, namely high gluten baking flour and low gluten cake flour. On the contrary, Chinese flour demands are multiplied with higher standards comparing with foreign countries. Cases are especially true in traditional Chinese flour food processing, where requirements are exerted on the colour, content, plasticity, leaven availability and tastes. Foreign countries are advent in environmental protection, where loose packages and paper packages are common. Since the last year, foreign flour prices are lower than that of the domestic. The former are mainly influence by the cereal prices, while the later are slightly higher owing to the national policy and import limitation.

(3) The two enterprises also represent differences in supply coordination. Domestic flour

manufacturing are superior in scale and quality but are inferior in stability, because foreign lands are managed by farms with unified wheat varieties, plantation and management whereas domestic lands are managed by families.

(4) As the BRI is a national strategic plan, it calls for a relatively long period to be implemented with the cooperation from other countries. There appears a gap between the imagination and reality, resulting in obvious edges and flaws, as well as chances and threats. Issues of agriculture, farmer and rural area, as the highest domestic interest, serve for the interests of the ordinary. Domestic manufacturing structures and the ordinary's interests will not be affected by the BRI. In addition, wheat import is under national limitation under the supply to demand law with certain quotas. China imports wheat of about 3.3-3.8 million tons. Chinese government will not largely increase the import but to adjust import orientation. The BRI is conducive to the improvement of the national economy and Chinese international standing, bringing chances to the all-round market. It will not threat domestic cereals. In a comprehensive analysis of the market demand, the BRI will increase both the plantation rate of the high-quality wheat and the GDP.

(5) In the future ten years, foreign flour enterprises are not likely to develop in China, since China has not been completely open to the cereals market. Although Russia, Kazakhstan, Ukraine and other Central Asian countries boast price advantage, the government will import based on the domestic market demand. The manufacturing structure is not allowed to be influenced by the import and the import orientation will not bring any effects to the domestic flour market. The enterprise is devoting to get higher quota to decrease the cost and to increase the competitiveness. According to the requirement raised by the National Development and Reform Commission, the quotas will be assigned by the real processing demands to shrink import and to improve enterprises' competitiveness, which will benefit enterprises to some extent. Since China has not been completely open to the cereals market, trans-national purchase is hard to be realised. However, as the market goes global, the free trade zone will present improved edges. The future for the manufacturing and domestic and foreign sales is bright.

In this part, complete and detailed accounts to the interviews of the three parts, i.e. case enterprises, government departments and upstream suppliers, are unrolled. This helps the case enterprises to fully understand the industry status and the development tendency. This part also provides realistic basis to the construction of analytic hierarchy process in Chapter Four. The interview approach, however, is limited for the sake of subjectivity and partiality that

cannot draw to a convincing conclusion. Therefore, based on the interviews, the following part deals with questionnaires to the case enterprises in detail combined with the theory analysis in Chapter Two. The credibility and persuasion of the data and conclusion are ensured by the all-round and multi-angle data statistics.

4.1.2 Preliminary findings from questionnaires

4.1.2.1 Variable Definition

In the present study, in order to facilitate the analysis, each single choice question is set as an independent variable. For example, gender corresponds to the variable “gender” and age corresponds to “age”. Moreover, each option of each multiple choices question and sequencing question is set as a variable. For example, with regard to the problems of wheat purchasing in the second part of the questionnaire, the multiple choices question is preferred with seven options, each of which is set as a variable, as a result of diversity and uncertainty. Based on the transformation above, it is more helpful to simplify the statistics and analysis of the results of the questionnaire.

The single choice question and the corresponding variable are assigned according to the order of the options. For example, the name of the variable “Gender” is “sex” and the first option is “male”, the second option is “female”. Suppose one of the respondents is male, therefore the first option is chosen, then gender = 1; otherwise, gender = 2.

As for multiple choice questions, each option is set as an independent variable and the assignment of each variable is “0” or “1”, which means that its variable is equal to “1” if the option is chosen; otherwise, it is equal to “0”. For example, the question, “Which part of China does wheat, purchased by the company, mainly come from?” includes seven options, namely, “area 1”, “area 2” ... “area 7”. If one of the respondents believes that the purchasing area includes “north China”, “northwest” and “northeast” region, that is, fourth, fifth and seventh options are checked, then area 4 = 1, area 5 = 1, area 7 = 1, area 1 = area 2 = area 3 = area 6 = 0.

The method above is also true of the sequencing question. That is, each option is set as an independent variable, but the assignment of the variable is “0”, “1”, “2” and “3”. The option is first chosen and its variable is equal to “1”; the option is secondly chosen and its variable is equal to “2”; the option is finally chosen and its variable is equal to “3”; if the option is not chosen, its variable is equal to “0”. For example, the question, “According to the amount of wheat purchase, three months, with the most wheat purchase amount, are sorted

and the month with the largest amount is designated as 1, the month ranking second is designated as 2 and the month ranking third is designated as 3 .", includes 12 options, namely, "month 1", "month 2", ..., "month 12". If one of the respondents believes that the peak season of purchase is July, August and September, then month 7 = 1, month 8 = 2, month 9 = 3, month 1 = month 2 = month 3 = month 4 = month 5 = month 6 = month 10 = month 11 = month 12 = 0.

4.1.2.2 Results Analysis

Table 4-1 is the first part of the questionnaire - basic information. First of all, as is shown in the table, most of the respondents are male and most of them are in the sales department, much more than half of the total, which indicates that there is a gender bias even in food sales department. Secondly, over 70% of staff are older and have relatively stable jobs. In addition, they have been working for more than ten years in this industry, this department and this company with rich experience, which helps to achieve the enterprise operation stability. Therefore, for the case company, the continuous and stable operation of raw material suppliers plays a significant role.

Table 4-1 Distribution statistics of respondent types

Type	Option	Frequency	Percentage
Gender	Male	24	77%
Department	Sales department	19	61%
Age	36-50	24	77%
Working life in the company	More than 10 years	23	74%
Working life in the department	More than 10 years	22	71%
Working life in the industry	More than 10 years	24	77%

Table 4-2 is the second part of the questionnaire-purchasing information. It can be seen from the table that the main domestic areas of wheat purchasing are the main domestic wheat producing areas, central China, north China and northwest China, which is in line with the economic knowledge. However, the proportion of imported wheat is mainly concentrated on two proportion sections, which is 0-5% for 45% of enterprises in purchasing the imported wheat and 11%-50% for 48% of enterprises in purchasing the imported wheat. The fact above shows that, for some enterprises, the import of raw materials is a common event in daily operations, which also indicates that cross-border purchase of wheat raw materials is profitable. As a matter of fact, this point of view can also be verified through the comparison

of the prices of imported and domestic wheat. Most flour manufacturers purchase wheat from the old suppliers, indicating that the flour mill also attaches great importance to the establishment of long-term supply cooperation relationship, which to some extent shows the stability of the flour market supply. For the surveyed medium-sized enterprises, the frequency of wheat purchasing is mainly 12 times a year, that is, once a month, or once or twice a year, that is, once every 7 months or 12 months, while the purchase frequency of small enterprises is four to six times a year, that is, once every 2 months or every 3 months. In the meanwhile, we can also conclude from Table 4-2 that most of the wheat suppliers are state-owned enterprises and the proportion of private enterprises is relatively small. The fact above shows that state-owned enterprises still occupy an important position in the production and sale of raw materials of grain in China, which is conducive to the stability of the price and quantity of the supply of raw materials in such a country with a dense population.

Table 4-2 Distribution statistics of procurement information types

Type	Option	Frequency	Percentage
Main source areas of domestic wheat purchasing	Central China / North China / Northwest China	17 / 15 / 10	55% / 48% / 32%
Proportion of imported wheat purchasing quantity	0%-5% / 11%-50%	14 / 15	45% / 48%
Purchasing price of imported wheat (yuan / ton)	1000-1500	9	29.0%
Purchasing price of domestic wheat (yuan / ton)	More than 2000	13	42%
Proportion of wheat purchasing from old suppliers	51%-70%	28	90%
The frequency of wheat purchasing (month / time)	0-1 / 7-12	14 / 12	45% / 39%
Three months of wheat purchasing with the largest amount	8、7、6	30 / 27 / 14	97% / 87% / 45%
Three months of wheat purchasing with the least amount	2、3、4	30 / 29 / 17	97% / 94% / 55%
The size of the largest 3 wheat suppliers (10000 tons)	More than 100/ 0-50	11 / 11	35% / 35%
The proportion of stat- owned wheat suppliers	51%-70%	16	52%

Table 4-3 is the second part of the questionnaire-production information. As is displayed in the table below, most of flour manufacturers, more than 10 years old, are non-state-owned and non-collective enterprises, which are different from most wheat suppliers, mainly composed of state-owned and collective enterprises. With regard to the production and sale of flour, the large proportion of private enterprises can contribute to the efficiency of market operations. Most of these flour manufacturers are medium-sized enterprises with an annual

output of about 20-39 tons and there is no serious monopoly phenomenon in the whole flour supply market. Production and processing areas are mainly located in wheat producing areas, which reduces the cost of raw materials transportation. Of the whole process of flour production, the cost of raw materials occupies the largest proportion, while other auxiliary material costs, labour costs and transportation costs account for small proportions.

Table 4-3 Distribution statistics of production information types

Type	Option	Frequency	Percentage
Enterprise age	More than 10 years old	28	90%
Enterprise nature	Non-state-owned and non-collective enterprises	28	90%
Flour output (scale)	20-39 tons (medium)	27	87%
The distribution areas of 3 main processing plant site	Central China, Northwest China and North China	15/11/10	48%/35%/32%
The proportion of raw material (wheat) cost to total cost	Over 80%	17	55%
Proportion of auxiliary material cost to total cost	Less than15%	19	61%
The proportion of labour cost to total cost	0-10%	18	58%
The proportion of transportation cost to total cost	3-5%	24	77%

Table 4-4 is the fourth part of the questionnaire - sales information. First of all, it can be seen from the table below that the peak and slack seasons for wheat sales almost match with the growth and harvest periods of wheat. Secondly, whether in the busy season or slack-season, most enterprises are inclined to keep a small amount of inventory, which means that the enterprises, according to the orders of purchasing and production, strive to reduce the cost of warehousing. The transportation of wheat flour mainly depends on road transportation, since railway transportation takes a long time and water transportation is not suitable for transporting flour. Moreover, the long-distance transportation is mostly transported to the southern areas. Thirdly, since more than half of the orders are from old customers, flour companies and upstream and downstream companies are inclined to establish long-term cooperative relations. With small proportion of exported flour, flour produced in China has a weak advantage in international competition. Finally, the low return rate of flour lead to the low threshold and technology of flour industry.

Table 4-4 Distribution statistics of sales information types

Type	Option	Frequency	Percentage
The 3 months with the most sales	12/11/10	30/17/15	97%/55%/48%
The 3 months with the least sales	2/4/5	28/19/12	90%/61%/39%
Sales time of inventory maintenance in peak season (month)	0-1	25	81%
Sales time of inventory maintenance in slack season (month)	0-1	17	55%
The 3 major flour sales areas	Central China/Southern China/Southwest	17/15/12	55%/48%/39%
The most important mode of flour transportation	Road transportation	31	100%
The longest distance of transportation in the order (km)	Over 1000	23	74%
The proportion of an order with the distance >1000 km	21%-50%	13	42%
The proportion of an order with the distance <500 km	More than 50%	18	58%
Purchase volume of the largest 3 customers (10000 tons per year)	Over 0-20/100	11/11	35%/35%
The proportion of orders from old customers	71%-100%	23	74%
The proportion of exported flour	0-10%	26	84%
The proportion of private enterprises' purchase amount	31%-50%	14	45%
The proportion of state-owned enterprises' purchase amount return rate	0-30%	18	58%
Return rate	0-5%	31	100%

4.2 Introduction of the BRI

4.2.1 Background of the BRI

4.2.1.1 Concept of the BRI

The BRI, which refers to the "Silk Road Economic Belt" and the "21st Century Maritime Silk Road", is not an entity or a mechanism but an idea and initiative for cooperative development launched and supported by the Chinese government and also a China's national strategy. It is preliminarily estimated that the total population of the Belt and Road countries is about 4.4 billion with an aggregate economic output of about 21 trillion U.S. dollars, accounting for 63% of the global population and 29% of the global economic output respectively. The BRI agrees well with the common needs of countries along the routes and opens up new windows of opportunity for them to obtain complementary advantages from each other and to pursue open development and it is also a new platform for international

cooperation that is promoted under the framework of equal cultural identity. The BRI is China's strategic decision and reflects the spirit of peace, exchange, understanding, tolerance and win-win cooperation.

4.2.1.2 Origin of the BRI

The "Silk Road" refers to the ancient commercial trade routes that began from ancient China, connecting Asia, Africa and Europe. In the narrow sense, the Silk Road generally refers to the Silk Road on land, while broadly speaking; it includes the Land Silk Road and the Maritime Silk Road.

The "Land Silk Road", an on-land commercial and trade corridor linking the hinterland of China with Europe, came into being between the 1st century BC and 2nd century BC and remained in use until the 16th century. It was the principal road, by which the eastern economy, politics and culture communicated with the western ones. The "Maritime Silk Road" is a maritime channel for trades and cultural exchanges between ancient China and foreign countries and it is mainly centred on the South China Sea, so it is also referred to as the South China Sea Silk Road. The Maritime Silk Road, the most ancient known sea route, was formed during the Qin and Han dynasties, developed from the Three Kingdoms period to the Sui Dynasty, prospered in the Tang and Song Dynasties and transformed in the Ming and Qing Dynasties.

The opening of the Silk Road effectively promoted economic and cultural exchanges between the east and the west and played an active role in contributing to the prosperity of the Han Dynasty. This Silk Road is now still an important route for the exchanges between China and the West. China's technologies, such as silk products, iron-smelting, drilling and paper-making, were introduced to the western counties through the Silk Road and western fur, Ferghana horses, fruits, Buddhism, magic, music, dance, sculpture. also came to east countries. The "Silk Road" became a bridge for economic and cultural exchanges between the East and the West.

In contemporary society, China is developing more and more rapidly and enjoys more and more reputable status in the world and China's altitude is becoming more and more powerful. Opening up the "New Silk Road" is conducive to establishing a multi-bilateral mechanism between China and other countries, promoting cooperation among regions, strengthening China's foreign exchanges, exerting our country's influence in the world and facilitating the building of a community of shared future featuring political mutual trust,

economic integration and cultural inclusiveness.

4.2.1.3 Significance of the BRI

The strategic concept of the BRI implies the transformation of China's strategy of opening up and it has drawn great attention and strong resonance from domestic and related countries, regions and the world at large. The reason why such a huge effect has come about is that this magnificent conception has a profound and far-reaching significance.

(1) The strategic concept of the BRI conforms to the needs of the structural transformation of our country's opening up to the outside world. After the reform and opening up, the early stage opening focused on the southeast coast regions, so provinces and cities such as Guangdong, Fujian, Jiangsu, Zhejiang and Shanghai became the first beneficiaries and "leaders" in economic development, while the vast area of middle and west regions has always played the role of "followers", which to a certain extent has resulted in the regional imbalance in the development of eastern, central and western regions. The BRI, especially "the Belt", starts from the west region and leads to west Asia and Europe, which will surely make major adjustments to the geographical pattern of China's opening up to the outside world. The central and western regions will take the lead in the responsibility of developing and rejuvenating two-thirds of China's land area and together with the eastern regions, assume the important task of China's going global. At the same time, the eastern region is still upgrading its level of opening up through the construction of a contiguous "free trade zone" and remains an important engine for opening China to the outside world in all aspects.

(2) The BRI complies with the needs of China's factor mobility transformation and international industrial transfer. After large-scale effective investments and technological upgrading, China has already possessed the capability of exporting its factors. By the end of 2014, China's foreign investment had exceeded 100 billion U.S. dollars and China has become a net capital exporter. The BRI coincides with the new trend of factor mobility in China and facilitates the exports of China's production factors, especially high-quality excess capacity, through the five-pronged approach, namely policy coordination, connectivity of infrastructure and facilities, unimpeded trade, financial integration and closer people-to-people ties, so that the developing countries and regions along the "belt" and the "road" share the fruits of China's development.

(3) The BRI conforms to the needs of the structural transformation of China and other economic cooperation countries. At present, China's economy is facing the tough task of

comprehensive transformation and upgrading. Some of the surplus production capacities formed in the long-term construction need exporting, while many developing countries in the world are faced with the problem of the lack of capital and technology. Therefore, the BRI will assist these countries and regions in carrying out infrastructure construction so as to help them develop industries such as textile and garment, household appliances and even automobile manufacturing, steel and electricity and improve their economic development and production capacity. As a result, it conforms to the needs of industrial upgrading in China.

(4) The BRI is in agreement with the needs of the transformation of international economic and trade cooperation and economic and trade mechanisms. It is also a new platform for international cooperation that is promoted under the framework of equal cultural identity. The BRI is China's strategic decision and embodies the spirit of peace, exchange, understanding, tolerance and win-win cooperation.

4.2.2 Planning and areas involved in the BRI

4.2.2.1 Main areas involved in the planning

The BRI, a strategy of jointly negotiating investments in projects and building infrastructure and jointly sharing cooperation fruits, includes policy coordination, connectivity of infrastructure and facilities, unimpeded trade, financial integration and closer people-to-people ties -- that is the five-pronged approach. The infrastructure construction takes the lead to drive the development of other related industries in various countries, including logistics industry, financial industry, agricultural and sideline products industries and related household goods industries so as to achieve the ultimate development of all industries, cultural exchanges, common economic prosperity and development. The BRI is China's strategy to move Chinese high-quality production and comparative advantage industries westwards so that countries along the routes could benefit first and the fact can be changed that in history Central Asia countries along the routes just served as the aisle for trades and cultural exchanges between the East and the West. As the BRI involves all fields of production and various aspects of life, it injects new impetus into a variety of fields, fulfils their development potentials and increases their pace of development.

4.2.2.2 Provinces and cities mainly involved in the initiative

The BRI mainly involves 18 provinces, including 6 Northwest provinces, Xinjiang, Shaanxi, Gansu, Ningxia, Qinghai and Inner Mongolia; 3 Northeast provinces, Heilongjiang,

Jilin and Liaoning; 3 southwest provinces, Guangxi, Yunnan and Tibet; 5 other provinces or cities, Shanghai, Fujian, Guangdong, Zhejiang and Hainan; and inland province Chongqing. In addition, the plan also involves Hong Kong, Macao and Taiwan regions. See Figure 4-1 for details.

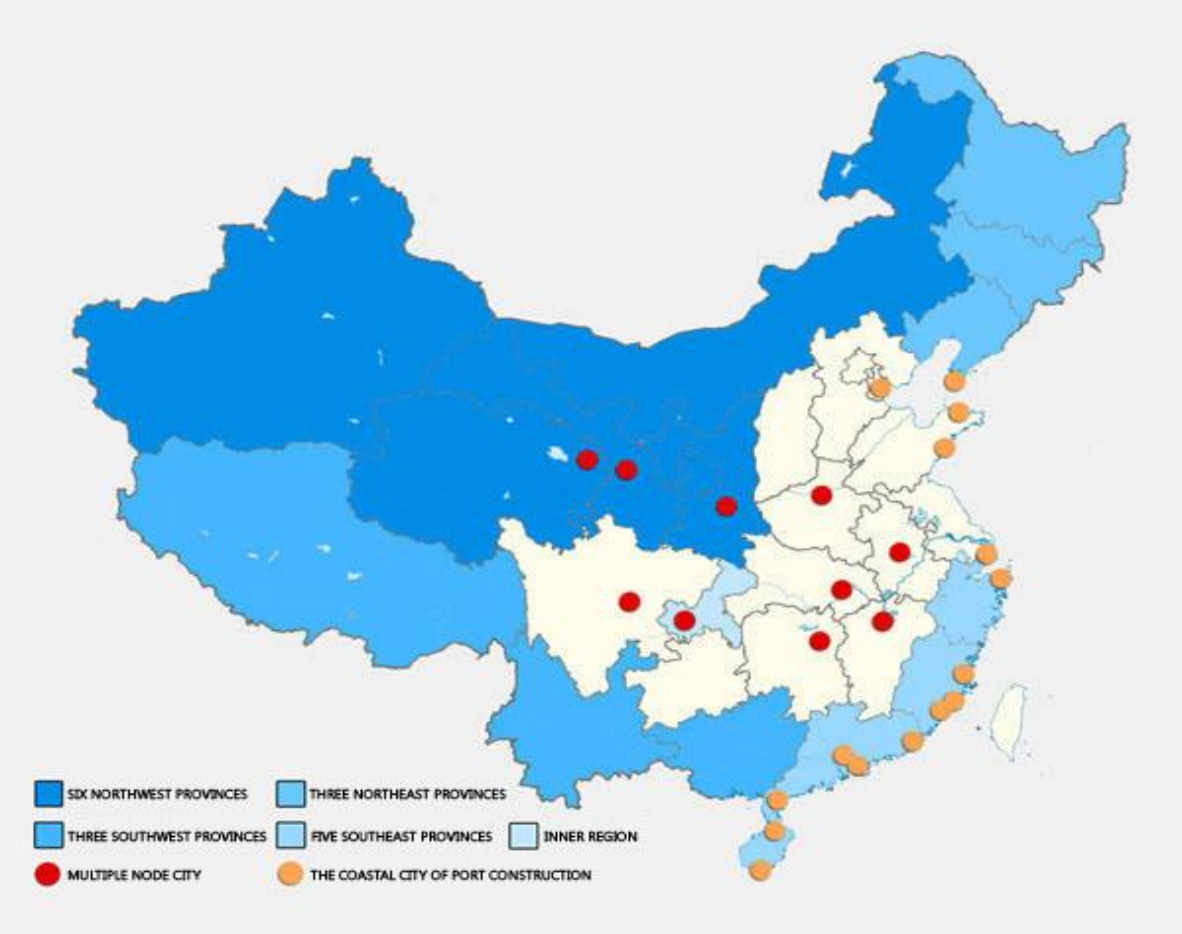

Figure 4-1 Planning map of the BRI

Source: Liao (2015)

4.2.2.3 Countries mainly involved in the initiative

The BRI is a westward "journey" that involves 65 countries along the routes and it is a "strategic masterpiece". The BRI is not only an economic issue but also a grand strategy in the process of China's rise in the global stage and even an economic and cultural fusion strategy for Europe, Asia and Africa. It is aimed to promoting the orderly free flow of economic elements, efficient allocation of resources and in-depth market integration by creating the largest platform for regional cooperation and development in the world so that the countries along the routes are able to achieve coordination of economic policies and development strategies. In addition, the involved countries can work together to create an open, comprehensive, balanced and inclusive regional economic cooperation framework by

carrying out larger-scale, higher-level and deeper regional cooperation. Therefore, it involves many a country and region, as shown in Table 4-5.

Table 4-5 Countries and regions involved in the BRI

Regions	Countries
2 East Asia countries	China, Mongolia
1 North Asia country	Russia
11 Southeast Asian countries	Indonesia, Thailand, Malaysia, Vietnam, Singapore, Philippines, Myanmar, Cambodia, Laos, Brunei, Timor-Leste
6 other CIS countries	Ukraine, Georgia, Azerbaijan, Armenia, Moldova, Belarus
8 South Asia countries	India, Pakistan, Bangladesh, Sri Lanka, Afghanistan, Nepal, Maldives, Bhutan
16 West Asia and North Africa countries	Saudi Arabia, United Arab Emirates, Oman, Iran, Turkey, Israel, Egypt, Kuwait, Iraq, Qatar, Jordan, Lebanon, Bahrain, Yemen, Syria, Palestine
16 Central and Eastern Europe countries	Poland, Romania, Czech Republic, Slovakia, Bulgaria, Hungary, Latvia, Lithuania, Slovenia, Estonia, Croatia, Albania, Serbia, Macedonia, Bosnia and Herzegovina, Montenegro
5 Central Asia countries	Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan

Source: Wu (2017)

4.2.3 Opportunity of flour procurement under the BRI

4.2.3.1 To broaden the areas of procurement of raw materials

The BRI has promoted the communication among Eurasia, Asia and Africa, provided a stable platform for regional cooperation and development for the countries and regions along the routes, accelerated the flow of international elements and efficient allocation of resources and provided all the countries with a wide range of choices of geographical elements for economy and development.

Wheat, the only raw material used to process flour, is so vital to processing enterprises where flour is used as the main raw material and it is predominantly produced in East Asia,

Southeast Asia, Eastern Europe, North Africa, North America and other regions. Although the output of wheat in China ranks first in the world, with the constraints on resources and environment in agriculture development in our country and the increase in internal demand for agricultural products, the traditional advantage of low prices of agricultural products continue to be weakened. Consequently, the domestic production of wheat has been unable to meet the demand of consumers and enterprises that need diversified and large amount of wheat (Jin & Huang, 2005)

Free Trade Zone, as a carrier of the pilot testing under the new pattern of the BRI, advances the development of port economy and free trade parks (ports) for the regions along the routes. The sustained development of the BRI will require the support of a number of coastal port economic zones and free trade parks (ports) as the platform for regional cooperation. Efforts will be made to eliminate obstacles and barriers to institutional mechanisms in the existing open areas, expand market access and promote the opening of key areas to the outside world. Therefore, the formulation and implementation of the BRI can lower regional trade barriers, reduce the trade costs of agricultural products, enable cross-regional and cross-border trades of low-cost wheat and avoid the phenomenon that the domestic price of flour is much higher than that in the international market due to the excessive concentration of import and export markets.

4.2.3.2 To provide convenient transportation and logistics

The BRI is carried out in terms of the land and maritime routes, involving 65 countries on the three continents. To ensure the close connection of those countries, convenient transportation and logistics must be available for their communication and commercial trades. The formulation of the BRI determines that China will mainly focus on the construction of infrastructure in the next 10 years, with the construction of transport as the priority. The transportation industry (ports, highways, railways and logistics) will be the first to benefit directly from the completion of the major Asian-European transport corridor, which will create conditions for boosting the development of regional economy and accelerate the interconnection of multiple means of transportation such as highway, railway, civil aviation and maritime transport, whose throughputs will be significantly improved.

In terms of land transportation, the new Eurasian continental bridge connecting Lianyungang to Rotterdam will consolidate its backbone role in international land transport. At the same time, China intends to build a pan-Southeast Asia railway system starting from Kunming and Nanning to link Southeast Asian land countries. What’s more,

Nanning-Bangkok and Kunming-Bangkok highways have been put into use. The highway system with two horizontal and two vertical lines is coming into being across the Southeast Asian. In terms of water transportation, coastal cities of China and Southeast Asian countries are linked up, at the same time; China funded the construction of the Lancang-Mekong River channel to build a golden waterway. Therefore, the construction of multi-directional transport facilities provides more choices for the import and export of various raw materials in our country.

As wheat is always transported in a large amount, the transport capacity and cost are the important constraints that affect its trans-regional transport. Air transport is expensive with small transport capacity; road transport bears more accidents, risks and less stability; wheat cannot be well preserved via water transport. As a result, rail transport has become the most optimal way to transport wheat over long distances. The New Eurasian Land Bridge Economic Corridor, with the railway transport system across the Asia-Europe continent as the bridge, connects the ocean between the two continents, providing a convenient thoroughfare for the economic and trade exchanges between Asia and Europe. At the same time, the Chinese railway network, the Russian railway network and the railroad networks in other European countries are connected, forming the China-Russia-Europe railway international cargo system and an on-land railway transport network, including Shanxi-Mongolia-Europe, Jiangsu-Mongolia-Europe, Guangdong-Mongolia-Europe and Shenyang-Mongolia-Europe railways. The rail transport networks provide a stable and low-cost transport route for the transport of bulk commodities.

4.2.3.3 To fulfil the diversified needs for flour

As wheat is a worldwide staple, it is widely grown in most parts of the world. Due to differences in climate and geographical location, there are some differences in the quality of wheat produced in several major wheat-producing areas in the world. In terms of climate and geographical location where it grows, wheat can be divided into winter and spring wheat; in terms of the quality of grain, it can be divided into hard and soft wheat; in terms of the colour of grain, it can be divided into red and white wheat. There are differences in the quality of wheat produced in different regions, mainly in moisture, bulk density, impurities, minerals, imperfect grain, protein, grain falling number, colour and odour, gluten, water absorption of gluten, dough stability time, viscosity. At the same time, these differences in wheat affect the choice of the raw material for the flour processing industry. At present, more than 90% of China’s wheat imports from three countries: Australia, the United States and Canada. China

imports of wheat is mainly high-quality wheat, which is under-produced domestically, including Canadian hard red spring wheat, Australian hard white wheat, American hard red winter wheat and American soft red winter wheat. Therefore, the implementation of the BRI will ensure that flour processing enterprises can obtain a wide variety of wheat from different regions and bring about product diversity and diversification of production.

4.3 The situation of procurement cost management of Group A

4.3.1 Introduction of Group A

Group A founded in the 1960s possesses hundreds of incorporated companies, 150 thousand employees and assets of about 200 billion US dollars. Its investments reach Asia, North America, Europe, Australia and other places and six core industries have been developed: pulp and paper industry, agriculture and food processing industry, real estate industry. At the end of the last century, Group A commenced to invest in China, where it has constructed the strategic layout of grain and oil processing, covering developed coastal areas of East China, Southern China and North China.

The food processing industry of Group A is especially famous for B Group, which mainly deals in the production of instant noodles, which have 5 varieties and more than 30 kinds of flavours. The products are divided into two main categories, namely boiled noodles and crisp noodles, covering three market segments, including high, medium and low. Its main brand “B1” series have been marketed for over 20 years and the B brand of “B2” is almost known to every household. “B1” and the newly launched “B2” are mainly boiled noodles and the three brands of B3, B4 and B5 are crisp noodles. After several years of unremitting efforts, the B series crisp noodles have been innovated continuously. “B3” and “B4” series boast 15 kinds of flavours after several years’ innovation and improvement of production techniques. The market share of B series has gradually outperformed its rivals and its sale ranks first in some parts of the market. Therefore, flour has become one of its indispensable raw materials for the production and the purchase of flour is related to the production and sale of its instant noodles.

The flour of Group A (mainly refers to B group that is subordinate to Group A in this study) is mainly purchased in Heilongjiang, Liaoning, Shaanxi, Henan, Hubei, Anhui, Jiangsu, Shandong and Guangdong provinces (see Figure 4-2). From Table 4-6, it can also be seen that most of the flour is purchased in Shaanxi, Henan, Hubei and Jiangsu.

Figure 4-2 Distribution of the places where the flour of Group A is purchased

Source: Group A (2014)

Table 4-6 Flour purchase of Group A in different provinces in 2010-2014

Procurement Regions	2010	2011	2012	2013	2014
Ha'erbin	0.15	0.12	0.08	0.06	0.02
Liaoning	0.44	0.52	0.53	0.52	0.36
Shanxi	3.76	4.09	5.07	3.67	3.19
Hubei	1.23	1.23	0.96	0.91	0.40
Henan	1.82	1.55	1.46	1.34	1.30
Anhui	1.21	1.02	0.95	1.04	1.09
Shandong	0.00	0.00	0.00	0.02	0.00
Jiangsu	1.34	0.93	0.88	0.22	0.13
Guangdong	0.32	0.21	0.22	0.44	0.40

Source: Group A (2010-2014)

4.3.2 Procurement pattern of Group A

4.3.2.1 Organisational structure analysis of the procurement department

Group A set up a department responsible for the procurement work. The department has 85 employees and 5 subsidiary departments (Market and Demand Forecasting Department, Purchase Order Department, Supplier Management Department, Direct Procurement

Department and Indirect Procurement Department). The Market and Demand Forecasting Department is responsible for trend analysis and forecasting of the bulk material market, forecasting of sale and production demands, collecting of material demand information, processing and formulation of the planning of procurement demand. The Direct Procurement Department and Indirect Procurement Department is responsible for the selection of suppliers and decision making of fixing prices, at the same time, controls the purchase frequency and orders in collaboration with Purchase Order Department. The Purchase Order Department is responsible for placing orders, supervising orders, expediting orders, returning goods, verifying accounting records with suppliers on the 20th of every month, collecting receipts and making payment applications in coordination with the financial department. The Supplier Management Department is responsible for the development, selection, evaluation and assessment, classification and management of suppliers, as well as the confirmation of the direct and indirect phase material samples. The Direct Procurement Department and Indirect Procurement Department are responsible for the negotiation and determination of prices of the phase materials involved in indirect and direct phase materials; and they are also responsible for the inventory management of the direct and indirect raw materials belonging to the department, including the procurement amounts, cargo volumes, material scrap and other records. They also provide material demand information for the Procurement Department. Finally, they are responsible for examining and verifying the suppliers of corresponding phase materials, corresponding prices and payment applications. The specific organisational structure of the procurement department is shown in Figure 4-3.

There are many kinds of instant noodles and up to 8976 kinds of materials in Group A, each of which has 35 types of materials. In order to facilitate classification management, the company divides materials into two categories: direct materials (flour, palm oil) and indirect materials (package materials and other raw materials) and subdivides them into several sub categories. Each direct and indirect material has a corresponding product manager or a product procurement supervisor. The procurement staff of the Purchase Order Department place and expedite orders of materials (direct and indirect materials) in collaboration with the corresponding product manager or product procurement supervisor.

There are peak season and slack season for the purchase of flour, the most important raw material for instant noodles. The peak season is from September to Spring Festival; the slack season is from Spring Festival to August. For the procurement employees working in the peak season, their work is relatively intensive and tedious and the probability of making errors is

higher. Therefore, a simple and effective procurement organisational structure is essential for the production and operation of Group A.

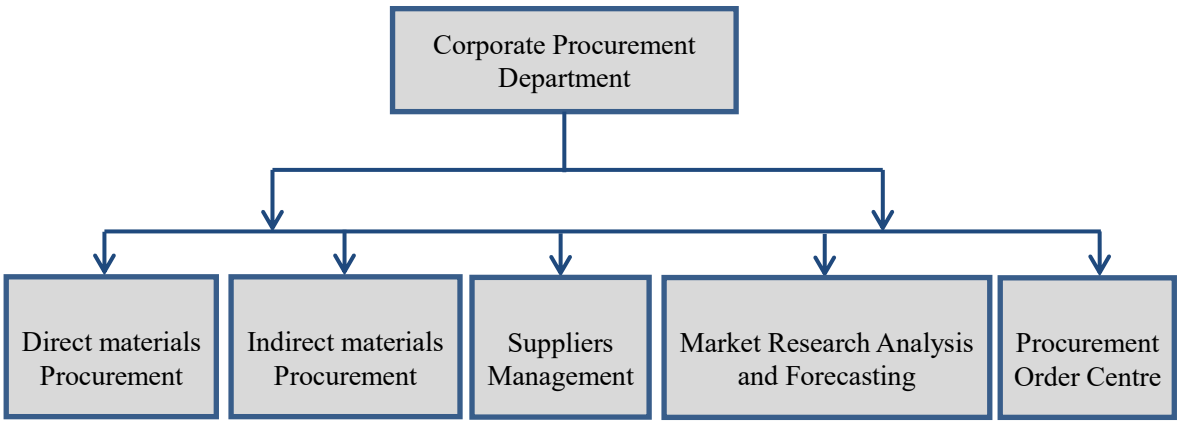

Figure 4-3 Organisational structure of the procurement department

4.3.2.2 Analysis on the procurement management process of raw materials

The procurement management process of Group A consists mainly of the selection of suppliers, sample confirmation, negotiation of prices, placing orders, expediting orders, payment application, verify accounting records and daily problem solving.

In the first place, the Market and Demand Forecasting Department puts forward the demand for the purchase of raw materials according to the orders of the production department. The purchase planning of Group A is made mainly based on the inventory plan for domestic sales and orders of customers, namely order-based and inventory-based production models. After the production centre receives the domestic orders, export orders and delivery orders verified by the sale centre, it passes the purchase planning to the Purchase Order Department based on the BOM information of related products.

The second step is to select and evaluate suppliers and negotiates prices. According to procurement demands, suppliers are selected based on the main factors, such as material prices, quality, delivery time and service quality.

Then, place orders, follow the logistics and take delivery of goods. After receiving the separated purchase plans, the Direct Purchase Department and the Indirect Purchase Department must confirm the materials to be purchased first, then place orders directly, which are faxed to suppliers to confirm. When there is a change in the stocking plan or customer orders, the sales centre, production centre and procurement department will have a meeting to

make the adjustment in time. Then, the procurement department will inform the suppliers immediately of the change so that they can prepare for the delivery according to the new plan. The purchase orders placed by the procurement staff must be confirmed by the manager of the purchase department and then they can be sent to the suppliers. After receiving the orders, the supplier must confirm the orders and affix the seal within the specified time and then they are sent back to headquarters. Then, the procurement staff will follow the orders until the suppliers deliver goods and materials are inspected and put in storage. After that, the staff of the Supplier Management Department will carry out the work of verification of orders and payment.

Finally, make the payment. In accordance with the terms of the purchase and settlement, the Financial Department pays for the qualified materials.

4.3.2.3 Analysis of the purchase costs of raw materials

B Group, a subsidiary of Group A, mainly deals in instant noodles and its production materials include flour, palm oil, packaging and other raw materials. Flour includes flour 30, flour 82, flour 322, northwest No. 1 flour and special flour for spraying; palm oil includes semisolid palm oil, liquid palm oil and solid 42% saturated palm oil; packaging materials include cartons, packaging and envelopes; other raw materials include starch, additives and ingredients, seasonings, spices and other ingredients. At the same time, the materials are supplied to factories in different regions, including factories in Wuhan, Xinghua, Fuxin, Xianyang, Dong'e, Shuangcheng and headquarters. All in all, there are many kinds of materials to be purchased and factories, to which the materials are supplied, are scattered throughout the country.

Therefore, the total cost of Group A chiefly includes the material cost, labour cost, warehouse storage cost, logistics cost, packaging cost and other expenses. The material cost is the total amount of money in the procurement of raw materials; labour cost refers to the money paid for the personnel involved in the procurement, including procurement staff's salaries and bonuses and money paid for the personnel of the management department; warehouse cost refers to the money spent on the storage of the raw materials; product logistics cost is the money spent in transferring the raw materials from the warehouse to factories; packaging cost refers to money spent on the packaging materials; other expenses refers to other related fees, including consumables cost, meeting expenses, suppliers' conference expenses and welfare expenses (money given to staff for holidays and to women who give birth to babies). The specific data is shown in Table 4-7.

Table 4-7 Total cost composition of Group A in 2015

Cost items	Amount (yuan)	Accounts (%)
Raw Materials Costs	441,691,057.4	68.4%
Labour Costs	61,200,000	9.5%
Warehouse Costs	3,729,600	0.6%
Product Logistics Costs	37,280,000	5.8%
Packaging Costs	99,211,451.21	15.4%
Other Costs （Consumable Costs, Meeting Expenses, Suppliers' conference Expenses, Welfare Expenses: Maternity Cost, holiday allowances）	2,474,520	0.4%
Total	645,586,628.6	100%

Source: Group A (2015)

From the above table, it can be seen that the total procurement cost in 2015 is 650 million Yuan, of which the material cost is about 400 million Yuan, accounting for more than 68% of the total procurement cost; the proportion of packaging cost is over 15%; the other procurement cost accounts for no more than 17%. Comparatively speaking, the material cost accounts for a very high proportion of the total cost. Therefore, in order to reduce the total cost, it is necessary to reduce the proportion of material cost.

As the cost of materials accounts for more than half of the total cost, the cost of some bulk materials is analysed. Table 4-8 and Table 4-9 shows the data of procurement of some bulk materials in 2014 by factory C, a subsidiary of Group a, including the quantity and unit price of the materials and the amount of money. Flour 1, flour 322 and flour 646 (flour for spraying) are all wheat flour, while corn starch is non-wheat flour with corn as the raw material. In 2014, the procurement cost of flour 1 and flour 646 accounted for more than 70% of the total procurement cost of the four materials and the proportion was much higher than that of flour 322 and corn starch, which indicates the importance of the wheat flour to factory C.

Figure 4-4 and Figure 4-5 show the trends of the unit prices and procurement quantities of these four materials from January to December respectively. As these charts show, there is considerable fluctuation in the unit prices and purchase quantities of the bulk materials in factory C from January to December in 2014. Figure 4-4 shows that the unit prices of flour 1 and 646 fluctuated little in the 12 months, maintaining at 3200 Yuan per ton and 2900 Yuan per ton respectively. The unit price of flour 322 dropped sharply in November; the unit price

of corn starch showed a slight decline in the first seven months, while the price in August and September went through the roof to 600 Yuan per ton. Therefore, judging from the data of year 2014, there is large fluctuation in the unit prices of some bulk materials in factory C, which has a great impact on the procurement cost of the Corporation. However, as shown in Figure 4-5, the procurement quantities of these materials are not completely affected by the prices. Even though the price of corn starch increased sharply in August, the purchase quantity did not decrease obviously. The variation trends of the purchase quantities of flour 1, 322 and 646 in the second half of the year were relatively similar: the quantities markedly increased in August and decreased in October. The purchase quantity of corn starch remained stable throughout the year. Therefore, it demonstrates that the purchase prices of flour 1 and 646, whose procurement costs account for more than 70% of the total procurement cost, remain relatively stable even though the prices of other raw materials of small proportion fluctuate greatly. In order to maintain stable production, the corporation will also purchase raw materials that are of high prices. In short, wheat flour is one of the most important materials that Group A purchases. Even if the price fluctuates little, the purchase quantity of the wheat flour fluctuates greatly. Therefore, it is necessary to analyse the influencing factor of wheat flour procurement in the following parts of this study.

Table 4-8 Procurement data of some of the bulk materials of factory C

Materials	Months	Jan	Feb	Mar	Apr	May	Jun
Flour #1	Quantity	278	202	198	142	181	203
	Unit Price	3250	3250	3244	3249	3247	3248
	Total Amounts	903663	656175	643691	461259	588587	659088
Flour # 322	Quantity	120	180	120	120	120	60
	Unit Price	3280	3360	3360	3302	3360	3360
	Total Amounts	392862	603708	402662	395677	402125	200394
Flour # 646	Quantity	442	460	524	365	96	105
	Unit Price	2930	2938	2948	2972	2931	2960
	Total Amounts	1295060	1351177	1543720	1086116	280642	310800
Starch	Quantity	59	46	60	38	29.1	47.9
	Unit Price	2940	2940	2940	2930	2851	2840
	Total Amounts	173460	135240	176400	111340	82964	136039

Source: Group A (2014)

Table 4-9 Procurement data of some of the bulk materials of factory C

Materials	Months	Jul	Aug	Sep	Oct	Nov	Dec	Total Amounts
Flour #1	Quantity	160	357	205	172	271	254	8,479,559 （31%）
	Unit Price	3245	3242	3252	3215	3184	3182	
	Total Amounts	519080	1157337	666730	552845	862833	808272	
Flour # 322	Quantity	120	238	120	120	120	129	5,224,488 （19%）
	Unit Price	3360	3372	3360	3360	3080	3461	
	Total Amounts	403119	802650	402330	402736	368659	447566	
Flour # 646	Quantity	103	488	406	285	403	385	11,995,330 （44%）
	Unit Price	2987	2943	2955	2975	2971	2965	
	Total Amounts	307136	1435264	1199390	847897	1196877	1141251	
Starch	Quantity	12	44	97.944	0	42	50	1,634,534 （6%）
	Unit Price	2840	3400	3400	--	3300	3276	
	Total Amounts	34081	149601	333012	0	138599	163799	

Source: Group A (2014)

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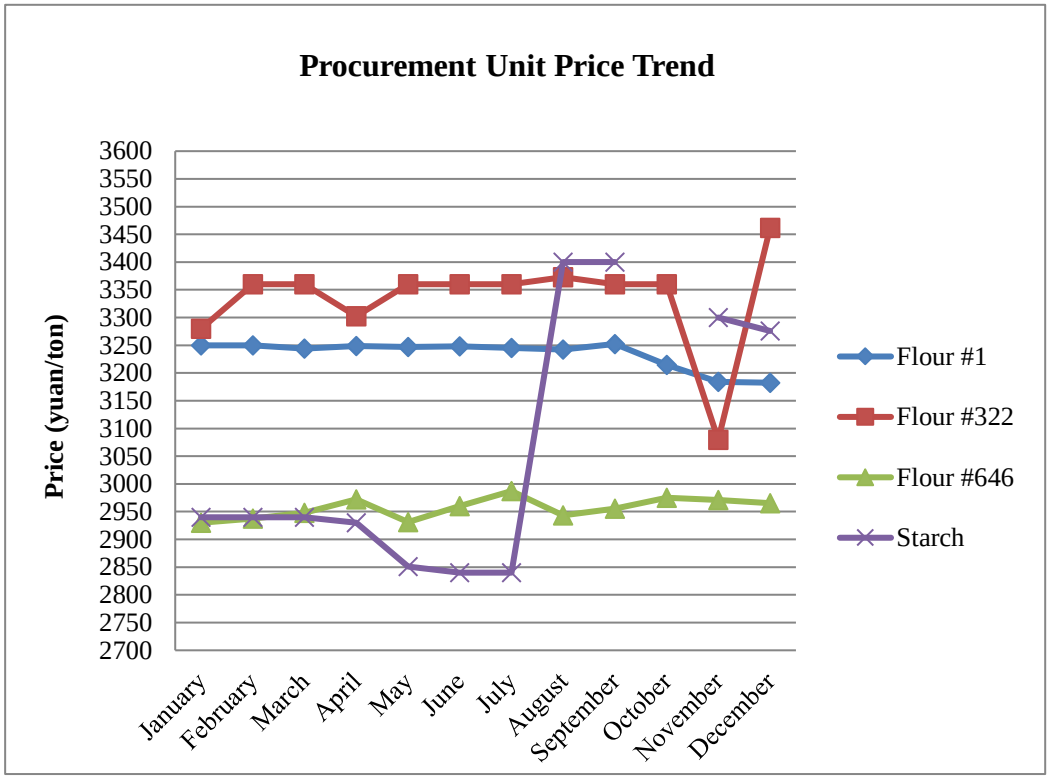

Figure 4-4 Variation trends of the unit prices of the bulk materials of factory C

Source: Group A (2014)

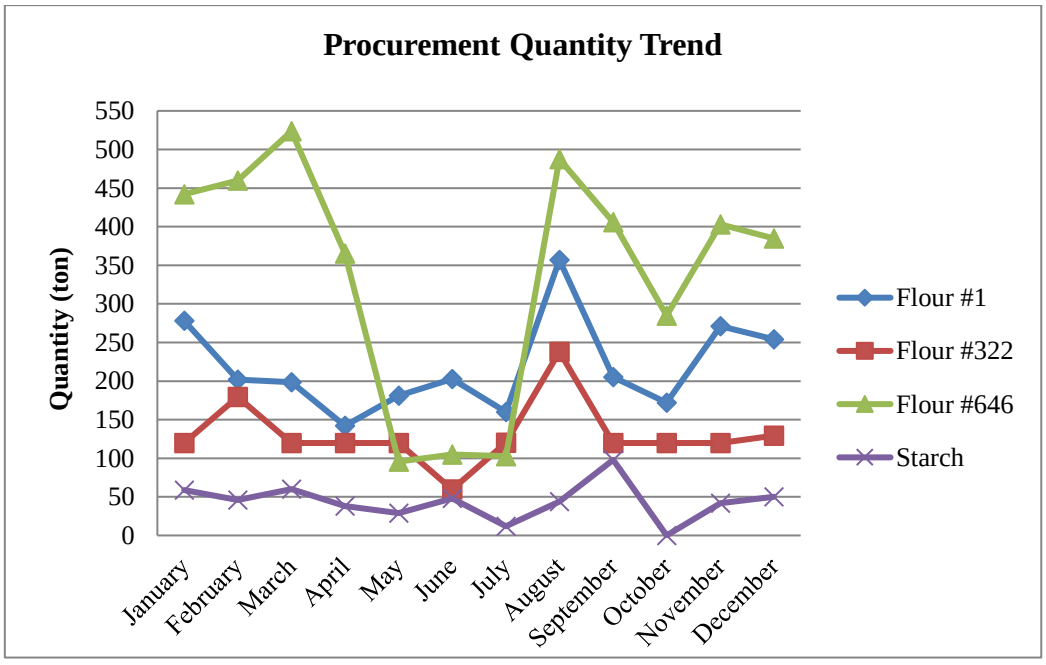

Figure 4-5 Variation trends of the purchase quantities of the bulk materials of factory C

Source: Group A (2014)

4.3.3 Group A's raw material procurement

Based on the aforementioned facts, it could be concluded that over half of Group A's total procurement costs comes from material cost that mainly contributed by wheat flour. Accordingly, in this chapter, we select wheat flour as our research object with the aim of exploring main factors that influence Group A's raw material purchase.

Since the flour suppliers for Group A are quite a lot and relatively geographically scattered, we only picked 15 flour suppliers at random and carried out a survey through 31 questionnaires (See Chapter 3 for details). Additionally, we randomly picked one department manager and one employee for an interview that consisted of 46 questions involving four types of information, respectively information about interviewees, purchase, production and sales. See attached sheet 1 for interview records and see Table 4-10 for questionnaire results.

First of all, according to Table 4-10, the flour suppliers for Group A mainly purchase wheat from major wheat growing areas of China, namely North China, Central China and Northwest China. Despite enjoying a lower price than domestic wheat, imported wheat still only accounts for a small part. The flour suppliers for Group A mainly purchase wheat made in China although domestic wheat is not competitive in international market, which indicates that domestic wheat enjoys cost advantages in terms of final acquisition and usage compared to imported wheat. The transportation costs for importing wheat is much higher than the difference between domestic and import wheat, as a result, the actual purchase cost for importing wheat exceeds domestic sourcing. It also suggests that cost for importing bulk material is considerably high. From the perspective of most food manufactures, cross-regional use of bulk material could bring about an excessive cost.

Moreover, the flour suppliers for Group A mainly purchase wheat from their regular suppliers (enjoying cooperation for more than 1 year). Meanwhile, the peak season for wheat purchases overlaps the wheat harvest season and wheat suppliers are equally divided between large ones and small ones. Therefore, the flour suppliers for Group A are more willing to build long-term cooperation with wheat suppliers and keen on establishing coordinated supply chain system with upstream suppliers, that is to say, they lay great emphasis on establishing a good rapport with external suppliers as well as on their flexibility and adjustment to market changes.

In addition, Group A's flour suppliers receive more than half of their flour orders from regular clients, suggesting that they are also willing to build a long-term relationship with

downstream flour buyers and maintain a coordinated downstream supply chain. Furthermore, according to Table 4-10, it could also be concluded that Group A's flour suppliers mainly meet domestic demand, with their export only representing quite a small proportion. Besides, the main means of domestic flour transportation is highway transport, which does not work for cross-regional flour procurement.

Table 4-10 Table for partial interview results of Group A's flour suppliers

Questions	Answers	Proportion of the answers	Questions	Answers	Proportion of the answers
Which areas of China does your company mainly purchase wheat from?	Central China, North China and Northwest China	0.55	What about the proportion of logistic cost in your company's total cost every year?	3%-5%	0.77
What about the proportion of the wheat imported in your company's total wheat purchase every year?	0%-5%、11%-50%	0.48/0.48	What about the first three months when your company enjoys the biggest flour sales volume (peak season)?	12/11/1	0.97
What about the price (Yuan per ton) of wheat imported by your company in recent years?	1000-1500	0.29	What about the first three months when your company enjoys the smallest flour sales volume (off season)?	2/4/5	0.9
What about the price (Yuan per ton) of the domestic wheat purchased by your company in recent years?	Over 2000	0.42	How long would your company sell out your flour inventory in peak season?	0-1 month	0.81
What about the proportion of the wheat purchased from regular suppliers (enjoying cooperation for more than one year)?	51%-70%	0.9	How long would your company sell out your flour inventory in off season?	0-1month	0.55
How often does your company purchase wheat?	Every 0-1month、every 7-12months	0.45/0.39	What are the first three sales areas that enjoy the largest flour sales volumes?	Central China, South China,	0.55

				Southwest China	
What are the first three months when your company purchases the largest amount of wheat?	8、7、6	0.97	What is your main means of transporting flour?	Highway	0.94
What are the first three months when your company purchases the smallest amount of wheat?	2、3、4	0.97	What about the longest distances for shipping flour?	Over 1000 kilometres	0.74
Please estimate the scales of your company's three biggest suppliers (wheat mills) on the basis of wheat purchase.	over 1 million ton (big), 0-500，000 ton (small)	0.35/0.35	What about the proportion of flour orders with shipping distances over 1,000 kilometres?	21%-50%	0.42
Among all suppliers for your company, what about the proportion of state–owned enterprises?	31%-70%	0.84	What about the proportion of flour orders with shipping distances less than 500 kilometres?	Over 50%	0.58
How old is your company?	Over 10 years old	0.9	What about the annual purchase volumes on average of your top three customers?	0-200,000 ton、over 1 million ton	0.35
What about the nature of your company?	Private	0.42	What about the proportion of the flour sales to regular clients (enjoying cooperation for more than one year)?	71%-100%	0.74
What about your annual flour output (scale)?	200,000-390,000 ton（middle）	0.87	What about the proportion of flour export in total sales every year?	0-10%	0.84

What are the top three areas where your company's plants are mainly distributed?	South China, North China, Central China	0.52	What about the proportion of flour sales to private companies in total sales?	31%-50%	0.45
What about the proportion of raw material (wheat) cost in total cost?	Over 80%	0.55	What about the proportion of flour sales to state-owned companies in total sales?	0-30%	0.58
What about the proportion of labour cost in total cost?	0-10%	0.9	What about your company's annual return rate?	0-5%	1

4.3.4 Problems concerning Group A's raw material procurement

4.3.4.1 Procurement department ignored, human resource structure is irrational

The procurement department has been in an awkward position for a long time, having a low status inside the company but enjoying a high position outside. On the one hand, inside the company, the purchase unit is required to source high quality raw materials with as less money as possible and it has to experience a series of examination in order to get approval for an adequate procurement fund. Furthermore, working in procurement department tends to be regarded as a plum job that would bring in high grey income. Consequently, procurement staff have been under a cloud in the company. In order to avoid taking responsibilities for price and quality, senior managers would carry out a series of examinations by asking the procurement department to submit a variety of materials and to have meetings for a myriad of issues, in this way, procurement turns inefficient due to the internal examination and approval. In addition, distrust of procurement employees overwhelms inside the company, causing a frequent replacement of purchasers and a high staff turnover. Therefore, in procurement unit, personnel arrangement is quite complex and staff mobility is rather high.

On the other hand, for suppliers, the procurement department is "king" since it dominates in supplier selection. Therefore, the suppliers usually seek to maintain a good relationship with procurement staff by bribing them in an ingratiating manner. As a result, the purchasers are caught in a dilemma or forced to accept this so-called "corruption". Consequently, external temptation and internal distrust contribute to the low status and high turnover of procurement staff.

Accordingly, in order to prevent these disadvantages, most companies generally divide procurement process into multiple segments and strengthen examination and verification in each step, aiming at enhancing control and avoiding arbitrary decisions. However, this kind of hierarchy is too excessive, causing redundancy in the procurement agency, inefficiency in procurement links as well as ambiguity in rights and liabilities. Furthermore, strict control over finance, bureaucracy, inefficiency and complex approval processes all bring about the highly fluctuated price of raw materials, finally resulting in invalid procurement behaviour.

4.3.4.2 Under-utilisation of e-procurement, inadequate information sharing and complicated procurement process

In view of informatisation, recently Group A mainly achieved paperless office, that is,

transmitting partial procurement information to staff's electronic equipment through computer and Internet. Nevertheless, most approval documents still adopt a paper version which consumes a large number of workforce to process. Therefore, Group A does not achieve e-procurement in the true sense. Moreover, its information sharing is inadequate and the procurement process is still complex.

For Group A, it is usually a lengthy process from proposing the procurement need until completing the procurement, since the procurement activity involves multiple departments that cooperate and interact with each other. However staff members in each department usually only care about their own part of the process, hardly having time for information sharing that would help other departments carry out work efficiently. This kind of "selfish" behaviour tends to cause that procurement might be turned down at certain stage or senior managers ask for resubmission of approval documents, as a result the company may miss the boat for purchase, or the procurement process may fall into disorder due to the too lengthy approval process. The whole procurement process is vulnerable to subjective human behaviour; thereby digitalisation and intellectualisation should be increased.

In Group A, every personnel involved in procurement owns a great deal of data concerning procurement. Nevertheless, most data are only stored and yet not fully utilised in the true sense by employees in concerned area, thus not contributing to intelligent e-procurement. Moreover, Group A does not establish a system that accumulates all sorts of information and allows easy access for purchasers. Informationised procurement system should be equipped with historical procurement information, allowing procurement personnel to compare the information of current and past procurement projects, including quotations, suppliers, quantities, feedbacks and other documents concerning procurement. On the one hand, it can help simplify procurement behaviour and process at later stages and fulfil the procurement business quickly and efficiently by borrowing ideas from the past. On the other hand, it also promotes the streamline of procurement sector and helps achieve a standardised and systematised procurement process.

4.3.4.3 Non-standard purchase specifications, unclear responsibilities for product quality

When procuring materials, Group A usually sources on the basis of the material standard provided by the production department that defines the exact specifications for materials. Although the production materials are selected in accordance with this standard, there has been a difference between the products' actual taste and what is expected and yet, the review department's evaluation criteria for the raw materials purchased is quite subjective. As a

result, a great deal of raw materials sourced is identified as unqualified even though their specifications are in line with the requirements defined by production departments. Consequently, the procurement department has to be responsible for the losses caused by such situations and are accused of inadequate effort. There are several reasons why materials sourced do not meet the requirements of the production sector. To begin with, Group A might not clarify the supplier evaluation indexes in the selection process and it might not specify the evaluation standard and key indicators, resulting in some unquantifiable evaluation indexes. Alternatively, purchase personnel might not have a clear recognition of the key supplier evaluation indicators, have no control over partial assessment indicators and neglect some indexes when choosing suppliers. Accordingly, it is unclear that the procurement department, the materials review department or the production department should take responsibility for the unsatisfactory materials sourced.

Furthermore，Group A produces fast moving customer goods of food that generates low profits, hence it achieves cost cutting mainly through sourcing raw materials at lower prices. Moreover, influenced by the inferior quality of domestic raw materials, suppliers usually quote a quite low price so as to win the bidding. Subsequently, the suppliers would achieve supply cost reduction through diminishing follow-up services or lowering product quality or other means. Besides, having a preference for their favourable purchase price, Group A is often less strict in quality review and turns a blind eye to the suppliers' cheating in quality. It leaves such issues out of consideration, merely in pursuit of low prices. As a result, materials sourced are unqualified, however, of which the purchase department is accused.

4.3.4.4 Lack of professional training, procurement personnel conduct work in a non-standard manner

As mentioned above, the procurement department has been in an awkward position. Its high turnover rate results in low professional quality and non-standard professional conduct. Purchase staff are replaced frequently hence employees who stay in their job on a long-time basis are few and far between and so do the experienced workers who have been engaged in procurement for a long time. In addition, although newly recruited employees are equipped with procurement experience, they have not yet been dealing with the same work on a long-term basis, thus requiring a longer time to perform their role. Nevertheless, after accommodating to their workplace, these new employees would then fall in the dilemma faced by the old workers as stated above. From the perspective of a group, if things go on like

this, it is a kind of "waste". Furthermore, it is usually the case that in procurement department new employees are usually instructed by old staff through traditional means of delivering their working experience instead of by professional training. In addition, Group A does not establish informationised procurement system; as a result, such senior staff fail to share information.

Due to the lack of formal and targeted training, procurement personnel have insufficient systematic knowledge about the group's procurement, as well as inadequate understanding of regular suppliers, thus failing to maintain them effectively and seasonably. Accordingly, the group does not have enough time for its supplier selection, thus only picking randomly among suppliers that it enjoys cooperation with on a regular basis. In this way, the selection process for suppliers gets simplified. Ultimately, Group A has a decreasing number of alternative raw materials suppliers as well as continuously losing negotiating power.

4.4 SWOT analysis of Group A's raw material procurement against the BRI

In 1979, China began to implement reform and opening-up policy and the National People's Congress passed the Law of the PRC on Sino-Foreign Equity Joint Ventures, since then, foreign-funded enterprises have gradually entered Chinese market. In 1992, Deng Xiaoping clarified in his speeches during the inspection tour in the South that bravely utilising foreign funds was the essential policy for develop economy and achieving opening-up, which set off a national craze of attracting foreign capital. Since 1993, China has been at a leading position among developing countries in absorbing and utilising foreign capital. Currently, the top 500 multinational corporations have all invested in China, mainly in the manufacturing industry. What they prefer in China are cheap labour costs, abundant natural resources, vast consumption market and favourable policies.

On the one hand, advancing with the times, China's economy has steadily stepped into "New Normal". The economic growth has changed from high speed to medium-high speed, the economic structure has been optimised and upgraded with the third industry dominant in economy and economy development has steadily turned from factor-driven and investment-driven to innovation-driven. Therefore, some foreign-funded enterprises focusing on manufacturing industry cannot adapt to the new changes taking place in China; satisfy the market needs or providing customised services. In particular, those labour-intensive low-end

primary processing enterprises cannot keep pace with changes in international division of labour and integration of factors, finally moving out of China. On the other hand, with the increase in price of bulk commodities and factors as well as the economic growth, social progress and higher living standard, Chinese people began to ask for higher salaries, China's demographical dividend began diminishing and the labour cost increased year by year. Therefore, the rising of labour cost and production factors' price caused great influence on the foreign-funded enterprises' production and development in China. Nevertheless, the implementation of the BRI provided new opportunities for the development of various industries in various countries alongside the route.

4.4.1 Strengthens

Compared with domestic-funded enterprises, foreign-funded enterprises have multiple advantages in the new environment. To begin with, the home-country parent enterprise of foreign-invested companies could provide with substantial funds and technical support that help them explore new development patterns and seek for potential opportunities. Secondly, equipped with successful experiences of production and operation in new areas, new cultures and new policies, foreign-funded companies are more likely than domestic companies of China and other countries along the BRI to conduct cross-regional operation under the new circumstances of the BRI. In other words, in comparison with domestic-invested companies, foreign-invested corporates can better achieve "localisation" in new regions and enjoy more open and inclusive corporate cultures as well. Thirdly, countries along the BRI route are majorly developing countries, economic development of which is relatively backward. Consequently, when entering these markets, foreign-funded enterprises, superior in such aspects as funds, technology and experience, might encounter relatively less competition from local enterprises. Therefore, Group A, as one of the foreign-funded enterprises, has the above-stated advantages as well. Under the new circumstances of the BRI, it would help Group A enlarge its source of raw materials, obtain more diversified raw materials, expand its business scale and scope and reduce the impact on production caused by fluctuation in raw material price in some areas.

4.4.2 Weaknesses

In spite of such strengths of foreign-funded enterprises such as Group A compared with domestic-funded ones, they have some weaknesses as well in the new environment of the

BRI. In the first place, due to the large scale of Group A, every decision would exercise significant influence over the company's production and operation. As a result, it would be quite cautious and conservative or even complicated and inflexible in decision making, thus missing some development opportunities. Moreover, the procurement process involves multiple departments conducting management separately, which greatly influences the efficiency in purchase decision making process. In addition, Group A has been producing and marketing in China, hence not quite familiar with other countries and regions along the BRI. The current procurement pattern and marketing mode do not work there and it is difficult to adjust its production layout and structure.

4.4.3 Opportunities

To begin with, it is emphasised in the BRI that priority is given to the development of infrastructure and its related industries. Multi-directional and convenient transportation facilities provide Group A more low-cost options for cross-regional procurement and transportation of raw materials. In addition, such regional cooperation platforms as free trade zone and free trade ports are established, in favour of removing trade barriers, expanding market access and cutting down flour procurement cost of Group A. Moreover, countries along the route are majorly developing countries with rich and cheap labour force, quite advanced agricultural industry and favourable price of production factors, benefiting Group A in production cost saving. Finally, the BRI initiated and promoted by China advocates the concept of international cooperation for mutual development, involving a significantly large proportion of global population and economy and concerning a wide range of countries and regions, thus it is bound to last for quite a long time. As a result, it could safeguard Group A's long-term "going out" strategy.

4.4.4 Threats

To start with, the implement of the BRI does create opportunities of "going out" for enterprises of China and other countries, nevertheless, such opportunities might vary in size for companies in different fields. Transportation development and transportation infrastructure construction enjoy the top priority, followed by industrial chain of infrastructure, industries related to energy construction, trade and cultural tourism industry and information products and services industry. By contrast, the food manufacturing industry concerning Group A does not obtain such priority, or acquire adequate benefits from the favourable policies of "going

out" strategy and credit financing, consequently, its development opportunities are not satisfactory. Meanwhile, in the early stage of the BRI, the Free Trade Zone (Ports) and regional cooperation platform were not yet complete or perfect and there were multiple systematic and institutional barriers in fields currently opened.

Moreover, the BRI provides equal opportunities and resources for a majority of enterprises and industries, consequently, Group A's rivals must take such opportunities as well, thus enhancing industrial competition. In addition, as manufacturing industry grows rapidly in other countries along the route, commodity market is partially occupied and raw material price rises, putting extra pressures on Group A.

Lastly, the BRI involves quite a number of countries and regions with considerably different social ideologies and various traditional concepts and some even have strong anti-foreign sentiment and show prejudice and discrimination against foreign-funded enterprises. Meanwhile, justice, normative policy and legal environment and equal market access are not available in some areas.

Therefore, it is estimated that if Group A would like to achieve overseas raw material procurement at the early stage of the BRI, the cost and risk would both be relatively high.

4.5 Group A's international sourcing of raw materials based on AHP

Group A's international procurement could be analysed in the method of AHP in accordance with the following steps.

(1) Analyse decision object and determine key decision factors according to business features

This study mainly studies the procurement model options for foreign-funded enterprise of Group A against the background of the BRI. The ultimate goal of the group is to determine the optimal raw material procurement method. From the perspective of Group A, the BRI brings in international sourcing. Therefore, after theoretical analysis in Chapter 2 in addition to the analysis of interview results and questionnaire survey results in Chapter 3, decision factors could be determined through analysis of the factors that affect domestic and international sourcing of Group A. These decision factors mainly concern 7 aspects, respectively supplier management, procurement price, product quality, transportation, timeliness of delivery, inventory management and procurement risks.

(2) Establish the hierarchical structure based on the relations of decision factors

Generally, the hierarchical structure consists of three layers, namely target layer, criterion layer and scheme layer. Target layer, involving only one factor, defines the projected goal or ideal result. Criterion layer, including main and secondary criteria, specifies the criteria that affect the target. Scheme layer presents the specific resolutions and proposals for realising the target.

The essence of developing the hierarchical structure lies in identifying each key decision factor and clarifying the hierarchical relation. In order to simplify the calculation process, judgment matrix should be as simple in hierarchy as possible without affecting the accuracy of decision, thus eliminating unnecessary calculation. Therefore, in terms of the hierarchical structure of Group A's decision on procurement model, this study only studies such three layers of target layer, criterion layer and scheme layer. See Figure 4-6 for details.

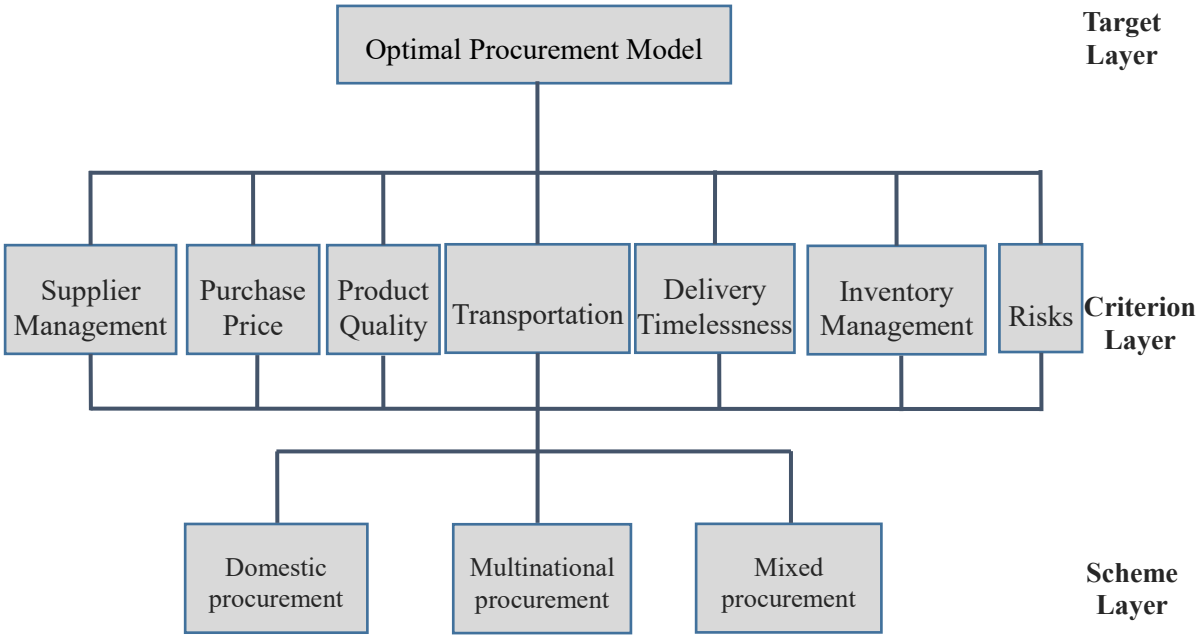

Figure 4-6 The hierarchical structure of Group A's decision on procurement model

Currently, there are three options for Group A's procurement, respectively domestic procurement, multinational procurement and mixed procurement combining domestic and multinational sourcing, which present various advantages and disadvantages in terms of different aspects concerning procurement decision. According to the interview results and questionnaire survey results, Group A's main concerns can be boiled down to the following aspects: 1) In terms of developing and maintaining suppliers that certainly involves a great deal of human, material and financial resources, global sourcing is much higher in cost and

harder in implement. 2) In view of stability of purchase price as well as mode of payment that both exercise great influence on purchase decision, price of international flour is generally lower than that of domestic flour. 3) In terms of product quality that refers to product qualification rate as well as customer satisfaction, global market, compared with domestic market, has a full range of flour thus providing more alternatives to meet various customer needs. 4) In the case of transportation, international procurement could involve much higher logistics costs that sometimes even exceeding material costs in comparison with domestic sourcing, since global procurement concerns various countries and complicated transport modes, transit routes and transportation time management. 5) With respect to time, in addition to the long transportation period compared with domestic sourcing, it would take a long time for customs formalities and check since multinational procurement at least involves two countries. 6) From the inventory prospective, global sourcing would cause extra stock-holding cost. The global sourcing amount per time mostly outnumber that of domestic procurement on account of the complex process of international procurement, consequently purchased products in excess of production need should be stored in warehouse for subsequent use and to prevent out of stock, which brings about additional inventory costs. 7) On account of the long period of global procurement, highly professional organisational process, multiple transport links, complicated procurement process as well as remote distance, it is quite difficult for the coordination and negotiation between buyers and sellers. In conclusion, the instability and uncertainty are considerably marked in international procurement in contrast to domestic sourcing. Procurement companies shall take all potential risks into consideration such as political and legal risk, information risk, price risk, transportation risk and other risks. Therefore, Group A's procurement mode is determined mainly in accordance with the above-stated seven principles.

(3) Design judgment matrix, ask experts for ranking and collect the scores

Therefore, in the light of ranking of experts and associated personnel of Group A, the judgment matrix data and weight coefficient after treatment could be obtained. See the following tables from Table 4-11 to Table 4-18 for details.

Table 4-11 Weight matrices A

Procurement modes	Supplier management	Purchase price	Product quality	Transportation	Delivery timelessness	Inventory management	Risks	Weight coefficient
Supplier management	1	1/9	1/8	1/7	1/5	1/2	1/3	0.027
Purchase price	9	1	3/2	5/3	8/3	7	4	0.305
Product quality	8	2/3	1	7/6	2	13/4	8/3	0.213
Transportation	7	3/5	6/7	1	1	3	2	0.176
Delivery timelessness	5	3/8	1/2	1	1	14/5	7/4	0.141
Inventory management	2	1/7	4/13	1/3	5/14	1	2/3	0.055
Risks	3	1/4	3/8	1/2	4/7	3/2	1	0.082

Table 4-12 Weight matrices B1 of supplier management

Supplier management	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	3	2	0.545
Multinational procurement	1/3	1	2/3	0.182
Mixed procurement	1/2	3/2	1	0.273

Table 4-13 Weight matrices B2 of purchase price

Purchase price	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	1/5	1/3	0.109
Multinational procurement	5	1	2	0.570
Mixed procurement	3	1/2	1	0.321

Table 4-14 Weight matrices B3 of product quality

Product quality	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	1/3	1/2	0.167
Multinational procurement	3	1	3/2	0.500
Mixed procurement	2	2/3	1	0.333

Table 4-15 Weight matrices B4 of transportation

Transportation	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	7/2	7/4	0.538
Multinational procurement	2/7	1	1/2	0.154
Mixed procurement	4/7	2	1	0.308

Table 4-16 Weight matrices B5 of delivery timelessness

Delivery timelessness	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	3/8	4	0.264
Multinational procurement	8/3	1	10	0.670
Mixed procurement	1/4	1/10	1	0.066

Table 4-17 Weight matrices B6 of inventory management

Inventory management	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	1/4	3/5	0.160
Multinational procurement	4	1	6/5	0.537
Mixed procurement	5/3	5/6	1	0.303

Table 4-18 Weight matrices B7 of risks

Risks	Domestic procurement	Multinational procurement	Mixed procurement	Weight coefficient
Domestic procurement	1	7/5	6/5	0.393
Multinational procurement	5/7	1	8/9	0.284
Mixed procurement	5/6	9/8	1	0.323

Accordingly, A12=1/9, indicating that “supplier management” is extremely less important than “purchase price”; A21=9, suggesting that “purchase price” is extremely more important than “supplier management”; A41=7, showing that “transportation” is significantly more important than “supplier management”. The formula for weight coefficient as follow formula (4.1).

$$AW_i = \frac{\sum_{i=1}^{7} A_{ij}}{\sum_{i=1}^{7}\sum_{j=1}^{7} A_{ij}} \tag{4.1}$$

(4) Compute the weight in hierarchical single arrangement on the basis of experts' ranking and carry out consistency check to results

Due to the large number of pairwise comparison, it is hard to achieve 100% consistency. If the degree of consistency fails to meet the requirements, the company shall recheck and amend the pairwise comparison until qualified and then continue to conduct synthetic calculation. To sum up, judgment matrixes are required in practice to generally satisfy the consistency and to undergo consistency check. Only the judgment matrixes that pass the consistency check are verified as logistically reasonable. Only in this condition, can we continue to carry out analysis on results.

1) Multiply the value in each column of pairwise comparison matrix and its corresponding coefficient and perform a summation and we can get a vector "weighted value".

$$0.027\times\begin{pmatrix}1\\9\\8\\7\\5\\2\\3\end{pmatrix}+0.305\times\begin{pmatrix}1/9\\1\\2/3\\3/5\\3/8\\1/7\\1/4\end{pmatrix}+0.213\times\begin{pmatrix}1/8\\3/2\\1\\6/7\\1/2\\4/13\\3/8\end{pmatrix}+0.176\times\begin{pmatrix}1/7\\5/3\\7/6\\1\\1\\1/3\\1/2\end{pmatrix}+0.141\times\begin{pmatrix}1/5\\8/3\\2\\1\\1\\5/14\\4/7\end{pmatrix}+0.055\times\begin{pmatrix}1/2\\7\\13/4\\3\\14/5\\1\\3/2\end{pmatrix}+0.082\times\begin{pmatrix}1/3\\4\\8/3\\2\\7/4\\2/3\\1\end{pmatrix}=\begin{pmatrix}0.196\\2.253\\1.521\\1.203\\0.972\\0.383\\0.571\end{pmatrix}$$

2) Divide the weight vector obtained in the first step by the priority of each standard and we can get:

$$\begin{cases}\text{Supplier management} & 0.196\div0.027=7.144\\ \text{Purchasing price} & 2.253\div0.305=7.379\\ \text{Product quality} & 1.521\div0.213=7.127\\ \text{Transportation} & 1.203\div0.176=6.842\\ \text{Delivery timelessness} & 0.972\div0.141=6.876\\ \text{Inventory management} & 0.383\div0.055=6.993\\ \text{Risks} & 0.571\div0.082=6.977\end{cases}$$

3) Calculate the mean of values obtained in the second step and represent it by $\lambda_{\max}$,

Accordingly, $\lambda_{\max} = \frac{7.144 + 7.379 + 7.127 + 6.842 + 6.876 + 6.993 + 6.977}{7} = 7.048$.

4) Calculate consistency index (C.I.), see the following formula (4.2).

$$\boldsymbol{C.I.} = \frac{\boldsymbol{\lambda_{max} - n}}{\boldsymbol{n-1}} \tag{4.2}$$

So $C.I. = \frac{7.048 - 7}{7 - 1} = 0.008$, where n denotes the number of comparison pairs.

5) Determine the corresponding average random index (R.I.) through table look-up. The value of R.I. depends on the order. In accordance with Table 4-19, we can get the average $R.I. = 1.36$.

Table 4-19 Average R.I.

Matrix order	1	2	3	4	5	6	7	8	9	10
R.I.	0	0	0.58	0.89	1.12	1.26	1.36	1.41	1.46	1.49

6) Calculate consistency ratio (C.R.) and make judgment. If $C.R. < 0.1$, the judgment matrix is verified as acceptable in consistency; if $C.R. > 0.1$, the judgment matrix is verified as not up to standard and is required for modification. Consistency ratio (C.R.) calculate formula as follow (4.3).

$$\boldsymbol{C.R.} = \frac{\boldsymbol{C.I.}}{\boldsymbol{R.I.}} \tag{4.3}$$

According to the above equation, Group A's C.R. is $C.R. = \frac{0.008}{1.36} = 0.006 < 1$, that is, judgment matrix A is verified as up to standard in terms of consistency.

(5) Compute the ranking weights in hierarchy and carry out consistency check to the results

Based on the pairwise comparison matrixes of B1, B2, B3, B4, B5, B6 and B7, we can get the total ranking weight in hierarchy and conduct consistency check. See Table 4-20 for results. All $C.R._k$ of matrixes of B1, B2, B3, B4, B5, B6 and B7 are less than 0.1, thus passing the consistency test.

Table 4-20 The total ranking weight in hierarchy

k	1	2	3	4	5	6	7
ω_{k1}	0.545	0.109	0.167	0.538	0.264	0.16	0.393
ω_{k2}	0.182	0.57	0.5	0.154	0.67	0.537	0.284
ω_{k3}	0.273	0.321	0.333	0.308	0.066	0.303	0.323
λ_k	3	3.005	3	3	3.001	3.067	3
C.I.$_k$	0	0.0025	0	0	0.0005	0.0335	0
R.I.$_k$	0.58	0.58	0.58	0.58	0.58	0.58	0.58
C.R.$_k$	0	0.004	0	0	0.001	0.058	0

(6) Analyse the ranking results and get the optimal procurement mode

After analysing the relation between indexes of domestic procurement and synthetical goal, the weight is:

$$W_1=0.545\times0.027+0.109\times0.305+0.167\times0.213+0.538\times0.176+0.264\times0.141+0.16\times0.055+0.393\times0.082=0.256$$

After analysing the relation between indexes of multinational procurement and synthetical goal, the weight is:

$$W_2=0.182\times0.027+0.57\times0.305+0.5\times0.213+0.154\times0.176+0.67\times0.141+0.537\times0.055+0.284\times0.082=0.460$$

After analysing the relation between indexes of mixed procurement and synthetical goal, the weight is:

$$W_3=0.273\times0.027+0.321\times0.305+0.333\times0.213+0.308\times0.176+0.066\times0.141+0.303\times0.055+0.323\times0.082=0.283$$

In conclusion, weight vectors of scheme layer to target layer are $\{0.256, 0.460, 0.283\}$. Therefore, with respect to the scheme layer, weight order is $W_2 > W_3 > W_1$, which indicating that multinational procurement excels mixed procurement that outperforms domestic sourcing. To sum up, from the perspective of Group A, the optimal procurement mode is multinational procurement.

4.6 Summary

In this chapter, the background and contents of the BRI has been briefly introduced, followed by a detailed analysis of the status quo of Group A's raw material sourcing cost management. Afterwards, SWOT analysis is carried out of Group A's raw material procurement against the new background of the BRI. Finally, adopting the method of AHP and on the basis of judgment matrix and experts ranking, we use the actual data for verifying the whole decision process. In this way, we proposed the alternative methods of selecting optimal procurement mode, providing some reference for Group A's decision on raw material procurement mode.

Chapter 5: Conclusion

So under fierce competition of an international market, it is critically important for enterprises to improve internal procurement management skills which is an indispensable link of management skills for long-standing of enterprises. Modern enterprise management theory holds that improving production process and reducing raw materials costs is the source of enterprises' "first profit" and it believes that the "second profit" source of the enterprises is increasing sales and sales profit rate. Also, it believes that the "third profit" source of the enterprises is improving procurement management skills and reducing procurement costs. Procurement cost is a majority part of the whole costs for enterprises and the essence of reducing procurement cost is improving the competence of goods in global market and increasing profits. Thus, innovative measures enterprises had taken for reducing procurement are necessary for pursing competition advantages.

On the one hand, proper raw material procurement strategy can reduce costs and increase profits. On the other hand, it can also enhance market competitiveness and maintain the continuous operation of enterprises. Under the new environment of the BRI, the innovation of procurement strategy of multinational corporations in China is the key to obtain the "localisation" core competitiveness, which is also the key to business success. So, this study studies the raw material procurement strategy of Group A under the new environment of BRI, which will give some references to other multinational corporations in China.

5.1 Raw material procurement strategy adjustment of Group A

There is a big difference in procurement strategy and procurement process between food industry and other industries. As a raw material-intensive and resource-intensive industry, the food industry is characterised by large quantities of its raw materials, diversified varieties, multiple sources of sources, high timeliness of supply and seasonal fluctuations in prices. International trade makes more detailed division of labour in the industry. The production of differentiated goods is a way for enterprises to remain competitiveness and the diversified supply of raw materials is the cornerstone for enterprises to maintain differentiated product production. Single domestic procurement models cannot meet consumer needs for commodity

diversity preferences. Therefore, Group A should proceed from the current development of the market, make full use of modern information technology, realise information sharing and information integration, continuously expand its cross-border procurement business and optimise the procurement process of raw materials. Transnational procurement strategies and models mainly depend on the computer network to achieve information interaction. Enterprises must integrate all this information of procurement target countries and suppliers, customs departments, transportation companies, internal company needs and other aspects together, which will improve the relevance, transparency and resilience of the procurement process. The specific raw materials procurement management model of Group A is shown in Figure 5-1.

In the below mode, procurement information management system will summarise, analyse and process the Group's external information and internal information. First of all, the procurement information management system will collect external information to the procurement department (including the group procurement target country information, supplier information, material information and policy information of both countries). Then, the procurement information management system will collect the internal information to the procurement department (including the group sales information, plan production information, inventory information and after-sales information feedback). Finally, procurement department makes the procurement plan based on internal information and external information. The procurement plan will be given to the finance department, storage department, production department and the sales department and these departments need to give a reply and confirmation, then the system eventually generates orders. After that, the procurement can continue along the procurement process.

When the procurement is completed, the system will summarise the relevant information in this procurement process. At the same time, the data of this procurement will be transferred to the procurement performance evaluation database to obtain the efficiency and achievement evaluation of the procurement. After that, this information will be fed back to the procurement information management system as the basis for future procurement improvement. Finally, we will continue to improve and enhance Group A's multinational procurement strategy and management.

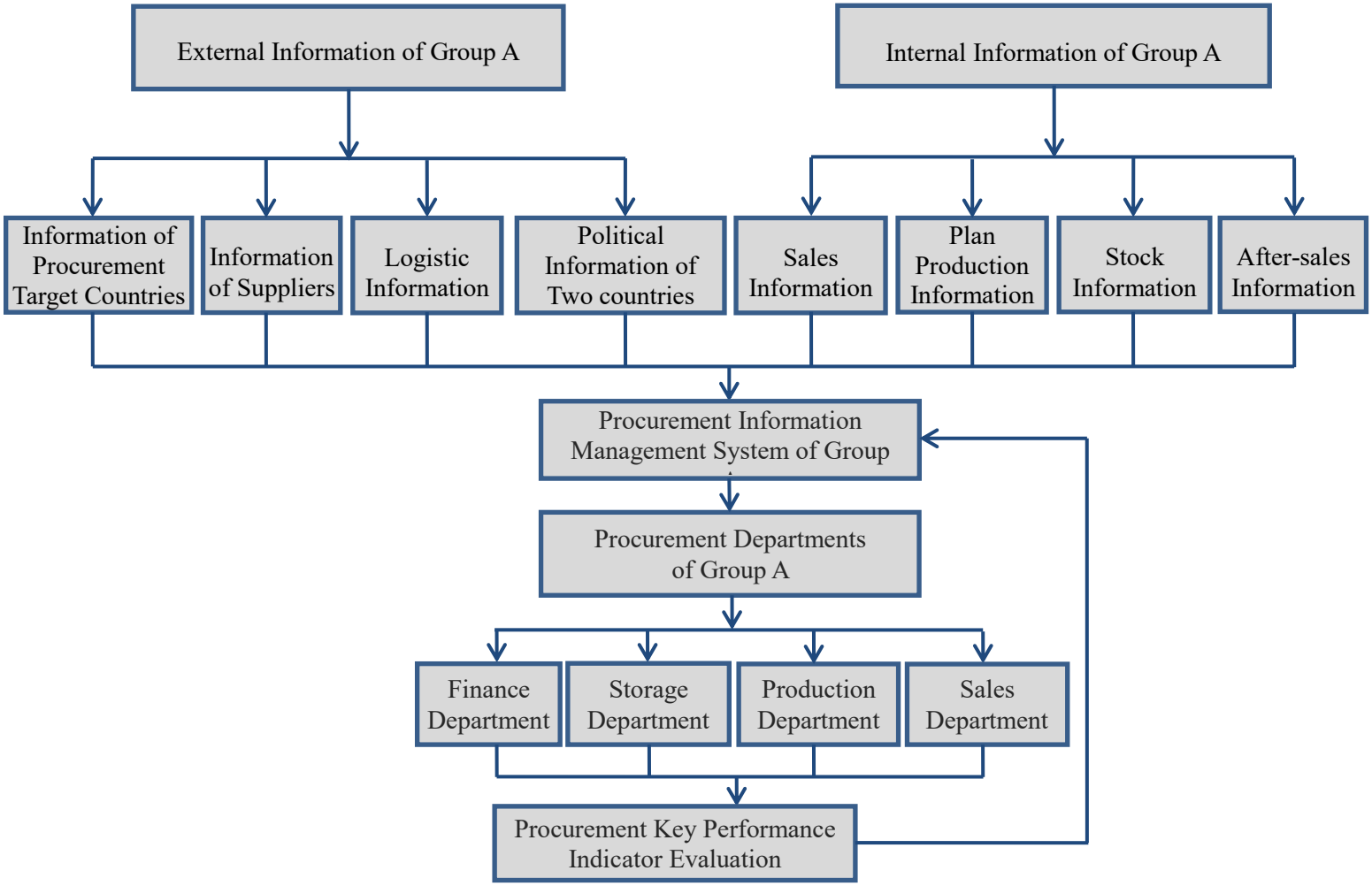

Figure 5-1 The specific raw materials procurement management model of Group A

5.2 Measures of enhancing raw materials procurement for Group A

5.2.1 Human resources structure

Pay much attention to procurement department and set up a reasonable human resources structure.

Production factors are the basis for the survival and development of manufacturing enterprises. The procurement of raw materials is the stabiliser for the accelerated development of enterprises. Only with the advanced procurement management and procurement strategies, can enterprises have a strong resourcing capability. Group A's executives should pay attention to the management of the procurement department, increase the trust of the procurement department staff and fulfil the statement of "A man being used cannot be suspected while a suspected man cannot be used".

In the procurement department, there must be a simplification of personnel structure, which can guarantee reasonable staff structure and clear management hierarchy. First of all, reduce the mobility of personnel in the procurement department, set reasonable performance targets, improve the status of procurement staff, prevent the shortage of qualified personnel and maintain the staff stability within the procurement department. What's more, pay much more attention to audit hierarchy of procurement process in order to avoid dictatorship of procurement department leaders. In addition, strengthen the communication and assistance among various departments, coordinate the relationship between departments and procurement department thus ensuring the streamlining and efficiency of procurement links. At the same time, establish and improve a sound system of personnel evaluation system to achieve mechanism for the survival of the fittest.

5.2.2 Procurement process and procurement information system

Optimise the procurement process, share purchase information and improve the procurement information system.

Transnational procurement should make full use of computers, networks and other modern electronic equipment and information technology for a paperless office. First of all, establish a sound procurement information system for sharing procurement information and simplifying and standardising procurement processes. Then, integrate internal procurement information and all departments must take the initiative to share the department's

procurement information on the link, cooperate with each other to reduce the impact of subjective behaviour on the entire procurement process, making every aspect of the decision making more digital and intelligent. At the same time, maintaining the integrity of the historical procurement information for comparing existing and historical procurement information. Continuing on, based on historical procurement information, the procurement can update and improve procurement practices and processes continuously. In subsequent procurements, there will be a template for more convenient, rapid and efficient procurement project thus streamlining the procurement process and the standardisation and institutionalisation in order to achieve the integrated management of procurement activities.

5.2.3 Procurement standards, rights and responsibilities

Strictly regulate the procurement standards and have a clear division of rights and responsibilities.

It is very difficult for multinational procurement to return of goods due to the more complicated process, longer transport distance and more detailed customs process than domestic procurement. Therefore, establishing normative standards and parameters indicators of material procurement, giving objective assessment of raw materials and maintaining the same request and specifications according to procurement department is essential for the transnational procurement. Clear and definite suppliers' selection and evaluation criteria, quantify key indicator, reduce the randomness of the establishment of evaluation indicators. Sort out procurement process systematically, draw up a sound standards and norms on all aspects and give constraints and guidance of the project participants involved.

In the whole process of the project, every aspect is very important. It is essential to make a clear division of rights and responsibilities in every aspect. Therefore, establishing an effective regulatory system can not only ensure the validity of procurement activities, but also ensure that the rights and responsibilities are clear and the irregularities can be tracked.

5.2.4 Training and behaviour

Strengthen the professional training of procurement staff and regulate the procurement staff behaviour.

The competitiveness of enterprises not only derives from the high quality products, but also derives from the high quality of staff. The procurement of personnel training, on the one hand, can explore the potential of procurement staff and increase personnel reserves, on the

other hand, can enhance professional skills of procurement professionals, which ensures the successful and efficient procurement activities. Multinational procurement is not exactly the same with domestic procurement, which requires procurement staff with learning ability and skills of language, social culture, law.

For procurement department staff, it is not only crucial to have professional procurement skills, but also to have excellent moral character. Standardising the behaviour of purchasing staff, on the one hand, can increase the vigilance of employees and avoid the temptation of procurement black holes and on the other hand, it can maintain the image of enterprises and countries and ensure the quality of products.

5.2.5 Sources and procurement information

Expand the sources of external procurement information and collection of multinational procurement information.

The process and management methods of multinational procurement differ a lot from that of domestic procurement. First of all, multinational procurement activities include almost all the formalities and procedures in domestic procurement, such as sourcing, supplier auditing, sample verification, inquiry, bargain, business negotiation, order management, tracking delivery, quality complaints and other basic aspects. What's more multinational procurement also involves the import and export permit applications, insurance, charter booking, customs clearance of goods. In addition, multinational procurement also needs to take into account the risk of foreign exchange and prices, as well as the complicated trade procedures with more restrictions.

Therefore, multi-directional and multi-channel collection of relevant procurement information can be conducive to timely understand and update the tendency in the international market, which is the premise and foundation to carry out multinational procurement. Information mentioned below includes suppliers' information, the country's import and export policies (in particular the procurement target country's political, social, economic, cultural and customs conditions), the trade policy and preferential policies between the two countries, modes of transportation, customs conditions and other aspects of information.

5.2.6 Risk aversion mechanism

Establish a risk aversion mechanism for multinational procurement to reduce the risk in

the procurement process.

Although the prices of raw materials in the international market tend to be lower than the prices in the domestic market, the cost and difficulty of multinational procurement in all aspects are much higher than those in domestic procurement. Firstly, the development and maintenance of suppliers need to spend more manpower, material and financial resources. Secondly, the procurement price and payment methods fluctuate a lot in multinational procurement process. Thirdly, multinational procurement involves different countries and the selection and planning of transport modes, transportation routes and transportation time are more complicated than those of domestic procurement. Fourthly, the logistics cost of multinational procurement is much higher than domestic procurement. Finally, the customs formalities and inspections of multinational procurement need a long period which is the same with the multinational transportation.

Multinational procurement is characterised with a long cycle, professionalism in the organisation process, many transportation links, complicated process and the long distance between the two places. Once a small problem occurs, it is more difficult for the two parties to coordinate the procurement issues. The uncertainty of multinational procurement is much higher than the domestic procurement. So enterprises must take political and legal risks, information risk, price risk, transportation risk and other risks into account. Therefore, establishing a reasonable multinational procurement risk aversion mechanism to reduce the risk must be considered for Group A.

5.3 Summary

This chapter firstly adjusts multinational procurement management strategy of raw materials for Group A. Then, we construct the specific model for its multinational procurement management. Finally, it puts forward some specific measures of the problems existing in the procurement process and management for Group A.

5.4 Research prospect

The BRI initiated, promoted by China and supported by the Chinese government is a concept and also a China’s national strategy. The BRI agrees well with the common needs of countries along the routes and opens up new window of opportunities for them to obtain

complementary advantages from each other and to pursue open development and it is also a new platform for international cooperation that is promoted under the framework of equal cultural identity.

Under the new environment of the BRI, cooperation and development of countries along the routes has been an important issue, which is also the popular study field for researchers. Based on the case study of Group A, this study focuses on the research of procurement management of raw materials, which has important theoretical and practical significance for manufacturing foreign-funded enterprises in China and all foreign-funded enterprises in China. However, since the issue of the BRI is still in its infancy and cooperation in more fields is not yet mature, there are still plenty of topics and broad space for research in this field. In addition, the author's ability for data collection is limited and there inevitably exists many deficiencies. The author believes that follow-up research can be further explored in the following areas:

(1) A comparative study of procurement modes alongside the BRI coastal countries;

(2) A case study on the multinational procurement model between developed and developing countries under the BRI;

(3) The choice of multinational procurement model for regional cooperation.

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Appendix 1: Interview outline

Notes:

According to the procurement management theories, Uppsala Model (U-M) theories and the SWOT (Strength, Weakness, Opportunities and Threats) analysis, we designed the objects and questions of this interview. In this interview, we focus on the internal and external environment from the macro and micro level, in particular, we concentrated on the new surroundings that BRI to bring to the case company. In this way, we will analyse the procurement strategy adjustment under the BRI.

This interview includes three parts: internal interview of case company, interview of government departments and interview of upstream suppliers.

A. Interview Outline of Group A

Interview Purpose:

Understand the current status and future trend of international raw materials procurement for Group A.

Object to be interviewed:

Group A

Researchers:

Leaders of purchasing and financial departments and the persons involved in multinational procurement.

Theoretical Basis of the Interview:

This interview is mainly based on the U-M and SWOT analysis and the questions are about procurement management and internationalisation of enterprises under BRI.

Questions to be interviewed:

1. The procurement management
    1) What kind of role does the raw material procurement mean for business operation?
    2) Whether there are many problems in the procurement process? And whether there are frequent procurement activities?

3) Does the company have a strict procurement cost control process? Is the implementation in place?

4) How does the company manage the stock of raw materials?

5) How does the company select and manage the suppliers?

2. Deepening of internationalisation

1) Now, does the company will purchase raw materials from abroad? If so, what is the percent the raw materials account for? And what kind of raw materials accounts for the most?

2) Is there a difference between the multinational and domestic procurement process? And what about the management methods? Please provide a detailed explanation.

3) Is there a difference between domestic and international materials? And for what domestic and international reasons the import quantity will fluctuate in a large scale? And what is the most important reason?

4) What is reason that you choose an import supplier?

5) How does your company think about the international procurement opportunities?

6) Compared to the competitors in the same industry, what is the advantage of international procurement? Does your company know about the procurement status of the competitors?

7) What kind of reasons will influence the import raw materials quantity? And what is the pivotal reason? Is there a psychological distance?

8) What are the barriers for raw materials procurement internationalisation?

9) In the deepening process of internationalisation, what kind of role will the company take? A follower or a leader?

3. The SWOT Analysis

1) What is the status of international and domestic procurement market? And what are the problems the company is facing now?

2) Will the raw materials procurement be influenced by the BRI?

3) What are the strength, weakness, opportunity and threat for multinational procurement under BRI?

4) How do you think about the influences the BRI brings to the company?

4. The Future Procurement Strategies

    1) Does the company have the intention of deepening internationalisation? If so, are there any strategies under the BRI?

    2) How do you think about the future of BRI? And what do you think about the opportunities? Positive, neutral or conservative?

B. Interview Outline of Government

Interview Purpose:

Understand the current status and future trend of international raw materials procurement in China.

Object to be interviewed:

Government departments

Researchers:

Personnel in Customs and export trade departments.

Theoretical Basis of the Interview:

This interview is mainly based on the international trade theory and SWOT analysis and the questions are about external environment of multinational procurement.

Questions to be interviewed:

1. The Macro environment

    1) Has the country introduced preferential policies on imports of raw materials? Are these preferential policies limited to the industry? What are the specific sectors? What are the guiding purposes of these policies?

    2) Is there a violation of import raw materials procurement in food industry?

    3) Does the import raw materials of food processing account for a high percent of the total raw materials?

    4) Is there a territoriality of importing raw material procurement? And what are the main regions and countries? Are there some restrictions or supports for tariffs in these countries?

2. Strength Analysis

    1) Does the BRI stimulate the increase in imports or exports of raw materials in the food industry?

2) Compared to other countries, what are the advantages, disadvantages, opportunities and threats of this new environment for China's transnational procurements?

3) Under the BRI, are there some preferential policies related to cross-border procurement? Especially the tax policy.

3. The Future Developing Trend

1) Does the government have the intention of encouraging cross-border procurement in the next decade? Will there be industry and geographical bias?

C. Interview Outline of Upstream Enterprises

Interview Purpose:

Understand the current status of upstream suppliers of the case company.

Object to be interviewed:

The upstream enterprises for case company and mainly the upstream suppliers.

Researchers:

Principals of flour suppliers

Theoretical Basis of the Interview:

This interview is mainly based on the supply chain coordination theory and we mainly selected questions from the raw materials supply of case company.

Questions to be interviewed:

1. Is there an understanding of foreign companies in the same industry? Compared to foreign flour manufacturers, what are the advantages and disadvantages that the suppliers give to the domestic flour manufacturers?
2. What are the differences in quality, packaging and price of flour between domestically sourced flour and importing flour?
3. Is the domestic flour maker superior to the flour importer in terms of supply coordination?
4. What are the advantages, disadvantages, opportunities and threats of flour manufacturers under the BRI?
5. Does the company adjust the strategy to meet the competition of foreign flour producers under the BRI? What is your expectation of cross-border procurement development?

Appendix 2: Questionnaire

Questionnaire for Suppliers (the flour enterprises)

NO._____

Hello, dear friend! Thank you very much for your attendance at this interview! The results will not be used for business but only for academic research. We inform you that your answers will be kept strictly confidential. Please choose the answers according to your true feelings and note that there is not be a correct answer for each question. Thanks for your support and cooperation.

The majority of this interview is multiple choice (expect for some special questions). Please mark the "√" or write a number in the "□".

Part Ⅰ Basic Information

1. Your gender is:

   □A. Male □B. Female

2. Your department in your company is:

   □A. Purchasing Department □B. Production Department

   □C. Sales Department □D. Other Departments

3. Your age is:

   □A. 15-20 years old □B. 21-35 years old

   □C. 36-50 years old □D. More than 50 years old

4. Your working years in this company is:

   □A. 0-1year □B. 2-5years □C. 6-10 years □D. More than 10 years

5. Your working years in this department is :

   □A. 0-1year □B. 2-5years □C. 6-10 years □D. More than 10 years

6. Your working years in this industry is:

   □A. 0-1year □B. 2-5years □C. 6-10 years □D. More than 10 years

Part Ⅱ Purchasing Information

7. The main purchasing source of wheat is:

□A. China □B. Southeast Asia □C. Australia □D. Others

If the main source is from other countries, please mark in this blank: _____.

If the wheat is imported from foreign countries, which country will be the most suitable and have the advantages among other countries? _____

8. Your purchasing wheat mainly comes from the _____ (if the wheat is from other countries, you will not answer this question):

□A. East China □B. South China □C. Central China □D. North China

□E. Northwest China □F. Southwest China □G. Northeast China

9. In your company, the proportion of the purchase quantity of wheat is:

□A. 0-5% □B. 6-10% □C. 11-50% □D. More than 50%

10. In recent years, the import price of wheat your company is approximately to _____ yuan/ton:

□A. 1000-1500 □B. 1500-2000 □C. 2000-2250 □D. 2250-2500

If others, please make the range_____. If your company has no import wheat, please mark a range according to your understanding_____.

11. In recent years, the domestic price of wheat your company is approximately to _____ yuan/ton:

□A. 1000-1500 □B. 1500-2000 □C. 2000-2500 □D. More than 2500

If others, please make the range_____.

12. The proportion of the total purchase of wheat in your company each year from the old supplier is (cooperation time for more than 1 year):

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

13. The proportion of the total purchase of wheat in your company each year from the new supplier is (cooperation time for more than 1 year):

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

14. The frequency of your company's purchase of wheat per year is:

□A. 0-1 months/time □B. 0-1 months/time

□C. 0-1 months/time □D. 0-1 months/time

15. According to the acquisition of the volume of wheat, please sort the 3 best months of purchasing volume. Fill 1 for the best month and so on (please write a number in the "□"):

□A. January □B. February □C. March □D. April

□E. May □F. June □G. July □H. August

□I. September □J. October □K. November □L. December

16. According to the acquisition of the volume of wheat, please rank the 3 worst months of purchasing volume. Fill 1 for the best month and so on (please write a number in the "□"):

□A. January □B. February □C. March □D. April

□E. May □F. June □G. July □H. August

□I. September □J. October □K. November □L. December

17. According to the acquisition of wheat, please estimate the size of the 3 main suppliers (wheat plant) and estimate the average production per year:

□A. More than 1 million tons (big) □B. 50-100 million tons (middle)

□C. 0-50 million tons (small)

18. In your suppliers (wheat plant), the proportion of private enterprises accounted for:

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

19. In your suppliers (wheat plant), the proportion of state-owned enterprises accounted for:

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

Part Ⅲ Production Information

20. The age of your company is:

□A. 0-5 years □B. 6-10 years □C. 11-20 years □D. More than 20 years

21. The nature of your company is:

□A. Private enterprise □B. State-owned enterprise

□C. Collective enterprises □D. Others

22. Your company's annual production of flour (scale) is:

□A. More than 400 thousand tons (big） □B. 20-39 million tons (middle)

□C. 0-20 million tons (small)

23. Please rank the 3 main plants according to the distribution of the plants. (Please write a number in the "□"):

□A. East China □B. South China □C. Central China

□D. North China □E. Northwest China □F. Southwest China

□G. Northeast China □H. Hong Kong, Macao and Taiwan □I. Others

24. Please rank the 3 main regions according to the flour production distribution of the plants. (Please write a number in the "□"):

□A. East China □B. South China □C. Central China

□D. North China □E. Northwest China □F. Southwest China

□G. Northeast China □H. Hong Kong, Macao and Taiwan □I. Others

25. The ratio of the cost of raw material (wheat) accounting for the total cost is:

□A. less than 50% □B. 50-80% □C. more than 80%

26. The ratio of the cost of accessories accounting for the total cost is:

□A. less than 15% □B. 16-30% □C. more than 30%

27. The ratio of the cost of labour accounting for the total cost is:

□A. less than 5% □B. 5-10% □C. more than 10%

28. The ratio of the cost of logistics accounting for the total cost is:

□A. less than 3% □B. 3-5% □C. more than 5%

Part Ⅳ Sales information

29. Please rank the 3 best months according to the volume of flour. The best month ranks 1 and so on. (Please write a number in the "□"):

□A. January □B. February □C. March □D. April

□E. May □F. June □G. July □H. August

□I. September □J. October □K. November □L. December

30. Please rank the 3 worst months according to the volume of flour. The worst month ranks 1 and so on. (Please write a number in the "□"):

□A. January □B. February □C. March □D. April

□E. May □F. June □G. July □H. August

□I. September □J. October □K. November □L. December

31. In the season of sales, how long could the stock can be for the sales?

□A. 0-1 month □B. 2-4 months □C. 5-8 months □D. 9-12 months

32. In the period of low sales, how long could the stock can be for the sales?

□A. 0-1 month □B. 2-4 months □C. 5-8 months □D. 9-12 months

33. In the season of sales, what are the average shipments from the stock?

□A. 0-1 million tons □B. 2-5 million tons

□C. 6-10 million tons □D. 10 million tons

34. In the period of low sales, what are the average shipments from the stock?

□A. 0-1 million tons □B. 2-5 million tons

□C. 6-10 million tons □D. 10 million tons

35. Please rank the 3 main regions according to the sales volume of flour. The best rank region ranks 1 and so on. (Please write a number in the "□"):

□A. East China □B. South China □C. Central China

□D. North China □E. Northwest China □F. Southwest China

□G. Northeast China □H. Hong Kong, Macao and Taiwan □I. Others

If others, please mark there: _____.

36. Please rank the 3 main transportation ways. The best ranks 1 and so on. (Please write a number in the "□"):

□A. road transport □B. Railway transportation

□C. Water transport □D. airline transport

37. In your company's flour orders, the longest distance is:

□A. 0-100 km □B. 101-50 km □C. 501-1000 km □D. more than 1000 km

38. The ratio of more than 1000km's orders accounting for all the orders is:

□A.0-10% □B.11%-20% □C.21%-50% □D. More than 50%

39. The ratio of less than 500km's orders accounting for all the orders is:

□A.0-10% □B.11%-20% □C.21%-50% □D. More than 50%

40. What is average quantity of the 3 best purchasing customers?

□A. 0-20 million tons □B. 21-50 million tons

□C. 51-100 million tons □D. More than 100 million tons

41. In your company's flour orders, the ratio of old customers (cooperation for more than 1 year) is

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

42. In your company's flour orders, the ratio of repeat guests (for more than 1 month but not

more than 1 year and the number of cooperation is greater than 1) is:

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

43. What is ratio of annual export volume of flour accounting for total sales?

□A. 0-10% □B. 11-30% □C. 31-50% □D. More than 50%

44. What is the ratio of the purchasing volume of private enterprises accounting for total sales?

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

45. What is the ratio of the purchasing volume of state-owned enterprises accounting for total sales?

□A. 0-30% □B. 31%-50% □C. 51%-70% □D. 71%-100%

46. Your company's annual return rate is:

□A. 0-5% □B. 6-10% □C. 11-40% □D. 40%以上

Signature **：** _____

Position **：** _____

This is the end of the interview, thank you again for your cooperation! I wish you well!