The Sinofication of Global Value Chains, Rural Development and Cashmere

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Abstract
The economic rise of China has major implications for the configuration of global value chains and rural development worldwide. This paper examines these relationships in the particularly revealing case of China’s cashmere industry. Cashmere has traditionally been produced in harsh agro-climatic environments in some of the least developed areas of the world, and processed and worn as luxury items in the most developed. China now dominates the global value chain for cashmere in the stages of trade, processing, production, and possibly consumption. The Sinofication of the global value chain for cashmere has not, however, occurred through a process of industrial upgrading in the Chinese industry. To the contrary, the industry is undergoing a “downgrading” process that industry actors are seeking to reverse through measures outlined in the paper.

Introduction

The Sinofication of global value chains

China has followed the blueprint for economic development established by the East Asian Newly Industrialised Countries (NICs) in pursuing export-oriented and manufacturing-led economic growth. The vast resources released through economic liberalisation, especially labour, has meant that China has become the “world’s factory” and a major participant, especially in the manufacturing stages, of the global value chains of many commodities. The result has been three decades of near double-digit growth and the largest movement out of poverty in history (National Bureau of Statistics, various years).

Yet China’s export sector is still based on labour-intensive manufacturing of low-value products (OECD, 2007). Long-standing concerns about China’s “passive” (beidong) position in the international economy have been accentuated in recent years by the global financial crisis, increasing labour costs, and the appreciation of the Renminbi. Chinese policy-makers, firms, industry groups and researchers are searching for ways to transform the economy, as did the East Asian NICs in an earlier era.

The global value chain (GVC) literature offers an analytical framework that is highly applicable to China’s economic transformation process that resonates with a range of industry actors in China. The literature is particularly concerned with the process of industrial upgrading, or building international competitiveness in higher-value economic activities. Four forms of industrial

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upgrading have been identified: product upgrading, process upgrading, inter-chain upgrading and intra-chain upgrading (Gereffi et al. 2001), with most attention focused on the latter. Intra-chain upgrading is defined as acquiring new functions in either downstream or upstream stages of a GVC. The desired direction of the upgrading differs by commodity, most fundamentally on whether the GVC is “producer-driven” (e.g. automobiles) or “buyer-driven” GVCs (e.g. textiles). This dichotomy based on manufacturing industries has been extended to include “trader-driven” chains for primary commodities (Gibbon 2001). Countries or “lead firms” that are in a position to “drive” the chains are thought to derive the highest value (e.g. returns) from that participation in that chain. That is, lead firms tend to be original equipment manufacturers (OEMs) in producer-driven chains, original brand manufacturers (OBMs) in buyer-driven chains, and traders in trader-driven chains. Barriers to entry into these “lead firm” positions can be high, especially for firms from developing countries. Another key component of GVC analysis is that linkages in GVCs are subject to governance structures, including contract and investment structures, networks and codes/standards (Sturgeon, 2002).

In buyer-driven chains like textiles, China’s export sector has been largely confined to a role of manufacturing under contract for OBMs from developed countries. While Chinese firms have been encouraged to “go out” (zouchuqu) into overseas markets, few Chinese firms have been able to “functionally upgrade” into downstream activities by, for example, establishing international brands and retail chains. As is the case in many developing countries, firms therefore focus on the domestic market where there are lower barriers to entry to the lead firm position, and that are “closer” to firms in geographic and cultural proximity. While the domestic markets of most developing countries limit widespread opportunities for firms to grow and upgrade, the Chinese domestic market for many commodities is large, growing and segmenting to include markets for high-value products. Opportunities exist not just for intra-chain upgrading, but also “product upgrading”, or moving into more sophisticated product lines with higher unit values (Gereffi et al. 2001). As could be expected, large Chinese firms pursue both domestic and international activities as part of their broader firm strategies.

While Chinese firms have had limited success in moving into downstream stages of “buyer-driven” GVCs overseas, they have been more active in vertically integrating to upstream segments, especially to source raw materials (Hong and Sun, 2006). Much attention has in recent years focused on China’s overseas investments in mineral and energy resources, to supplement sources (Schüler-Zhou and Schüller, 2007). However, similar imperatives apply for agricultural resources – and not just for food security reasons. 62% of the inputs into China’s light industry sector derived from the agricultural sector (Ministry of Agriculture, various years). In 2008 China was the second largest importer of agricultural products in value terms, and with the largest agricultural sector in the world, was the largest exporter (FAOSTAT, accessed April 4, 2011). The presence of a large domestic resource base differentiates China from East Asian NICs and, in an increasing resource-constrained international economy, may act as a source of competitive advantage for Chinese firms in GVCs.

The scale and rate of development of multiple sectors of the Chinese economy – not just manufacturing, but in the domestic market and in inputs supply – raise new questions for the GVC literature. Will Chinese manufacturers with access to large domestic markets and resources, and opportunities to build vertically integrated operations, provide Chinese firms with the base from which to engage in intra-chain (and other forms of) upgrading in GVCs? Does intra-chain upgrading overseas form an important component of China’s broader economic development strategy? Will the “Sinification” of multiple stages – and sometimes all stages – of GVCs

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2 The sectors include food products, food processing, beverages, tobacco, textiles, clothing and footwear, leather processing, timber, furniture, paper products and printing. Employment in activities based around agricultural products would be higher if services (such as food service, trading, retailing and transport) were included.
fundamentally reconfigure those chains? Or will major constraints – for example fragmented industry structures or institutional factors – impede this upgrading process? And what are the implications for rural development both inside and outside of China of increasingly Sinofied GVCs that source raw inputs from the agricultural sector? This paper aims to provide some insights into the structures, prospects, and constraints that will guide China’s industrial upgrading process and the implications for rural development.

The case of cashmere

The Chinese cashmere industry provides particularly revealing insights into the Sinofication of GVCs and associated development implications. Cashmere is produced in some of the poorest and most arid parts of Central Asia, including Mongolia, Iran, Afghanistan, but especially China which produces 75% of the world’s cashmere. With cross-border trade and smuggling of raw cashmere into China, 93% of the world’s raw cashmere is now produced in or sold to China. While nearly all cashmere from these regions was until the early 1990s sold to established processors in the developed world (especially Europe and Japan), at least 2,000 Chinese cashmere processors now process 75% of the world’s cashmere products (Jiang, 2005; China Cashmere Net, 2008; Icandata, 2008; China Wool Textile Association, 2009). As a result, cashmere products that were traditionally worn by only the most affluent and discerning customers in the developed world, are now a much more accessible and affordable item sold through mass retailers like Walmart. The Chinese domestic market for cashmere products has grown significantly and, with declining exports to the developed world triggered by the global financial crisis, may account for up to half of world market (China Wool Textile Association, 2009; Chen, 2010).

While all sectors of the cashmere industry have now gravitated toward China and the industry is less divided along East-West lines, this has not necessarily been accompanied by an industry upgrading process. In the “buyer-driven” GVC for cashmere, more than 80% of China’s exports of cashmere products are still processed by OEMs under contract from OBMs from the developed world. Actors in the international cashmere industry are concerned about the proliferation of low quality and mislabelled or adulterated cashmere products originating from China and the consequent damage to the long-term reputation of the fibre and industry. Chinese industry actors are concerned about the structures that underlie this product downgrading process, including fragmented industry structures, low margins, over-capacity and distortionary cashmere marketing systems. Elements of this “downgrading” process are common to other light industries in China, so the case of cashmere provides broader insights into numerous other China-centric GVCs. However the lessons are particularly applicable to high-value food and fibre chains that are espoused as offering opportunities for rural development (World Bank, 2007).

While the case of cashmere provides broadly comparable insights for other light industry and agricultural commodities in China, the industry also holds some particular characteristics. As China now dominates all sectors of the international industry, it is seen as a particularly “Chinese” industry that should be asserting itself on the world’s stage, rather than undergoing a “downgrading” process. On a more regional level, the cashmere industry is largely based in Northwest China, which is the most undeveloped region of China and the main target of China’s regional development program. Cashmere processing is one of the few light industry activities in which Northwest China holds a competitive advantage over more developed and industrialised parts of China. A major source of competitive advantage for the regional industry is its access to raw cashmere, which is produced by low income herders in severely degraded grasslands in Western China and bordering countries.

As China – and more specifically Western China – is a central player in the GVC for cashmere, Chinese industry actors – firms, policy-makers and industry bodies – have a combination of
commercial, strategic, developmental and indeed patriotic interests to upgrade the industry. This is reflected in numerous policy measures discussed in this paper. Based on a literal interpretation of these policies and comments from industry bodies, some international observers believe that China plans to control and regulate the entire value-added chain for cashmere (Lecraw et al., 2005; de Weijer, 2007; Cashmere Fibres International, 2007). A critical examination of the challenges and measures, however, reveals that industry actors are stumped by the new and multi-faceted nature of industrial upgrading. China’s capacity to meet these challenges has major implications for the configuration of GVCs and has significant implications for rural development worldwide.

Data

There is a dearth of English-language and scholarly literature on the Chinese cashmere value chain. Purcell (2001) overviews trade aspects of the Chinese cashmere industry, but scholarly literature is confined mainly to technical aspects of cashmere production and processing. Several development reports make passing reference to the Chinese cashmere industry, though only in context of the implications for the cashmere industries of other developing countries (Lecraw et al., 2005; de Weijer, 2007; Odessa Centre and Kyrgyz Sheep and Goat Breeders Association, 2007).

There is also a scarcity of statistics on the industry. Statistics are systematically collated for production and trade aspects of the industry, but not for the processing and retailing sectors, either internationally or within China. The scarcity of statistics on the cashmere industry is partly because of the nature of the fibre, which is produced, transformed and retailed by a very large number of industry actors in small unit volumes, and is often blended with other fibres.

This paper draws on five sets of data. First are macro statistics on the primary production and trade sectors of the Chinese industry, from both international and Chinese sources. Second, the paper draws on a thorough review of Chinese-language reports and studies of the industry, especially industry reports and presentations by industry actors at industry conferences. Third, interviews were conducted with key industry actors in China (cashmere processors, industry organisations, policy-makers and service providers) and with international actors (industry organisations and traders). Interviews were semi-structured and, together with industry reports above, provide an “industry perspective” of the industry. Fourth, the analysis draws on information from cashmere producers in Western China, and an economic model of a representative cashmere producing household. The model aims to establish incentives for households to participate in “product upgrading” for cashmere, and the rural development implications of that participation. Finally, the paper draws on in-depth analysis of the Chinese wool and wool textile industry, which shares many similar traits with cashmere (Longworth and Brown, 1995; Brown et al., 2005). Thus, while there is a lack of reliable English-language studies and data on the Chinese cashmere industry, this paper aims to fill the gap through the cross-verification of multiple sources of data.

Contributions of study to GVC literature

This paper aims to contribute to the GVC literature in several areas.

- There is of course a growing body of literature on the rise of China in the international economy, including on the development of high-tech industries, creative industries, and the internationalisation of Chinese business. While many principles espoused in the GVC literature are embedded in these studies, there are few studies that explicitly adopt a GVC perspective. Some recent studies that do adopt a GVC approach include those on spatial patterns in China’s processing trade (Ma et al., 2009) and the role of foreign investment in increasing the international

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3 While much of the information in the reports is consistent with other reports and provides “industry intelligence”, the information is rarely from official or systematically collated sources, and should be verified before commercial or policy application.
competitiveness of Chinese firms (Brandt and Thun, 2010). China features prominently in a recent report about GVCs in the post global financial crisis world (Cattaneo, 2010). This paper aims to supplement these cross-sectoral and macro-level studies with a more micro-level and industry-specific focus.

- The textile sector has been the major focus of empirical studies on the GVC literature (see for example Gereffi (1999)). However, even within the textiles sector, there is large variation in the GVCs for different fibres. As mentioned above, there is a limited number of studies about the Chinese or international cashmere industry per se, and none that adopt a GVC approach.
- Analysis of the GVC for cashmere back to primary production stage involves micro-level analysis of small-holders and their place in GVCs. Linkages between macro- and micro-level scales of GVCs have been identified as an under-researched but fruitful area of focus for the GVC literature (Challies, 2008). As also mentioned above, rural development issues in the industry are especially pronounced as the fibre is produced in poor and environmentally sensitive pastoral regions of the world. Furthermore, cashmere processing is labour-intensive and forms a significant component of regional development programs in Western China and Mongolia.
- A major focus of GVC analysis is on governance structures that mediate relationships between firms. However, this focus is rarely extended to direct examination of government policy and institutional settings that underpin these governance structures. This paper outlines some of the settings. As such, policy-makers are treated as another industry actor, along with firms, households and – as intermediaries between these actors – industry associations.
- While GVC theory can be applied at both firm and national levels (Gereffi and Tam, 1998), the analytical focus of the paper is at industry level and, more specifically, at domestic industry level. This analytical perspective highlights the role of industry-wide upgrading and relationships across industry sectors as a determinant of international competitiveness in higher-value economic activities.

Structure

The paper first presents macro-level statistics on international cashmere trade patterns. This sets the scene for more meso-level and micro-level analysis of activity in the China-centric GVC for cashmere. The analysis is structured by four forms of “industrial upgrading”. Two of the forms – intra-chain upgrading and product upgrading – are drawn from the GVC literature. A major argument of the paper is that these forms of upgrading are determined by underlying domestic industry structures and relationships across industry sectors. Thus, other forms of upgrading incorporated into analysis include upgrading of the processing sector and inputs sector. Therefore the four forms of upgrading analysed are:

1. Intra-chain upgrading (acquiring new functions in either downstream or upstream stages of a GVC)
2. Upgrading of the processing sector, examined as a shift in the relative importance of small, undeveloped firms to large, more modern firms
3. The upgrading of input supplies and channel (to produce cashmere demanded by processors), and
4. Product upgrading, a movement into more sophisticated product lines with higher unit values

Conclusions highlight the need to examine inter-sectoral relationships in GVCs in order to both understand and to embark on the process of industry upgrading.

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4 Other forms of upgrading not addressed directly include inter-chain upgrading and process upgrading.
The international cashmere trade

Cashmere derives its name from the region of Kashmir but has from the 13th century been grown in many semi-arid and cold regions of Central Asia. Cashmere goats grow small amounts of undercoat famous for its properties of fineness, softness, insulation/warmth and elasticity/drape. Cashmere from Western areas of China – especially Inner Mongolia and bordering areas – now produces the “best” cashmere in terms of fineness (fibre diameter or width) and whiteness (that can be dyed light colours). However, processors can also have preferences for cashmere produced in Mongolia and Central Asia that is longer (which improves spinning performance and reduces pilling), for producing darker products and for blending. “New world” countries such as Scotland and Australia have also sought to build cashmere industries for this market (MacGregor, 2002). While the term “high-value” product is applied often and loosely to many agricultural commodities, genuine cashmere certainly fits this description if measured in terms of price to weight.

Internationalisation and commercialisation of the cashmere chain began when the fibre became popular with the aristocracy and upper classes in Europe in the mid 18th century. The Dutch East India Company traded cashmere products from Central Asia, but a French company (Valerie Audresset SA) claimed to have first commercially spun cashmere (MacGregor, 2002). In the 1870s Jospeh Dawson visited Kashmir and began processing the fibre in Britain (Shimizu, 2009). Dawsons began buying from China in 1906, and went on to form a company that became synonymous with the world cashmere industry. Firms such as Dawsons closely guarded their cashmere processing technologies, which changed little over the years. This includes early-stage processing (dehairing and scouring), which was and remains a crucial step in the processing chain. However, processing technologies expanded in Europe (Scotland, Italy, France) and later (in the 1970s and 80s) into Japan, where affluence generated demand for the luxury product.

Although cashmere is not considered important to China’s “food and warmth” (wenbao) needs, raw cashmere exports were one of few sources of foreign currency for China in the central planning era and, in some periods, the largest source (Blackburn, 1990). China – or more specifically Western China – expanded to produce the most and best cashmere in the world and to become an integral part of the world cashmere industry. With limited domestic processing capacity or technology, the cashmere was sold in raw form to European processors through state agencies.

In the central planning era, Chinese textile mills and institutes conducted research and ran small scale processing runs for some cashmere products, most famously in 1965 when 1,560 sweaters were exported under the Xuelian brand. It wasn’t until 1978 that China built its first integrated processor – Beijing Cashmere Sweater Company that bought the Xuelian brand from the Foreign Trade Company (Zhongtuxu Xuelian Co. Ltd., 2010). Most famously, an Inner Mongolian company – Yikezhao League Woollen Sweater Factory, which was established in 1980 to conduct barter trade – entered into a joint venture with a Japanese conglomerate (Mitsui) seeking to secure supplies for the burgeoning Japanese cashmere market. The parent company went on (in 1992) to become Erdos and the largest cashmere processor in the world. With access to cashmere processing technology, markets and raw materials, with market liberalisation, and with an influx of cotton and 6 Central Asian regions that grow cashmere include Mongolia, Afghanistan, northeastern Iran, Kazakhstan, Kyrgyzstan, northern and Western Pakistan, Tajikistan, Uzbekistan, Turkmenistan, and northern and western China.

6 In the Central Planning era, cashmere was sold through the state agency 中土畜 (now called the China Chamber of Commerce for Import and Export of Foodstuffs, Native Products (CCCFNA)). Dawsons originally purchased through the central agency (in Beijing and the port city of Tianjin), but from 1978 then purchased directly from provincial subsidiaries (Blackburn, 1990). The cashmere trade was regulated from 1990 when MOFERT established the Cashmere Foreign Trade Centre that set limits for export prices, and issued export (Purcell, 2001). These controls have now been dismantled

See also http://baike.baidu.com/view/3167999.htm#sub3167999
wool processors entering the cashmere industry, the Chinese cashmere processing sector exploded in the 1990s. While there were only 10 cashmere processors in China in 1988 there are between 2,000 and 2,600 today (State-owned Assets Supervision and Administration Commission of Shanghai, 2010). As elaborated below, the proliferation of the sector was both in the form of large, world-leading enterprises, as well as a vast numbers of small processors and individuals, that form series of lover-lapping industrial parks, marketplaces and clusters.

With only a small market for finished cashmere products in the 1990s, China’s processors were export-oriented from the outset. Exports of cashmere sweaters from China (mainland and Hong Kong) increased rapidly to account for 70% of world sweater exports by 2009 (UN Comtrade Statistics Database, accessed 15 December, 2010). The growth in Chinese exports was driven especially by retailers from developed countries (US, Europe and Japan) contracting the production of lower-value products. However China’s exports of cashmere sweaters worldwide dropped during the global financial crisis from 28 million in 2007 to 20 million in 2009.

Structural change in the international cashmere industry is most clearly illustrated by trade flows between China and Europe. As mentioned, Europe was the traditional home of international cashmere processing and remains the worlds’ second largest processing region, accounting for 13% of world exports, primarily for the intra-EU trade. The major consumer of cashmere products – the US – has a small domestic processing capacity, while Japan’s is still significant. Discussion below focuses on the China-Europe trade from 2002 when disaggregated trade data on cashmere products was systematically recorded and when China’s entry into the WTO liberalised the cashmere trade.

Figure 1 shows that exports from mainland China to the EU of cashmere sweaters – HS code 611012, the major finished product in the value chain – increased by a factor of 15 between 2002 and 2009. The trade also occurred more directly from mainland China, as re-exports from Hong Kong dropped by 77% over the period. Chinese exports of cashmere sweaters increased due to their cost competitiveness. The average cost of a cashmere sweater exported from Europe was $121 in 2009, an increase of 147% from 2002. This compared to the average cost of $31 for an exported Chinese sweater in 2009, an increase of just 12% over the period. Figure 1 also shows that China’s exports of “cashmere carded or combed” – HS code 510531, an intermediate product in the value chain – also increased by 208% between 2002 and 2008, before dropping off in 2009.

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8 The shift to cashmere processing from wool (People’s Daily, 2005; CAEG field report, 031128a) and cotton (Icandata 2006) occurred in the 1990s during the era of proliferation of township and village enterprises. Many cashmere processors trace their origins to TVEs structures and did not therefore have legacies of state-owned enterprises seen other textile industries
9 In 2009, the top importers of Chinese cashmere sweaters were Europe (40%), the US (28%), Japan (7%) and Hong Kong (19%, although nearly all these imports into Hong Kong were re-exported to the EU, the US and Japan).
10 Garment makers include Ballantyne, Massimiliano Zegna Baruffa and Dawsons.
11 UN Comtrade statistics are were compared with Chinese customs data. Trends in the data were broadly consistent but differences arise. For sweaters, Chinese export data is marginally higher than the Comtrade data, while for dehaired / scoured cashmere, the Chinese data is lower.
12 When the Multi-Fibre Agreement was replaced by agreements under GATT and then the WTO, Europe phased out import protection on textiles to zero by 2005 though with provisions and safeguards. When China joined the WTO in 2001, it also agreed to liberalise trade policy. Export rebates declined to 11% for yarn and 13% for garments, but were increased to 13% for yarn and 15% for sweaters in 2008 as part of the response to the global financial crisis
13 Other cashmere products (e.g. shawls, scarves) are classified with “other fine animal hair” or with wool products.
14 $168 for Italian, $120 for British and $94 for French sweaters
15 This was said to be actually lower than the average price of Rmb38 in 1996 (Icandata, 2008). Returns are likely to have declined given the appreciation of the Rmb against the SUS of 21%, and a CPI increase of 18.6% over the (2002-2009) period.
Chinese exports of both final and intermediate cashmere products have led to a sharp contraction of the European cashmere processing sector, including the breakup of many established firms (including Dawsons) and the transfer of operations to China. However, the cashmere processing sector that does remain in Europe is becoming increasingly oriented to the high-value European market (Cashmere and Camel Hair Manufacturers Institute, 2005), as evidenced in increasing output prices (discussed above) and input prices (discussed below).

![Figure 1. EU imports of cashmere and cashmere products from China 2002-9](source: UN Comtrade Statistics Database, accessed December, 2010)

Developments in the EU-China processing sector are also reflected in Europe’s imports of early-stage inputs from China – HS code 510211 “cashmere not carded or combed” – which is effectively scoured or dehaired cashmere. The volume of Europe’s imports of early-stage products from China halved between 2002 and 2009 to reach 1,600 tonnes. However, the unit value of early stage cashmere products imported from China increased 45% between 2002 and 2009 to reach $72, the highest priced source of all imports. Even with reduced export volumes and increasing domestic capacity, China accounts for 55% of total world exports of cashmere not carded or combed.

In addition to producing and exporting the highest-value cashmere, China also imports significant volumes of cashmere in various forms. Access to imported cashmere provides another important source of competitive advantage to Chinese processors, especially as the trade partners are located in the relatively nearby regions of Pakistan, Afghanistan and especially Mongolia. Chinese traders and mills are becoming increasingly outward-looking to capture supply for processing in

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16 The HS code 510211 may also include raw cashmere but not legally in the case of China which has banned the export of raw cashmere.
17 This was only partly offset by an increase of 25% in imports from Mongolia (to reach 396 tonnes), while other country exports to Europe dropped.
18 This compares to $60 for Mongolian and $48 for Iranian uncarded or uncombed cashmere. These price spreads are consistent with those reported in Schneider Wool Market Indicators (2002-2010) (see Figure 2).
19 In recent years, Pakistani traders have sourced cashmere from Tibet, which has then been processed and then exported to China (90 tonnes of carded or combed in 2007).
20 Afghan cashmere has traditionally been exported to Iran for early-stage processing, and then exported to Europe (especially Belgium) for final processing (de Weijer, 2007). However, with decreased purchases from Europe because of the global financial crisis, Chinese buyers have become very active in Afghanistan (Cashmere Fibres International, 2009).
China.\textsuperscript{21} China Customs record significant imports of dehaired cashmere in 2009 (442 tonnes, mainly from Mongolia), while Comtrade records a significant volume of imported combed or carded cashmere (229 tonnes, almost all from Pakistan).\textsuperscript{22} However, China Customs records negligible imports of raw cashmere (77 tonnes in 2009 and 172 tonnes in 2010). These statistics are seriously under-stated, because Mongolian imports of raw cashmere are not recorded in Chinese import statistics and because of the high volumes of raw cashmere smuggled from Mongolia.\textsuperscript{23}

### Intra-chain upgrading

The macro-level trade data presented above provides some insights into trends in the Chinese cashmere industry, including a rapid growth in exports of more elaborately transformed cashmere products (until the global financial crisis), and continued low value of these exports. However, the data does not reveal aspects of the cashmere trade that are of primary interest to GVCs analysts – and Chinese industry actors – including governance structures in GVCs. There is a broad consensus that 80-90\% of China’s cashmere product exports were produced under contract and by order Chinese OEMs (China Cashmere Net, 2010)\textsuperscript{24} and, correspondingly, 10-20\% of Chinese products were marketed under a “real” Chinese brand in international markets (Anonymous, 2008; China Cashmere Net, 2008; China Wool Textile Association, 2009). That is, the GVC for cashmere can be characterised as “buyer-driven” by OBMs and retailers from developed countries.\textsuperscript{25}

Filling orders for high-end (rather than generic) overseas markets can from technical and managerial perspectives can be both challenging and lucrative (Brown, Waldron et al. 2005).\textsuperscript{26} However, it is widely believed in China that OEM production generates low returns and relegates Chinese firms to a “passive” (\textit{beidong}) poor position and unequal relationships in GVCs.\textsuperscript{27} In

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\textsuperscript{21} Chinese traders have become increasingly adventurous in travelling to neighbouring countries to buy cashmere, including buying directly from producers. Cashmere from neighbouring countries is especially sought after for attributes of length (to improve spinning performance and reduce pilling) and colour (for darker products) and often to blend with (shorter and whiter) Chinese cashmere.

\textsuperscript{22} Taking account for yield conversion from processed to raw cashmere, this accords with estimates from industry groups that China imported 2,000 tonnes of raw cashmere in 2008 (SMC Animal By-product Marketing Assoc.).

\textsuperscript{23} While cashmere has been smuggled from Mongolia since at least 1995, it reached 38\% of Mongolia’s production in 2002 (World Bank, 2003) and 50\% by 2005 (LeCraw \textit{et al.}, 2005). Before 1997, Mongolia banned the export of raw cashmere in order to increase investment, including foreign investment, in the domestic processing sector (which was successful). When Mongolia joined the WTO in 1997, the ban was replaced with an export duty which, especially between 2001 and 2005, became unenforceable through the six porous border points between Mongolia and China. When the duty was removed in 2009, China bought almost all the Mongolian clip (Cashmere Fibres International, 2009a) of 6,700 tonnes in 2009 (National Statistical Office of Mongolia (2009) record exports of greasy cashmere of 3,577 tonnes in 2009 (only 396 tonnes of which went to Europe) and 1,623 tonnes of “combed goat down” (2 tonnes to Europe). The remainder (excluding Europe) is expected to have been exported to China.

\textsuperscript{24} This is referred to in Chinese as \textit{tiepai maoyi} or \textit{laiyang, jiagong maoyi}.

\textsuperscript{25} A number of old established cashmere products both manufacture cashmere products and also import some lines including Burberry’s, Ballantyne, Pringle, Louis Vuitton and Loro Piana. OBM firms include Dolce&Gabbana, Gucci, Dunhill, Ralph Lauren and Tom Ford. Old established retailers include Brooks Brothers and more recently J. Crew. More generic retailers of cashmere products include Gap, Benetton, Zara and Mango in Europe and Costco, Walmart, Carrefour in the US.

\textsuperscript{26} This involves being able to produce and promote innovative products (through all stages especially dyeing), fast turn around time to meet short-term fashion demands, interacting closely and pro-actively with overseas customers (rather than just replicating their samples), and building research and development capacities.

\textsuperscript{27} At a summit on Chinese cashmere brands in 2008, senior officials from the China Chamber of Commerce of Import and Export of Foodstuffs, Native Produce & Animal By-Products (CCCFNA) said that “Even though China’s cashmere industry has a lot of power (monopolises all sectors in the international cashmere industry), export prices have not increased – in fact because of fierce competition, export prices have dropped. China’s negotiating position in the market hasn’t increased in line with the development of the industry. In the international garment trade chain, China is at the low point. It feels like industrious Chinese cashmere companies are doing coolie labour, while foreign sales people stick on a brand and make more than 10 times the money.... In the international division of labour, developed countries can utilise the competitive advantages of technology and brands, so hold the high point in the chains and divide most of the
response, Chinese firms across the economy have been encouraged to “go out” (zou chuqu) to upgrade their position in international markets. This occurs in various ways.

Investment linkages provide an important vehicle for integration into GVCs. Inward foreign investment has for many years been targeted at specific processing activities (spinning, dehaired etc.) in subsidiaries of both the host and foreign companies. The ventures provide Chinese partners with access to technology and to the international sales channels of foreign venture partners. These ventures are however distinct legal and business entities from the downstream operations of the foreign parent companies, including branding and retailing, so domestic venture partners are still excluded from extracting “value” from these activities.

More in the spirit of “going out”, Chinese firms have for some time also been engaged in outward foreign direct investment. The investments allow the Chinese companies to engage more closely with foreign markets in the processing stage in which they have invested (e.g. in spinning in the case of Zhongying’s investment in Todd and Duncan). While these intermediate products also carry brands (for intermediate customers in the value chain), the Chinese investors are still not “buying” recognised foreign brands for final products and consumers. Even if they can, the final products are not usually produced in China, negating the competitive advantages of domestic production.

Thus, Chinese industry actors see the highest “value” form of intra-chain upgrading in GVCs as the penetration of Chinese brands and retail outlets in international markets. Large Chinese firms have sought to develop their own branded products for international markets. Some of the larger firms have also established their own (significant) retail chains overseas. Establishing brands and retail chains overseas is however challenging for Chinese firms because it requires a deep culture-laden appreciation of overseas consumer markets and trends. Chinese firms seek to build this affinity through attending international fashion shows, by commissioning foreign designers and consultants and, increasingly, by employing a new generation of cosmopolitan and often Western-educated Chinese employees. As is the case in other buyer-driven GVCs, however, Chinese few cashmere companies have established a brand presence in international markets. Even companies like Erdos only market 10% of their products overseas through their own brands, and a low proportion of Chinese cashmere processors are even registered to operate overseas (Anonymous, 2008).
While Chinese firms have had limited success in “functionally upgrading” their position in downstream value-adding activities in the cashmere GVC, recent developments may have reduced the imperative to do so. In particular, the downturn in demand of cashmere in developed countries has turned the attention of many Chinese firms to the domestic market, that is maturing and that does not pose the same barriers to entry. According to a market survey (Chen, 2010), the value of the domestic market for cashmere clothes and adornments has (though from a low base) grown at an average annual rate of 21.5% between 2004 and 2010 to reach Rmb13.5 billion. The growth means that the domestic market may account for up to half of all China’s cashmere output (although this market share may drop again when and if the market in developed countries recovers).32

It is important to note, however, that the domestic Chinese market is highly segmented. Much of the market has in the past been filled by low-value cashmere products (as low as US$10-20 retail value for sweaters) sold in local marketplaces, stalls and clusters. Chinese consumers have become increasingly wary of these low-quality and often mislabelled “cashmere” products. Chinese firms believe that more affluent, urbanised and fashion-conscious Chinese consumers will adopt similar preferences of consumers in developed countries for high-value, quality-assured cashmere products. Cashmere is increasingly bought as a present (lipinshan) and increasingly sold over the internet. There are also 23 companies that are vertically integrated into the retail sector through stores, some very large chains33 and sections of department stores.34 Unlike the international component of the cashmere GVC, these outlets are vertically integrated into the processing sector. Chinese consumers associate closely with several well-known brands in a concentrated domestic market. Of the 127 cashmere brands registered in China, the top three account for 53% of retail sales and the top 10 account for 77% (Chen, 2010). For these companies at least, the domestic market is said to be more lucrative than the international market.35 However, all companies maintain a dual and complementary product placement strategy in both international and domestic markets.

Upgrading of the processing sector

Another form of industrial upgrading relates to the upgrading of domestic manufacturing structures, in this case, the cashmere processing sector. Upgrading of the processing sector can be seen as a prerequisite to other forms of upgrading (intra-chain and product upgrading), or the positioning of firms so that they can maximise value creation and learning (Gereffi et al., 2001). This section outlines the diverse range of structures in the Chinese cashmere processing sector which range from world-leading enterprises to backyard operations. Spatial patterns are an important feature of the industry and pose interesting development issues. Information is drawn primarily from summaries submitted to the China Wool Textile Association (http://www.cwta.org.cn/).

Cashmere processors are located across China, but the sector has and retains strong roots in Western China, especially in central Inner Mongolia and Ningxia (see Map 1).36 Cashmere processors are

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32 75% of the cashmere sweater market is in north China – from Shanghai to Northeast China – because of the colder weather in the region. The value of sweaters in the overall market for cashmere products declined from 70% to 62%.
33 Erdos has 1,500 retail stores in China. Prices for pure cashmere products in established stores range from 400 to more than Rmb1,000.
34 Sales of wool and cashmere sweaters in 200 large department stores in China increased by an average of 5% per year between 2004 and 2010 to reach 23.5 million. Monthly data on the sales of sweaters in “National major department stores garment sales” are available on the website of the China Wool Textiles Association, http://www.cwta.org.cn/hytz_zl.htm
35 According to the Chairman of Xuelian in Beijing "The profit margin is less than 10% in the export-oriented processing trade but could be kept at about 40% to 50% for domestic sales (Anonymous, 2008).
36 A scan of the major companies in Western China below reveals least 16 companies that claim to produce 500 to 1,000 tonnes of dehaired cashmere (in addition to many hundreds of tonnes of other cashmere products (combed/carded cashmere, yarn, sweaters). Given a world production of less than 20,000 tonnes of raw cashmere, this makes Western China a major player in the world industry.
located in West China most obviously due to their proximity to high-quality cashmere supplies. As established below, this acts as a major source of competitive advantage, especially for early-stage processors. However, location in Western China is based on other factors. As mentioned above, the branding of cashmere products builds on romantic images of China’s grasslands. The area is relatively undeveloped compared to eastern China, with lower labour costs and environmental standards. However, the area also has developed transport infrastructure (through various programs including the Develop the West program and the mining boom occurring in the area) that link to ports that are not too distant (Tianjin, Shandong). The development of a large, world-class cashmere processing sector in Western China was held up in the 1990s as an antithesis to the “step-ladder” theory of economic development, where eastern areas would develop first and then lead development in Western China (Yang, 1993). As one of the few light industry sectors to retain a strong presence in Western China, the industry continues to be held up as a shining light in the Develop the West program. This role earned early entrants in the field such – especially Erdos – tremendous symbolic, political and economic capital (Bulag, 2002 ) that is reflected in numerous preferential policies applied to the sector (for example, cashmere procurement loans and state-party investment in cashmere industrial parks discussed below).

Inner Mongolia contains a number of large, stand-alone enterprises, many of which have early-stage processing capacity and are vertically integrated. Enterprises are more densely located in Ningxia, especially Tongxin County which contains a large number of early stage processors, including those in a cashmere industrial park. The most developed industrial park in the industry is Lingwu Cashmere Industrial Park on the outskirts of the capital city of Ningxia, Yingchuan. Industrial parks in both Tongxin and Lingwu had aggressive plans to expand, and to build supporting infrastructure including trading markets and information research facilities.

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37 This contrasts to the wool textiles industry, where processors have moved to the East coast, primarily because most genuine fine wool is imported through eastern ports.
38 This is done in another of industries associated with grasslands, including dairy and meat.
39 Large Inner Mongolian firms include those in Erdos (including Erdos and Dongda), Linhe in Bayannao’er Banner (Weixin, Haolin, Chunxue, Shuanghe), Hohot (Zhaojun) and Baotou (Shanyangwang and King Deer)
40 Tongxin County has 100 cashmere enterprises, 27 with import/export licences, 34 of which are located in an industrial park, and 5 of which are foreign-invested. Major enterprises in the park include Shenghai and Dehai (which claims to process 10% of the world’s cashmere). The county claims to produce 2,000 tonnes of dehaired cashmere.
41 The Lingwu Cashmere Industrial Park was built by the city government and party. It has 41 enterprises, five of which are large (Shengxuerong, Zhongying, A’erfa, Xinyi, Jiayuan) and 18 of which are medium sized (Rmb50 million investment) and includes an investment by Dawsons. In 2006, enterprises in the Park claimed to process 5,000 tonnes of cashmere, to produce 2,260 tonne dehaired cashmere, 250 tonnes of tops, 200 tonnes of yarn, and 1 million sweaters. 5,000 people are employed in the Park.
While Western China is known as the home of the Chinese cashmere industry, the industry has developed rapidly in central and eastern China. There are some large cashmere processing firms in the region. However, the defining feature of the cashmere industry in the region is that it is based around industry clusters comprised of a vast number of enterprises and individuals. These actors are linked through an intricate flow of information and credit and infrastructure, especially market places but also industrial zones and warehouse facilities. Clusters are a feature across the Chinese textile industry (China National Textiles Industry Council, 2003) and in the GVC literature (Bair and Gereffi, 2001).

One such cluster is in Puyuan Town (Tonxiang City, Zhejiang Province) (Ruan and Zhang, 2009) identify two models of operation in the cluster. In one model (which could called a producer-driven chain), small-scale weaving operations buy yarn from dealers, weave the yarn, outsource dyeing and finishing operations, then sell fabric on the Puyuan market. In another model (which could be called a trader-driven chain), traders with little more than a three-wheel bike buy materials (e.g. yarn), source out all the processing stages, then sort, package and sell the products at market. Visits to the market revealed other models of operation (CAEG field 031129a). Many (yarn, fabric or garment) producers lease, or have relatives that lease, stalls at the market. They use these stalls to sell and – also importantly – showcase their own products. There were also examples of what could be called hybrid producer/buyer-driven chains, where producers buy generic, unbranded garments and apply one of their brand names to the garment for sale in their stalls.

42 Several are located around Tongxiang overviewed below including Zhenbei in Huzhou and Tuhuang and Lanbao in Jiaxing. Others include Chunju in Suzhou and others in Guangdong.
43 These include yarn dealers, large manufacturing factories, family weaving workshops, dyeing factories, finishing factories, printing workshops, ironing workshops, sweater dealers, three-wheeler drivers and logistics companies.
44 Puyuan is said to have 10,000 actors (companies and individuals), 6,000 of which are stallholders and dealers in the Puyuan market. Puyuan also developed an industrial park in 2000 consisting of 121 enterprises.
Variations of this cluster also exist in other parts of eastern/central China. However, the largest and most famous cluster is in the county capital of Qinghe, on Hebei/Shandong border, where (garment, fabric or yarn) producers have small “courtyard” operations fronted by retail stalls. The Qinghe cluster claims to incorporate 380 enterprises and 87,000 people, and process 4,000 tonnes of cashmere. Economic activity has been largely unregulated through product standards or environmental contracts, although authorities have stated the intention to tax companies (Icandata, 2007).

The vast majority of large, mid and – most notably – small sized enterprises entered the cashmere industry since the 1990s at the earliest. The proliferation of actors has led to a series of problems common to many Chinese industries, including intense inter-firm competition, low margins and over-capacity. China has for many years sought to cut surplus capacity in industries ranging from oil to steel, cement, power, fertilisers, sugar, paper, leather and veterinary products and textiles (ChinaOnline, 2000). Measures used include amalgamation, higher registration requirements (registered capital), and application of environmental standards. The measures are targeted especially at cutting capacity in small and medium enterprises. Some sectors of the textile industry – cotton and wool – were subject to spindle cutback policies, where mills were compensated for retiring outdated equipment (Brown et al. 2005). Similarly, stimulus packages around the global financial crisis were aimed at modernisation and environmental performance (CAEG field reports 090505a). That is, Chinese policy-makers have attempted not just rationalise but also to upgrade industry structures.

Such measures have not been applied to the cashmere industry. Upgrading measures in textiles have been applied mainly to the strategically important industry of cotton and, to a lesser extent, wool. However, small processors in clusters like Qinghe are now exiting the cashmere sector, due to the low margins in low-value market segments (Icandata, 2007). Change is also occurring in the dynamic large-scale processing sector. Many large processors have invested heavily in world class technology and equipment. However, many have also grown to become diversified conglomerates with interests in real estate, pharmaceuticals and, especially in Inner Mongolia, mining. Once the biggest cashmere processor in the world, Erdos is now the biggest ferrosilicon company in the world (China Cashmere Net 2010). Cashmere processing has become has become just one activity – and often not a profitable activity in relative terms – for these conglomerates, which reduces incentives to pursue industrial upgrading or indeed, participate in the cashmere industry. Inter-chain upgrading or diversification can, however, be expected to provide a much-needed rationalisation of the industry.

45 These include Zhili Town in Huzhou City in Zhejiang (which deals in a range of products including cashmere) and Li county in Hebei (which deals mainly in early stage wool products as well as cashmere).

46 The county capital developed under the TVE model in various industries (car and motorbike parts, tungsten rollers, fire resistant materials etc.), but 70% of production value was in cashmere. It now claims to process 4,000 tonnes of cashmere, 2,000 tonnes of yarn, 2 million cashmere finished products. The city comprises of market infrastructure, and industrial zone, information and numerous hotel for customers, traders and the public.

47 There is broad agreement that there is a high degree of over-capacity in the sector. China is said to have (dehaired) combing capacity of 20,000 tonnes, three times the world (dehaired) cashmere production (State-owned Assets Supervision and Administration Commission of Shanghai). China has a “deep processing” capacity of 50 million units of final cashmere products, but domestic and international markets demand only 20 million (Ningxia Linwu Cashmere Industry Park, 2008). The China Animal Husbandry Products Marketing Association estimates 300-400% over-capacity in the sector overall. (CAEG field reports, 170409p). This is not new. In 1999, 95 percent of the more than 80 medium- and small-size cashmere processors in Linghe city near Baotou stopped production, and the Ordos cashmere group had 1.2 million cashmere sweaters piled in stock, worth 0.7 billion yuan, and the Luwang Cashmere Group in Baotou had 900,000 in stock, worth 0.5 billion yuan. There were 7 million cashmere sweaters in stock in Inner Mongolia in 1999, more than the entire sales volume in Chinese and international markets in that whole year (Wang et al., 2001).
Upgrading of input supplies and channels

The ability of Chinese – and especially Western Chinese – mills to access cashmere inputs at lower costs than their competitors, acts as a major source of competitive advantage in GVCs. As is the case for other agro-processing sectors, “raw material” (i.e. cashmere) inputs make up the bulk of all costs for processors (Longworth et al. 2001; Brown et al. 2005). Chinese demand means that European mills and traders are simply unable to buy enough cashmere at a price that would allow them viably process it, which effectively strangles their operations. In a bid to support continuity of supply to processors and the incomes of cashmere goat processors and to develop the industry as a whole, China has taken measures to develop the cashmere production and marketing sectors as part of the broader industry upgrading process. However, developments in the sectors that are vertically and horizontally linked to the cashmere production sector have led to a marked decline in the quality of raw cashmere measured at least in terms of fineness.

Increased demand from Chinese processors, along with supply-side constraints mentioned below, have increased international cashmere prices. This is recorded in several price series that are broadly consistent with each other.48 This paper draws on a price index from an international cashmere trading company because it reflects actually industry purchases (rather than averaged out market or official records) and because it facilitates comparison across countries.49 Figure 2 shows that between 2002 and 2010 annual average prices increased by 10% in China and 11% in Mongolia.50 Price differentials for Chinese and Mongolian cashmere averaged 20% over the period due mainly to the quality of characteristics of the cashmere.51

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48 Price series were collated and compared for dehaired cashmere exports (from China Customs), combed or dehaired cashmere (from Comtrade), price reports on domestic Chinese cashmere (from the China Animal By-product Marketing Association) and Schneider Wool Market Indicators (discussed below).

49 Price indicators for cashmere have been collected since 1970 by Schneider, an international fibre trading and processing company with operations in China, Mongolia and Iran. The indicators are based on quotes for major types of cashmere purchased by Schneider and their competitors, which are averaged and weighted by market size for each type (Schneider, personal communication).

50 Prices dropped significantly in 2009 due to demand shocks imposed by the global financial crisis, but escalated again in 2010 due to stimulus/policy measures and stock losses in the severe winter of 2009/10.

51 Numerous sources generalise on the differences between “Chinese” and “Mongolian” cashmere. One example is: Chinese cashmere is an average of 15.6 micron in length, 32-38mm length and 100% white, while Mongolian cashmere is 16-16.8 micron, 40-45 mm length and 60% white (United Nations Industrial Development Organization, 2011).
These price signals triggered an expansion of the Mongolian goat heard at an annual average rate of 10% over the period, to reach 20 million head (the vast majority of which are cashmere goats) and 6,700 tonnes of cashmere (National Statistical Office of Mongolia, 2009). While China has by far the world’s largest goat flock (of 152 million head), statistics for China as a whole do not distinguish between cashmere and meat goats. This distinction is made, however, for the (266) pastoral and semi-pastoral counties in China that produce almost all of China’s cashmere goats and genuine cashmere (Editorial Board of the China Animal Husbandry Yearbook, various years).
Figure 3 shows that the number of goats of all types in pastoral and semi-pastoral counties increased at a modest annual average rate of 1.8% from 2000 to 2008.\textsuperscript{52} Cashmere goat numbers increased at a higher annual average rate of 6.5%, but the growth occurred between 2000 and 2003, after which time cashmere goat numbers stagnated at around 20 million head. The stagnation reflects supply-side constraints. The over-stocking of livestock – especially goats – has led to the degradation of 90% of grasslands in Western China, which imposes strict limits on further flock expansion (Brown \textit{et al.} 2008). To address grassland degradation, the state has applied grazing bans and restrictions throughout Western China and “encouraged” herders through grazing restrictions and compensation payments to raise goats in pen-feeding systems. Even with compensation payments, pen-feeding systems increase feed costs, and decrease incentives for households to expand herds. The effect of pen-feeding on cashmere yields and quality is a matter of considerable debate in China.\textsuperscript{53}

While cashmere goat numbers have plateaued in pastoral and semi-pastoral counties, cashmere production increased at an annual average rate of 9.6% between 2000 and 2008 to reach 10,000 tonnes. The high increases relative to cashmere goat numbers reflects increasing yields,\textsuperscript{54} achieved especially through breed selection. Breeding agencies and households have selected goats with higher yields (from all breeds), and also switched out of breeds with relatively low yields of fine cashmere (Inner Mongolian type goats) with breeds that have higher yields of longer but coarser cashmere (Liaoning type goats).

The breed selection has led to a significant coarsening of the fibre diameter profile of all breeds, and of the Chinese cashmere clip of up to one micron over a five year period (Cashmere Fibres International 2008; Icandata 2009; Tian 2010). Once long-term breeding trends such as this are in place, they take many generations to reverse, so can be regarded as a long term phenomenon. The cashmere industry in both China and internationally are highly concerned about this trend (China Animal Husbandry Products Marketing Association, 2009; China Animal Husbandry Products Marketing Association, CAEG field reports 090417; China Wool Textile Association, CAEG field reports 101214; Cashmere and Camel Hair Manufacturers Institute, CAEG field reports 110125). In particular they are concerned about diminished supplies of fine cashmere for processors targeting high-value markets, and that the long term position of cashmere in the natural, luxury fibre market will be lost or replaced by other fibres (superfine wool, fine wool that can be descaled, pashima, angora etc.).

China has sought to address this trend through several production-side interventions, including breeding programs\textsuperscript{55} and development projects.\textsuperscript{56} The state also periodically subsidises the purchase

\textsuperscript{52} This increase is higher than that of sheep and cattle which actually declined over the period.

\textsuperscript{53} Some international industry observers assume that pen-feeding will improve nutrition and lead to coarser cashmere. However, the expense of buying feed from off-farm sources has reduced nutrition supply in many areas, which may lead to more oily cashmere, lower yields and length. (CAEG field reports, 240409a).

\textsuperscript{54} Official statistics suggest an average annual increase in yields per goat in pastoral/semi-pastoral areas of 2% between 2000 and 2008, considerably lower than those cited for both Liaoning and Inner Mongolian type cashmere goats (Icandata, 2006).

\textsuperscript{55} The Ministry of Agriculture maintains a breed protection and development program for Inner Mongolian type cashmere goats (A’erbaqi and Alashan breeds) and also the Tibetan goat (Management regulations and detailed implementation regulations for breeding livestock and poultry). Breeding goats are distributed to local stations and households through the vast official breeding hierarchy, and often through development projects and entrepreneurial households.

\textsuperscript{56} There are various projects that aim to develop production structures for cashmere administered at provincial or local levels. One national program that falls under the “Build a New Socialist Countryside” campaign is titled “Fine cashmere goat standardisation and raising cooperatives”, which allocates Rmb30 million to building 100 cashmere goat cooperatives involved 100,000 herders (China Animal Husbandry Products Marketing Association, 2009; CAEG field reports 170409p). A similar program is “Goat raising for poverty alleviation in old revolutionary bases” implemented in Gansu (CAEG field reports 090423).
and storage of cashmere, most recently in the wake of the global financial crisis. These measures are designed to simultaneously support cashmere prices, herder incentives to produce cashmere, and continuity of supply to processors, especially fine cashmere.

While such measures provide a short-term stimulus to the supply of fine cashmere to mills, they do not address the underlying causes of a coarsening of Chinese cashmere supply. As established above, the growth segment of the cashmere market has been for relatively low value, less fine and less “luxurious” final cashmere products, which is reflected at farm level in only small price premiums for fine cashmere. At the same time, processors require greater volumes of cashmere that is lower cost to process. Longer cashmere is more efficient to process at stages including dehairing (McGregor and Butler, 2008). As a reflection of these preferences, the in-house grading systems of some early stage processors are based solely on length and colour.

While the industry as a whole may place less emphasis on fineness as a quality attribute of cashmere, there is still significant demand – especially in Europe/Japan but also in China – for fine cashmere used to service high-value final markets. This is reflected in the price differentials that international traders are prepared to pay for finer Chinese cashmere over longer Mongolian cashmere (Figure 2). Of most relevance here, however, is that these price differentials are not effectively relayed back to cashmere producers. This is a function of the Chinese cashmere marketing system which, since liberalisation in 1990 has become totally dominated by a mass of itinerant private traders that operate in a virtually unregulated and “unstandardised” market. In order to capture supply, private traders compete with each other, and offer modest premiums for quality characteristics that are more readily observable (especially estimated clean yield, colour and length). Traders do not however offer premiums for fineness within a broad range of, for example, 14 to 16 micron cashmere. Due to the fineness of cashmere, it is not possible to

57 The Inner Mongolian government funded the purchase of 6,000 tonnes of cashmere in 2009 and 2010 accounting for a large proportion of genuine cashmere in the region. The subsidies were provided only for the purchase of cashmere under 16 micron, and recipients were instructed to pay a minimum of Rmb400/kg premium for cashmere under 14.5 micron. Unlike storage subsidy schemes for other industries that are conducted by marketing agencies, the cashmere purchases subsidies were provided directly to large processors in Inner Mongolia in the regions of Erdos (3,000 tonnes by Erdos and 1,000 tonnes by Dongda), Baotou (1,000 tonnes by Deer King / Luwang), Bayannao’er (Weixin 280 tonnes, and Chunxue, Haolin, Shuanghe and Daxing all 180 tonnes each). At Rmb 248,000/t raw (Rmb620,000/t clean at 40% clean yield), this would cost Rmb1.488 billion in purchase costs and at 10% interest, the cost of the loans is Rmb148.8 million. The costs were divided three ways by the autonomous region, the prefecture and the enterprises themselves. The subsidies were co-ordinated with related programs of building cooperatives amongst cashmere producers, extension systems, and breed improvement and protection (100 places, with 2000 head total) and building cashmere goat “production bases” in 12 counties in Inner Monoglia. Autonomous region and prefecture governments were to pay for the purchase subsidies and production activities through the VAT (25%) income tax (40%) collected from cashmere processing companies. However, early stage cashmere processors were exempt from income tax (in line with a broader exemption in all early stage agricultural processing in 2008) and all companies were eligible for 16% export rebates (applied across the textiles industry) (The Government of the Inner Monoglia Autonomous Region, 2009).

58 A combing plant in Gansu based in grades and purchases prices on the following scales - A=<>30mm, B=25-30mm, C=<25mm) (CAEG field reports 240409a).

59 There have been several measures taken to “standardise” the marketing system through a series of measures, but none of these have been effective. While cashmere standards exist at national level (GB18267) and provincial levels (Ningxia and IMAR), standards are simply not used as a basis of trade for either households, traders or processors. Testing facilities of Fibre Testing Bureaus are available and are provided free in provinces like IMAR, but almost all trade occurs through subjective assessment. Cashmere production and marketing cooperatives have been formed but largely to fill quotas (in the wake of the cooperative law) and have been largely unsustainable. Auctions have been trialled but account for a negligible proportion of cashmere marketed (China Animal Products Marketing Association, 2008).

60 Around combing season, households become aware of approximate current market prices for the cashmere (from other households, approaches by traders, or ads on the internet). If offer prices do not meet expectations, households can store significant amounts of cashmere in sacks on their households, as shown in the gap in cashmere production and sales in Figure 3. The cumulated amount of cashmere in storage at either household, trader or firm level can account for up to half of China’s total cashmere clip [reference forthcoming].
differentiate to this level of specificity “by eye” without testing (crimp is only a partial indicator to the trained eye). And due to the small amounts of cashmere produced per head and per household, households do not assemble cashmere into commercial lots for mills. Rather, traders sort and assemble commercial lots of cashmere and thereby capture a proportion of the “value” of the raw cashmere. The cashmere is then sold to mills, often through mill “collection points” in Western China, or to markets and clusters in East China. The vast bulk of the sorting and aggregation occurs at mill level, which is labour-intensive and costly activity.

The incentives of cashmere producers to produce different breeds of goats were tested through a linear programming model of household crop-livestock systems in a semi-pastoral county in Gansu Province reported in (Komarek et al., 2011). Based on parameters collected from surveys and household interviews, the modelling indicates that households have clear incentives to switch from the production of native goats to cashmere goats and, of the cashmere goat breed activities available, maximise profits by selecting Liaoning type goats over Inner Mongolian goats. The analysis suggests that producers have benefited from participation in the cashmere GVC.

Further sensitivity analysis was conducted for the purposes of this paper to ascertain the impact of price-grade differentials on incentives to raise different breeds. One scenario held liveweight and nutrition parameters constant between breeds to isolate the relationships between cashmere yield, quality and price. If no price-grade differentials are paid for the cashmere – as is the case under the current undeveloped marketing system – then due to their higher cashmere yields, Liaoning goats are 13% more profitable than Inner Mongolian goats. Households would have to be paid a premium of 17% for the finer Inner Mongolian cashmere to have incentives to raise that breed. If the quality differentials between the cashmere of Inner Mongolian and Liaoning breeds are comparable to those of Chinese and Mongolian cashmere (20%, as reported in Figure 2), then such a premium may be achievable. This, however, would require a major “upgrading” of the Chinese cashmere marketing system so that premiums that processors are willing to pay are relayed to farm level.

While illustrative, this scenario ignores liveweight and nutrition differentials between the two breeds. This factor is important because meat revenues – realised when breeders are culled and weaners are sold out of the household system – account for a higher proportion (50-60%) of total goat revenues than do cashmere revenues. The annual average increase in “mutton” (goat and sheep meat) prices in Gansu between 2002 and 2010 was 16%, considerably higher than that for cashmere.

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61 Many early-stage processors in Western China have “raw material departments” located in cashmere production regions (Erdos has 16, with 10 people working in each), which act as stations or “points” for traders to deliver to (CAEG field reports 030811 and 9050722p).
62 Clusters such Qinghe in Hebei provide facilities (markets, scales, accommodation etc.) for traders to deliver cashmere to.
63 Komarek et al., (2011) surveyed 96 households in Qingyang Prefecture in Gansu Province and constructed a heterogeneous-agent linear programming model to test optimal agro-pastoral activities in the area.
64 Parameters from the households themselves were used in preference to reported specifications from breed stations and trials, which rarely reflect actual specifications at household level under sub-optimal breed, feed, veterinary and other conditions.
65 Native goats are small-framed but attract a premium of Rmb2/kg liveweight because of consumer preferences for their meat. They also produce fine cashmere (13-14 micron) but yields are low (9300g) and prices are discounted (75%) because of the dark colour of the fibre (CAEG field reports 240409a).
66 Liaoning and Inner Mongolian goats are assumed to have the same liveweights (30 kg for mature breeders and 20kgs for slaughtered male kids / weaners), the same (CP and ME) nutritional requirements, the same mortality, kidding and weaning rates, but different cashmere yields. Inner Mongolian breeders have a (combed, hand-dehaired) cashmere yield of 550g for breeders and 275g for 2.yo kids) and produce 15 micron and 35mm white cashmere. Liaoning breeders have a yield of 641g and kids 320g and produce 16 micron and 45mm white cashmere.
(10% in the Schneider series). Liaoning goats are generally heavier than Inner Mongolian goats and therefore generate high meat revenues, especially in rising markets. Taking weight differentials into account, Liaoning goats are 27% more profitable than Inner Mongolian goats. A very high premium (of 34%) for Inner Mongolian cashmere is required for households to regain incentives to raise Inner Mongolian goats. As these premiums are unlikely to be offered even by the most discerning processor that purchases through the best-functioning marketing system, households are unlikely to select Inner Mongolian goats. Furthermore, even with breeding policies to promote fine cashmere goats, these breeding trends take many generations to reverse, suggesting that the coarsening of the Chinese cashmere clip is likely to continue into the long term future.

While cashmere is becoming coarser in the 20 million genuine cashmere goats in pastoral and semi-pastoral (mostly Western) parts of China, quality issues are even more pronounced for the cashmere produced from the 130 million head of meat goats held in agricultural parts of China in agricultural (mostly eastern and central) parts of China. Goats bred for meat production have an undercoat of downy fibre that is classed as “cashmere” for statistical purposes. While only very small quantities of this down are produced per animal, it can be worthwhile for farmers or traders to comb or fellmonger the down from skins, especially when prices are high. Prices for this down can be as high as Rmb60-100/kg (CAEG field reports 101214). Cashmere derived from these systems account for 7,300 tonnes (or 43%) of China’s “cashmere”. This down is used by Chinese processors on the east coast to produce low value products and for blending to produce what can be labelled as “cashmere” products. Supply-side structures such as this in the agricultural sector pose major implications for product quality and the broader industrial upgrading process.

**Product upgrading**

Product upgrading has been defined as a movement into more sophisticated product lines, defined in terms of increased unit values (Gereffi et al., 2001). Discussion below distinguishes between high-priced products targeted at premium markets and generic products targeted at mass markets. A related aspect of product upgrading – or, more accurately, downgrading – that is particularly important in the cashmere industry is that of mislabelling and product adulteration. The process of product upgrading or downgrading is seen to be driven less by technical capacities and processes than by underlying economic structures and incentives overviewed in the industry sectors above.

Discussion above highlighted a series of economic forces that generate intense financial pressures on Chinese cashmere processing firms. The traditional market for final outputs of the industry – exports to overseas buyers under contract – has remained low-value and then collapsed during the global financial crisis, while the Renminbi appreciated significantly over the period. A tide of market entrants introduced extreme competition to the sector, mainly on cost basis. Cashmere inputs into the processing sector have appreciated significantly, as have other major costs such as labour. The financial pressures faced by cashmere processing are common across the textiles sector.

Some of this pressure may be relieved in the medium term with a rationalisation of the industry through the exit of both large and small firms. A number of large firms have responded to pressures by producing more sophisticated and expensive product lines. This involves investment in world-class processing equipment, laboratories, scientists, design institutes and designers. A select number of Chinese firms use the world’s best cashmere to produce some of the world’s finest and most

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67 Most of this increase occurred in 2007 in line world food price spikes (precisely when cashmere prices dropped), but was followed with another steep increase in 2010 with food price inflation (China Editorial Board of the China Animal Husbandry Yearbook, various years).

68 Liaoning breeders are assumed to weigh 35kg at cull age (6 y.o) and weaners 25 kgs (at 2 y.o), compared to 30kg and 20kg for Inner Mongolian goats. No differences in dressing percentages are assumed. To achieve these weights, Liaoning goats have 15% higher nutrition (crude protein and metabolisable energy) demands.
expensive cashmere products, and have integrated vertically into branding and retailing, especially in the domestic market.

While Chinese firms hope to expand production of these sort of high-value product lines, they make up an unknown but certainly minor part of the overall industry. Even for large firms, the bulk of outputs are still generic products produced for mass markets. This is even more the case for smaller enterprises that can not afford to take the risks and make the outlays associated with product upgrading.

Amongst the factors that has led to the proliferation of low-value products, one of the most important – somewhat ironically – is the high price of cashmere inputs (in unit terms and relative to output values). Processors make major cash outlays in buying inputs (raw cashmere, early-stage or intermediate products) which account for the bulk of their overall costs and are made from working capital reserves. Loans for input purchases can be hard to access in China and lending costs are substantial (unless firms are able to access state storage subsidies mentioned above). Large diversified conglomerates engaged in more lucrative business activities incur a high opportunity cost on capital to purchase large volumes of cashmere. As a result, large companies periodically and unexpectedly withdraw from fibre markets (Cashmere Fibres International, 2008). Small companies operating in clusters seek to manage input costs through intricate informal credit systems and networks (Ruan and Zhang, 2009).

The high cost of cashmere inputs puts firms under pressure to generate returns quickly. Turn-around periods can be long or variable for new and innovative products that require more elaborate development and testing, that have a higher risk of delays in the processing line, and that face an uncertain fashion market. Companies that are vertically integrated into retailing can have expensive stock in storage for long periods. Production on contract to overseas and domestic customers can be a lower cost and lower risk option so is an important part of the overall operations of even by vertically integrated firms. Even for contract processing for the export market, however, there is often a two to three month lag between dispatch and receipt of payment (for processing, shipping, customs etc) (China Wool textile Association, CAEG field report 090505a). Spot sales at marketplaces – especially in clusters overviewed above – provide a faster turn-around period, and cash through which to pay product and credit suppliers in the clusters. For all firms, generic products with mass market appeal provide the lowest risk and fastest turn-around product placement strategies.

In addition to reducing turn-around periods, another way for processors to reduce input costs is to buy low cost inputs. There are various ways of doing this, all of which lead to lower “quality” final cashmere products. Short or weak cashmere can be used (which causes pilling after wear); coarse cashmere can be used (which reduces softness and resilience); poorly dehaired / combed cashmere can be used (causing prickling); or, most importantly, cashmere can be blended with other fibres. Cashmere is blended with a range of other fibres (natural and synthetic) and can also be substituted with fibres from sheep, yaks, camels and angora rabbits, which are invariably lower cost than cashmere. Especially when cashmere prices increase, processors have strong incentives to substitute or adulterate cashmere for other fibres.

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69 European firms have developed systems to deal with this – warp size, turn-around cycles of 6-8 weeks to meet immediate fashions etc.
Various standards are used to define cashmere based predominantly on fibre diameter,\textsuperscript{70} while labels must accurately specify the blend proportions in products. The incidence of mislabelling of cashmere products from China is high in both domestic markets (Anonymous 2010) and international markets,\textsuperscript{71} and is regarded as a serious and endemic problem. Mislabelling and adulteration can be done deliberately by final product producers that apply labels. However, mislabelling can also be done inadvertently, when adulteration takes place in upstream components of the value chain. As outlined above, most cashmere is traded and transformed through a large number of industry actors, all of which have incentives to adulterate the cashmere and cashmere products. While some testing takes place – through testing agencies and within firms – it covers only a minor proportion of products and adds an extra cost to the value chain. Inputs are purchased predominantly through visual, subjective appraisal, which is only a partial indicator of quality characteristics of the cashmere and cashmere products.\textsuperscript{72} In many cases, processors will turn a blind eye, because they can use low-cost inputs and stand a minimal chance of reprimand. There are distinct similarities in this regard to adulteration in other agricultural products including dairy (Gale and Hu 2009) and beef (Waldron \textit{et al.} 2010).

Conclusions

The paper documented the downgrading of the Chinese cashmere industry, in multiple stages of the industry and from a GVC perspective. It may seem paradoxical that industry downgrading has occurred in parallel with China’s increasing market share – indeed dominance – of all stages of the GVC, and in the context of national economic growth. The paper discussed some of the structures and forces that cause this phenomenon from a domestic industry-wide perspective, emphasising relationships between industry sectors and actors, especially processing firms and household producers. The findings concur with those of Ponte and Ewert (2009) that downgrading can be a rational response to the market incentives and institutional environment in which economic agents operate.

The downgrading process of the cashmere industry and the prospect of its continuation is however of particular concern to industry actors, both international and domestic. Downgrading seriously compromises the reputation of cashmere as a high-value fibre, diminishes value-generating opportunities for a range of industry actors in the cashmere GVC into the long-term future, and has significant regional and rural development implications. That is, there are not necessarily winners and losers in the industry-wide up/downgrading process (in a zero sum game) – all industry actors in the GVC can be lose from industry down-grading.

A major finding of the paper is that understanding of the up/downgrading process of GVCs can be enhanced through an industry-wide level of analysis to include cause and effect relationships across

\textsuperscript{70} The limit for cashmere fibre diameter is 25 micron under Chinese standard GB18267, 30 micron under GB/T16988, and 30 micron under US standards. The average fibre diameter for raw cashmere is ≤16 micron under the current GB18267 standard, which will be changed to ≤18.5 micron in the revised standards, more in line with US standards of <19 micron. The coefficient of variation under US standards is <24%, and not specified in Chinese standards. Fibres >30 micron will not exceed 3% of the weight of the product, but not specified in Chinese standards (Tian, 2010). Goat fibre that do not meet these standards are labelled cashgora, while fibres such as pashmina that became popular in the 1990s are not defined in standards at all.

\textsuperscript{71} 60% of textile samples containing specialty fibres investigated at the German Wool Institute between 1990 and 1999 were found to be mislabelled, while the Cashmere and Camel Hair Manufacturers Institute found 15% of garments tested claiming to contain cashmere were mislabelled (Phan Wortmann, 2001). On a related note, a Scottish retailer of tartan products has pleaded guilty to “misleading statement of geographical origin”, saying that the products were made in Scotland rather than in China (Anonymous, 2010).

\textsuperscript{72} Large teams of sorters pick through raw cashmere lots by hand before early-stage processing (combing, dehaired), which is a slow and costly exercise. Once adulterated into intermediate products (scoured cashmere, yarn, fabric), the fibres can not be extracted.
industry sectors. Acutely aware of the need for industry-wide coordination and organisation, China has created a series of institutions in recent years at cross-departmental level,\(^{73}\) at industry-level,\(^{74}\) and for specific purposes including the development of Chinese brands\(^{75}\) and industry standards at national\(^{76}\) and provincial levels.\(^{77}\) While these structures are diverse, in an undeveloped state of development and often in competition with each other, actors in the GVC of cashmere – and more generally GVC analysts interested in the future of Sino-centric GVCs – would be well advised to watch carefully these type of institutional developments.

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\(^{73}\) Wen Jiabao, Premier of the State Council, organised a working party comprised of 8 departments to examine the problems in the cashmere industry and, indeed, issue many of the policies overviewed in this paper (China Animal Husbandry Products marketing Association (CAEG field reports, 090417p).

\(^{74}\) These include: the China Animal Husbandry Products Marketing Association (CABMA) Cashmere and Wool Specialised Sub-association; the China Chamber of Commerce for Import and Export of Foodstuffs, Native Products (CCCFNA) (with a cashmere Sub-group comprised of 40 biggest cashmere processors); and the China Wool Textile Association (CWT).

\(^{75}\) CCCFNA organised a “China Cashmere Major Brands Summit” in 2007

\(^{76}\) At a national level, organisations involved in the standards include: the State Bureau of Quality and Technical Supervision, China Standardisation Management Committee, Central Station of the Ministry of Agriculture) and Fibre Inspection Bureaus.

\(^{77}\) In Inner Mongolia, the (Chinese) Ministry of Science and Technology, the Inner Mongolia Department of Science and Technology and Erdos established the National Cashmere Product Engineering and Technology Centre. In conjunction with the National Textile Products Standardisation Committee, the Centre has established a Cashmere Products Technology sub-committee. In Ningxia, the Ningxia Quality and Technical Supervision Bureau, the Ningxia Fibre Inspection Bureau, and the Ningxia Standardisation Committee established “Cashmere top regional standards”. This was associated with a project of the Zhongying company called “major technical and equipment research in cashmere top production”.

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