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Review of International Production and Global Value Chain Studies: The Case of Turkish Regional Networks

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REVIEW OF INTERNATIONAL PRODUCTION AND GLOBAL VALUE CHAIN STUDIES: THE CASE OF TURKISH REGIONAL NETWORKS

Erkan ERDİL, Hadi Tolga GÖKSİDAN

Abstract

This study focuses on how Turkey's small and medium-sized enterprises (SMEs) can participate in global markets. In fact, developing countries provide a means for accelerating the development of enterprises and countries, providing openings that developing country enterprises can exploit to upgrade their capabilities. For such enterprises, or local clusters of enterprises, the task is to insert themselves into the wider networks. This may be regarded as the main achievement for sustaining competitiveness, in similarities with the re-structuring of regional networks in developing countries that often compete by participating in extensive inter-firm networks. As another dimension in our study, we will investigate and argue whether it is possible to increase and improve the participation of Turkish's SMEs in the global economy, which is explicitly the baseline hypothesis of this study. The literature on regional networks and global value chain (GVC) will provide us some new insights to show the international linkages of Turkish SMEs, which often lack the capabilities to participate effectively in global markets.

I- INTRODUCTION

In the current literature of global economics research, we may depict different insights for competing in a global value chain may build up a foundation for the industrial innovation and learning (eg. Gereffi 1994 and 1999). Eventually, we may also list many ways to achieve to build up this foundation. First, we may underline "process innovation" as a tool to improve the efficiency of transforming inputs into outputs. Only by this way, the internal processes become significantly better than those of rivals, both within links in the chain

(more inventory turnovers, less scrap) and between links (more frequent, smaller and on-time deliveries). Second, we may underline “product innovation” as a leading tool to achieve better quality, lower priced and more differentiated products, as well as shorter times to market for new products. Third, we may underline “functional innovation” as a tool to achieve new responsibilities for new activities in the global value chain. As a fourth, “inter chain innovation” helps enterprises to move into new and more profitable chains.

In developing countries, like Turkey, some enterprises may even latch onto several global value chains, providing further opportunities for linking to local enterprises connected with them. Such SMEs lift themselves— and those connected with them in supply chains—to new levels of performance and quality, driving forward the momentum of collective industrial development.

This article depicts some important effects of GVCs on developing countries as it helps on shifting links and contractual relations among transnational companies and SMEs. Hereby, we expect enterprises to expand their product lines, and to expand internationally by forging new links with enterprises already active in the global economy, encompassing research and development, production, logistics, marketing and exchange, where all the links are between enterprises rather than between countries.

In fact, developing countries provide a means for accelerating the development of enterprises and countries, providing openings that developing country enterprises can exploit to upgrade their capabilities. For such enterprises, or local clusters of enterprises, the task is to insert themselves into the wider networks. This may be regarded as the main achievement for sustaining competitiveness, in similarities with the re-structuring of regional networks in developing countries that often compete by participating in extensive inter-firm networks.

As another dimension in our study, we will investigate and argue whether it is possible to increase and improve the participation of Turkish’s SMEs in the global economy, which is explicitly the baseline hypothesis of this study. The literature on regional networks and

global value chain (GVC), which are mainly focused on analyzing the local sources of competitiveness from vertical and horizontal intra-cluster relationships that generate collective efficiency, has barely investigated the increasing importance of external international linkages. Hence, this study will provide some new insights to show the international linkages of Turkish SMEs, which often lack the capabilities to participate effectively in global markets (e.g. Peres and Stumpo, 2000 and 2002). The following question is central to this study: What can be done to support SMEs' global market linkages regarding the Turkish regional networks?

In developing countries (DCs) like Turkey, the global value chain (GVC) analysis has shown recently how international linkages can play a crucial role in accessing technological knowledge and enhancing learning and innovation (Altenburg, 2006; Gereffi, 1994, 1999; Gereffi and Kaplinsky, 2001; Giuliani et al., 2005; Kaplinsky, 2000; Humphrey & Schmitz, 2002a, b; Pietrobelli and Rabellotti, 2007)

According to Morrison et al. (2008), value chain research focuses explicitly on the nature of the relationships among the various actors involved in the chain, stressing the role that global buyers and producers may play in supporting DC producers' learning and innovation activities, and explores their implications for development. In this respect, the concept of networks among suppliers and buyers is central to this analysis. Related to this contribution, here, we must denote that there has been numerous approaches to favor vertical linkages, knowledge transfer and productivity spillovers among the networks of domestic and foreign firms. With a lesser degree of research on the issue of GVC, in literature, researchers have significantly drawn attention to the variety of value chain relationships wherein global buyers interact with local suppliers in different countries. Saliola and Zanfei (2009) denotes that alternative relationships (governance modes) will emerge in the presence of different degrees of standardization of products and processes, and of different competencies of suppliers.

Hence, as a complementary approach, the aim of this study will, indeed, explore if and how GVC structure fosters knowledge transfer and innovation in developing countries as in the

case of Turkey. The general literature which will be presented on global value chains (Gereffi, 1999; Gereffi and Kaplinsky, 2001) draws attention to the opportunities for local producers to learn from global leaders (buyers or producers) of the chains within different mechanisms of knowledge transfer. This study will construct the scope and pattern of regional networks that facilitates the creation of global linkages in a Turkish SMEs and MNCs perspective. Finally, the study addresses the following specific questions with regard to the specific Turkish case:

1. Are SMEs' global linkages facilitated by the degree of regional networks?
2. How do regional networks embedded to global value chains in such a way that supports organizational learning and strengthens the linkages among SMEs?

II- BASIC DEFINITIONS AND NOTATIONS ON THE THEORY AND APPLICATION: INTERNATIONAL PRODUCTION NETWORKS AND GLOBAL VALUE CHAINS (GVC)

The shift in the structure of international trade poses challenges to both economic theory and policy. The challenge here is to cope with the rise of international capital mobility and trade in intermediate goods with regard to international trade and foreign direct investment. Hence, by sustaining a relative advantage that gives way to compete in global markets, the relative decision making for a (part) of production process; even with respect to foreign investment; highly depend on the interpretation of the application of some externalization theories, simultaneously creating the need for an economic theory of internalization.

In fact, GVC provides two insights about innovation and trade. First, creating value is not confined to only production. In relative advantage that GVCs create, products are brought to market through a combination of activities of transnational companies. By this way, we may argue that enterprises can succeed in improving capabilities in production, developing new capabilities outside production (design and marketing skills), diversifying customers and market destinations, developing the capacity to introduce new products or to imitate leading innovators quickly and successfully.

Besides, as the most important fact, we must denote that the advantage of global value chains is that enterprises can seek involvement at their level of technological competence. For instance, in Turkey, most of the enterprises were vertically integrated in supplier networks that did not offer much scope for skills enhancement and innovation. Hence, the globalization of production comprises both international trade and foreign direct investment with great promise of a new phase of export growth from DCs, whose inclusion in the process opens new markets and introduces new technologies for the enterprises. Moreover, as world trade has expanded, one can easily quantify that the developing countries have fostered their share of services to developing countries (see Table 1) and developing countries have significantly expanded their share of manufactured goods to developing countries.

Table 1: Exports of goods and services as a share of total exports from developed and developing countries

Percentage (%)

	Developed Countries		Developing Countries	
	Exports of goods as a percentage of total exports	Exports of services as a percentage of total exports	Exports of goods as a percentage of total exports	Exports of services as a percentage of total exports
1998	78.3	21.7	83.2	16.8
2012	76.1	23.9	85.9	14.1

Source: DPAD Calculations based on IMF Financial Statistics

This tendency as shown in Table 1 points out that, since the late-1990s, there has been a major rise in the share of developing countries in services exports, and the decline of the share of manufactured goods to developing countries. The table shows us that the share of manufactured goods exports fell from 78.3 per cent in 1998 to 76.1 per cent in 2012. In the same period, the share of developing countries rose from 83.2 per cent to 85.9 percent. Here, we can say that the pace of globalization of production comes with great promise of a new phase of services export growth from developing countries, whose inclusion in the process opens new markets and introduces new technologies. Furthermore, as world trade has expanded, both in absolute terms and in relation to world output, developing countries

have maintained their share of world exports of manufactured goods, while the internalization of production operations have induced the development of asset accounts through foreign direct investment (FDI) as a result of sustaining such internal knowledge assets that enables firms to invest abroad.

Moreover, as an old-established theory and concept in the economics literature, the value chain or value-adding chain has been used most prominently by Porter (1990) and has achieved very wide currency in the management community (Henderson et al. 2002). Simultaneously, in the work of Henderson et al. (2002), it is denoted that the emphasis is intensely on the sequential and interconnected structures of economic activities (like the analysis of different levels of FDI targeted at a different sector) with each link or element in the chain adding value to the process of production networks. Here, it can be denoted that Porter's study may just be considered to be a partial analysis since it is bounded by the firm or inter-firm networks and is barely explaining the effects of the institutional contexts of firm-based activities, or the formation of vertical relations in the embedded network forms.

In this regard, to understand the full scheme of the global dynamics of this progress, one also has to focus on the role of local linkages in generating competitive advantage in developing countries. The sectoral and local scheme on this economic research topic are termed to be exactly the ones in which global buyers (whether agents, retailers or brand-name companies) have come to play an increasingly important role in the organization of global production and distribution systems. Here, once again, we would like to mention that as one of the main literature which analyses these global systems, GVC research is a different approach whether to the question of upgrading, emphasizing cross-border linkages between firms in global production and distribution systems rather than local linkages (see Gereffi and Korzeniewicz, 1994; Gereffi and Kaplinsky, 2001).

Since the GVC approach is weak in explaining local upgrading strategies, in order to solve this dichotomy, one must distinguish between different types of local networks and different types of chains (Humphrey and Schmitz, 2004). Here, through vertical integration among firms, the formation of GVC in a local manner must be exemplified in two respects; local

networks bringing together partners with complementary competences, and vertical relations in which the innovation capability and competence levels were leveraged in favor of the global buyers. We will further investigate whether the governance forms of GVC coincides the upgrading of local firms, explaining why it is important in the case of developing countries.

Very briefly, the extensive work by Gary Gereffi conceptualizes the chain of economic activities as a global commodity chain (GCC) ⁽¹⁾. In his work, the characteristics of the GCC framework have been extensively outlined as:

“...sets of inter-organizational networks clustered around one commodity or product, linking households, enterprises, and states to one another within the world-economy. These networks are situationally specific, socially constructed, and locally integrated, underscoring the social embeddedness of economic organization.” (Gereffi et al., 1994 p.2).

Besides, global value chains (GVC) provide a means for accelerating the development of enterprises and countries by helping to exploit for upgrading their capabilities. For such enterprises, or local clusters of enterprises, the wider aim is to take place in the wider networks. This status requires an initial base of technological capability by default, and generously built upon some purposive innovation and collective learning.

Hence, in an aim to access to worldwide markets and to retain knowledge of other global players in the world economy, generally, SMEs of the developing countries seek involvement at their level of technological competence. For example, in Turkey, machinery producers have weak vertical linkages in globally integrated supplier networks that furnish the required global skills to innovate. However, within the different trade agreements, however, buyer groups from Europe and Asia (inc. some big MNCs) have started to create alternative global value chains that offer SMEs a greater scope for expanding their responsibilities for innovation. Here, as an example, this progress allows white good firms in Turkey to develop some certain capabilities up to higher levels in GVC.

¹ See Gereffi and Korzeniewicz (1994), Gereffi (1995, 1999) and other studies on GCC (e.g. Dicken et al., 2001; Czaban and Henderson, 1998; Whitley, 1996)

Moreover, we might say that some firms are bounded (and embedded into) to several global value chains providing further opportunities for linking other local enterprises that are in any kind of economic relation with them. Such firms (in theory, they are focal firms) simply adopt themselves (and those connected with them in supply chains) to new levels of learning and innovation to achieve the goal of industrial development. As a well known economic and theoretical fact, such industrial learning is a long and strenuous process that in this ongoing process, the GVC offers spontaneous technological and economic structures to link local firms to global networks.

Nevertheless, if we aim to show that the GVC theory is ample to explain industrial development and innovation in developing countries in the context of increased globalization and transnational inter-firm linkages, one must give focus on the regional structures as with the processes of technological capability development and innovation on the firm-level and with the other contextual factors enhancing on the evolution of this process. The studies on technological capabilities (TCs) in developing countries perspectives (see Lall 2001; Pietrobelli, 1998) may also lead to clear understanding for the integration of the GVC literature and for building up an empirical framework to explain local industrial developments in developing countries. Drawing upon the evolutionary approach of Nelson & Winter (1982), the TC literature claims that technological change is the result of purposeful investments undertaken by firms, and therefore transfer and diffusion of knowledge and technology are effective only in so far as they also include elements of capability building.

Moreover, GVC literature can fully exploit the theories of innovation and knowledge in a developing context by explaining the different levels of networking and the degrees of knowledge transfer that affect the GVC governance structure, and the speed of learning on the role of local linkages in generating competitive advantages in export industries. Hence, in terms of the micro-level processes of knowledge transfer, learning and networking, we will issue a number of facts that need to be addressed in this effort. For example, in order to elaborate the theory of GVC, one of the most important facts is what occurs at the firm level, on the mechanisms of learning, networking and innovation, as proposed by the GVC

approach by drawing attention to some regional development strategies focused on some key features of knowledge transfer.

In the following sections of this study, we will deal with the issue of new forms of international organization of more complex production processes arisen from the development of new knowledge-intensive local networks that certainly have brought us about a criticism to the concept of GVC as part of a complementary way of knowledge generation that are highly associated with theoretical economic changes and development in the local and global economy.

Within this context, we will integrate the concept of production networks from a methodological and theoretical perspective that is simply based on two dimensions. These dimensions are:

1. The local and global supplier – buyer linkages among agents in a regional network theory perspective,
2. Knowledge transfer and learning including organizational and institutional perspectives in a knowledge theory perspective.

III- REGIONAL NETWORKS: THE LOCAL LINKAGES AMONG AGENTS

Innovative firms are linked to the outside world by various kinds of connections, in particular, international linkages with customers and suppliers, as a key requirement for successful development of innovations (Doloreux and Parto, 2005). Commonly, networks provide firms a wide range of knowledge sources that not only generates inputs for firms but also sustains their economic activity. Recent contributions by Bathelt et al. (2003), Malecki and Oinas (2000), and Henry and Pitch (2004) among others, have pointed out the importance of local interaction and global connections for understanding the competitive advantages of innovative firms and regional clusters. (Doloreux and Parto 2005)

The concept of regional innovation systems (RIS) focuses on localized learning processes to sustain the competitive advantage of regions. In an aim to develop such policy measures, the RIS framework furnishes firms to develop certain capabilities as well as to improve their business environment. From this standpoint, it should be said that it is crucial to support the creation of interactions between different innovative actors such as between firms (supplier-buyer relations) and universities or research institutes, or between small start-up firms and larger (customer) firms (Doloreux and Parto 2005).

In industrial supplier-buyer relationships, buyers and suppliers together create core competencies in different industrial functioning states. It is also denotable that these competencies may also sustain continuous learning and differing levels of production efficiency. When these competence powers were combined in a network of firms, the networking advantage subsidizes firms to access to critical resources that enable the creation of superior value even in the international marketplace.

To further explain the empirical analysis of network formation and capabilities that influence performance, we propose that an important dimension on which firms differ is the extent of inter-firm (production network) specialization. The performance of a firm is directly related to which the firm and its suppliers make collaborative investments at all. In particular, we argue that firms may develop some certain competitive advantages when they try to participate in a production network characterized by a high degree of inter-firm specialization.

Regarding a brief outlook of historical background of economics and the formation of the production networks in Turkey, we can say that the Turkish national policies related to industrial development locations are stimulating the formation of agglomerations of similar-sector firms. Due to basic networking concerns, SMEs in the manufacturing sector are encouraged to locate in the appropriately planned "small industrial estates" (KSS) and "organized industry zones" (OSB). These places are planned and managed according to different regulations and incentive methods to encourage appropriate firms to locate and operate in these areas. The basic aim in developing this type of formation in regions is to

provide firms with an effective business environment that contributes their competitiveness and eliminates the drawbacks related to infrastructure, bureaucracy etc.

As these locations are the places of agglomeration of firms, they form an environment that the clusters are likely to emerge (or exist) in by market-induced mechanisms such related to Marshallian aspects of the study (Özcan, 1995). Therefore, SMEs in Turkish Economy is attributed great importance and various technological and financial instruments developed for the provision of support (Eraydın and Armatlı, 2005). Since 1996, which was announced as SMEs year in Turkey, the situation of SMEs in Turkey has been handled by great attention. The importance of SMEs in addressing the triple challenge of more growth, greater competitiveness, and more jobs has been brought into ever-sharper focus over the past few years (Kuruüzüm, 1998). Also, the necessity of effective integration of the Turkish SMEs to international economic area also stresses the importance of SME support policies and the need for an effective GVC approach to increase the competitiveness of the Turkish SMEs to compete globally. Unfortunately, one can say while various public policy instruments are employed to support Turkish SMEs, still, the desired levels of competitiveness has yet not achieved (Kuruüzüm, 1998) ⁽²⁾.

Moreover, Eraydın and Armatlı (2005) depicts that the industrial agglomerations, which are denoted as “Turkish production networks” in this thesis, are formed to be an outcome of the economic and spatial transformation that has been taking place in Turkey since the beginning of 1980s. In fact, according to the authors, the 1980s became the turning point of economic policies in Turkey, from protectionist attitudes which dominated Turkish economic policy prior to this period to increasing reliance on market forces. While the new program greatly freed up foreign trade and exchange, in 1984 major structural changes further liberalized trade by dismantling foreign exchange controls and quotas on imports, and by revising tariffs. The liberalization initiative has continued by export promotion policies, by the depreciation of exchange rates and direct subsidies. The efforts of economic transformation are further supported by several private, semi-public and public institutions.

² See the next section to find details on the Turkish competitiveness levels using Global Competitive Index (GCI)

Regionally, the economic transformations, the new competitive environment and the loss of protectionist policies also enforced the spatial transformation in Turkey. While the areas with relatively developed manufacturing capacities became the cores of export activities, hence, the regions with a weak manufacturing basis had obvious difficulties in becoming linked to the newly-organizing international production networks.

In this respect, a pioneering attempt to identify and analyze industry clusters in Turkey is done in the context of "Competitive Advantage of Turkey" (CAT) project, in association and consultancy with the Centre for Middle East Competitive Strategy (Akgüngör, 2003). This project aimed at analyzing the regional concentrations of industries at the mega-level cluster and network analysis applications. The attempts focused on identifying national cluster templates by examining buyer-seller relationships across industries through input-output based analysis. By referring this project, the complementary study by Akgüngör (2003) was to interpret the on-going project results aiming to investigate further regional concentrations of cluster templates and to identify high-point industries within the identified regional clusters. Moreover, in the study, classification of the clusters according to their potential for decline or growth in each of the geographical regions of Turkey is provided. While these initial studies provide valuable policy information for the regional development efforts, as Akgüngör (2003) herself notes, the research should be expanded in order to explore the clusters at the micro level and further explore formal and informal ties across the industries and institutions.

What is striking during this spatial economic transformation is the increasing importance of some industrial agglomerations that are located far from the earlier manufacturing cores, in terms of production and exports. Obviously, these new industrial agglomerations are located in the different parts of Turkey (see Figure 1) and at the different stages of evolution.

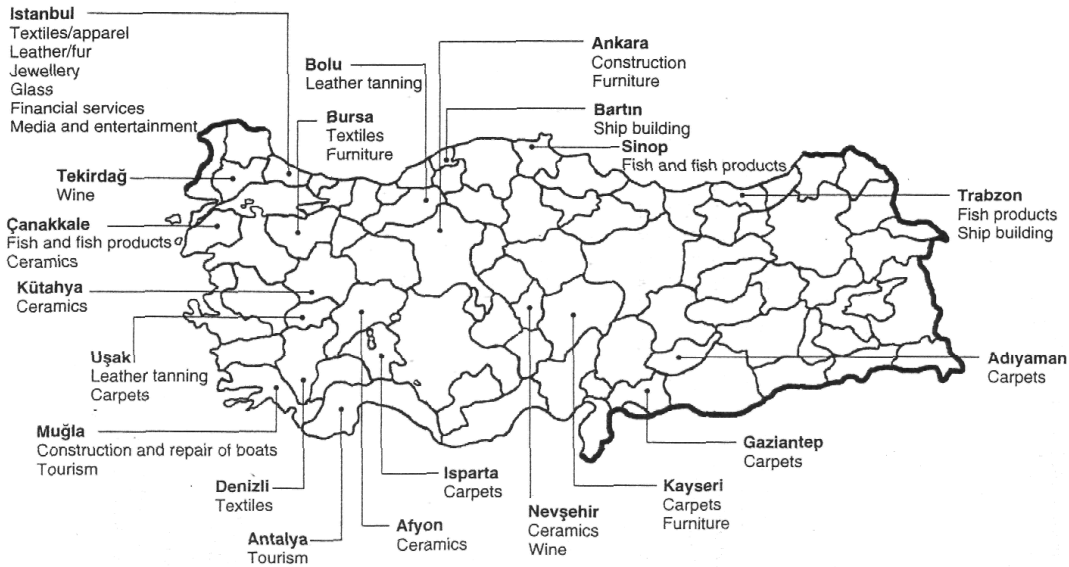


Figure 1: Selected examples of highly concentrated industries in Turkey.

Source: Öz (2004)

The areas designated in Figure 1 (and more studies) have been prepared especially on the areas of Denizli (Eraydin 1998, 2002a, Erendil 1998, Özelçi, 2002, Armatlı-Köroğlu and Beyhan 2003, Öz, 2004), Bursa (Reyhan 1990, Eraydin 1992, 1995, Ersoy 1993, Saraçaoğlu 1993) and recently on Ankara (Tekeli 1994, Dede 1999, Erdil and Göksidan, 2006). As an another focus in this manner, although the clusters experienced in Eraydin and Armatlı's (2005) work do not represent by the authors as idealized industrial districts (or networks); parallel to authors' determinations; the basic characteristics of each production region and network clearly shows us that each formation have different features, and furthermore, will help us to discuss further how productions networks can be supported under different structural aspects of business relations that are strictly important in the formation of networking patterns of relations for a firm located in these areas (see Table 2).

Table 2: Structural characteristics of selected clusters in Turkey: Denizli, Bursa and Ankara

Factors/ Conditions	Denizli	Bursa	Ankara
The type of the manufacturing cluster	Industrial district	Innovative manufacturing cluster	High-tech industrial cluster
Area of specialization	Textiles, especially towels and bathrobes	Textiles for home furnishing	Machinery, electronics, the defence industry and software
The main character of the cluster	Traditional Small artisanal, and highly specialized family owned firms located in close proximity	Traditional/Modern Small Artisanal, and highly specialized firms as well as large multinational companies co-operating with these small enterprises	Modern/High-tech High-tech firms of different size
Main observed benefit	Co-operation in production and marketing for international markets	Collective competition in specialized fields	Weak collaborative environment Market relations with state institutions
Technical dynamic Social capital	Complementarities Collaborative action, trust and reciprocity Strong social networks	Specialization increasing shares of export in engineering industries, Adaptation and product development for international markets	Adaptation of new technologies for national market Access to qualified labor

Source: Eraydın and Armatlı (2005)

Our view is that such network formation among firms and their suppliers involve more complex issues. In this study, we may argue that the Turkish subcontracting supplier – buyer relationships can be portrayed to have three main characteristics.

First, some of the networked relationships are *long-term* and duration is determined by the product-life cycles. Each time a new product is designed and manufactured, the large firm makes a call for the best offer from suppliers. At that stage, suppliers are put into competition. However, the firm generally continues subcontracting relationships with the

same suppliers from a product to another, so that the firms can not solely be affected because of costly and timely renegotiations. Such duration of relationships allows deriving some of the benefits of *vertical integration*.

Second, some of the Turkish networked relationships are *institutionalized* and *hierarchical*. Such hierarchy of subcontractors is defined according to the type of product bought by the large firm. In this case, the subcontractors are autonomously chosen on the basis of quality. We must also mention that the design can also be jointly designated by the supplier and the firm itself. In the latter case, the supplier only executes orders from the firms according to its production definitions, and is highly dependent on the large firm.

Third, the Turkish networked relationships are *contractual* and *characterized by specific procedures*. The generic process (favoring innovation at all) is such that a contractual supplier is agreed, right before the new product is still in the development phase (with no specification of quantities to be delivered, nor the prices, etc.) providing flexibility and adaptation capability to possible changes in the specification of products at any time.

Therefore, the relationship between the networked firm and its suppliers can be characterized by the coexistence of cooperation and competition. Here, competition among rivals and other actors in the network prevails in the suppliers' selection phase, but also after the contract has been signed. Hence, we can say that the performance of suppliers in terms of quality and costs are indeed assessed and compared with other suppliers in the network. If the supplier does not perform well, orders are reduced and, in the last resort, the supplier is supposed to be changed. However, the firm has also interest in cooperating with the supplier to avoid switching and associated costs (time to learn the specification of the product and production, time required to set up trust, etc.) which is a very typical case in the Turkish manufacturing industry. Furthermore, over time, suppliers are expected to share sensitive strategic data on a timely basis. This is the point where trust is needed. When suppliers and customers share information about their R&D expenditures, it encourages the supplier to invest in a customer's future needs. In Turkey, such contractual mechanisms does

rarely work but this is especially critical when suppliers need to contribute on new processes and share tacit knowledge to make an investment in a new technology.

Consequently, manufacturers in Turkey seek suppliers who can help them to sustain their own product design capability and managerial skills, in order to continuously collaborate with, helping to resolve problems and exchanging continuously information in order to improve the system. (Ulusoy, 2003). The know-how generated by such a relationship is, according to Asanuma (1989), twofold. On the one hand, it is technical, regarding the product and production system. On the other hand, it is “relational”, due to the incentives and knowledge creation generated by simultaneous co-operation and competition.

However, the historical development of buyer–supplier relations may also be analyzed better within the context of the national culture. Hofstede's (1984) measures showed Turkish culture to be relatively high in power distance and collectivism. Schwartz's (1994) measures similarly reflected a culture that emphasized tight links with the in-group and hierarchical roles for maintaining societal order. Turkish organizations are distinguished by centralized decision-making, highly personalized, strong leadership, and limited delegation (Ronen, 1986). Turkish managers, likewise, are known for their autocratic and paternalistic styles (Pasa et al., 2001).

Moreover, sometimes, buyers and suppliers may not sufficiently communicate with each other about other significant sourcing and production variables as design, faster time to market, quality, and innovation, which are all crucial to supply-based competitiveness. We can say that the high degree of state involvement in business activity, be it in the form of subsidized credits, input supply or output demand, has been detrimental to the Turkish business environment.

Table 3: Benefits of a Supply Network: Turkish case

Critical Element	Source of Advantage	Characteristics
Product Design and Innovation	Regional cooperation and collaborations between supplier and buyers is encouraged in order to sustain competitive advantages and innovative aspects; if there are fewer suppliers, they must have complementary capabilities for buyers.	Design management are essential for enterprises. Synchronously, enterprises must follow efficient marketing and branding strategy through GVCs.
Manufacturing Scale	Higher volumes of demand from global customers in a GVC perspective may enable manufacturers (and suppliers) to achieve the optimal production scale.	Enterprises must encourage to use commercial capital in order to be a part of transnational companies' supply chain
Manufacturing Factor Costs	It is convenient to exert strategies to develop some certain competitive advantages from industrial locations (for example, low-cost producing countries in a GVC).	Enterprises must designate core competencies; and must enter research and development (R&D) networks, Global Production Networks (GPN) to reduce costs.
Design for Manufacturability	Earlier supplier selection increases the level of strategic knowledge transfer in order to create designs that are faster, easier, and less costly to manufacture.	Non-durable consumer goods play an essential role on transferring knowledge among GVC.
Lean Flow	Cooperation among a supplier and a buyer may simply reduce production and logistics costs.	Local enterprises must network among developed countries
Transaction Costs	Fewer transactions with fewer suppliers and more common terms of contracts significantly reduce cost	Transnational corporations seek for low cost producers and suppliers

Up till now, we have tried to argue how the emerging form of production organization does exist within the Turkish industrial districts in terms of relations with buyers, suppliers and other local and international producers. Moreover, we examined literally and theoretically how these ties are encouraged in the process of upgrading of skills, technologies and products. In order to address these determinations, Table 3 reviews the benefits of a supply network for the Turkish manufacturing firms under the assumptions as discussed above.

To sum up, we have argued that the presence of raw material suppliers and input manufacturers within the regional networks was cited to be a key locational advantage by Turkish manufactures. Moreover, most of the large firms in these districts have also reported to be relying upon local and global input suppliers. Among some of them, large firms are *vertically* integrating the production; in contrast, we may claim that most of the SMEs in the regional networks (or clusters) remained reliant on the local supplier and subcontracting networks. Furthermore, in contrast to SMEs, subcontracting and the local presence of input suppliers is examined in the case of specific literature on lower costs, generate externalities as playing an important role in the process of diffusing knowledge throughout the production network. On the other hand, buyers, particularly those representing international retailers, have an important role in the Turkish industrial districts. As they have acquired substantial technical expertise in the every related industry, this provides them the flexibility to be experienced marketing intermediaries (even to become a source for technical know-how in the production network).

Moreover, we have already denoted that some firms are bounded (and embedded into) to several global value chains providing further opportunities for linking other local enterprises that are in any kind of economic relation with them. Such firms are termed to be focal firms acting as the leading firms in the local innovation network, generating new knowledge and technologies, spinning out innovative companies, attracting researchers, investments and research facilities, enhancing others firms R&D activities, stimulating demand for new knowledge and creating and capturing externalities (Agrawal and Cockburn, 2002; Boari and Lipparini, 1999; Lazerson and Lorenzoni, 1999; Saxenian, 1991). Parallel to the new stages of learning and innovation to achieve the goal of industrial development, finally, we may well

advance the hypothesis that the presence of focal firms in production network substantially increases spillovers at the local level, by creating technologically-advanced new knowledge and favoring the absorption and dissemination of external knowledge into the network parallel to the theory that GVC offers spontaneous technological and economic structures to link local firms to global networks.

IV- INTERNATIONAL PRODUCTION NETWORKS: TYPES OF KNOWLEDGE AND KNOWLEDGE SPILLOVERS

Typically, the knowledge base of traditional industries is highly dependent upon local and tacit forms of knowledge, whereas the knowledge base of firms in high-technology sectors is more codified allowing firms to establish networks to access distant knowledge sources (Vale and Calderia 2006). However, in the most of the prominent work done by economics researchers, the divide local/tacit knowledge and non-local/codified knowledge has been criticized (Gertler, 2003). There are still reports of poor transactions at the inter-company level within networks, as well as examples of companies that do not rely only on local sources to innovate; rather they will often consistently establish distant networks in order to access new knowledge and combine it with local assets.

As a well known economic fact, firms dispose of capabilities to store and to develop knowledge through their rules and routines as well as through specific documentation procedures, as Nelson and Winter (1982) have shown. In recent approaches to the theory of the firm, enterprises have been considered not only as repositories of knowledge, but also as processors of knowledge (Amin and Cohendet 2000).

In the development of firms and regions, the significance of tacit knowledge and codified knowledge has been extensively discussed. Occasionally, a simplified dualism is assumed where tacit knowledge is considered to be in-replicable, providing regions and firms with a continuous advantage of innovation and capability building, while codified knowledge is considered to be clearly available because of its standardization, replicability and codification properties. Consequently, this kind of knowledge is also assumed to create

strong regional and global competitiveness powers. Meanwhile, however, more complex typologies of knowledge transfer and organizational learning along the dimensions of tacit versus codified (and individual versus collective) knowledge recently been developed (e.g., Amin and Cohendet, 1999; Gertler, 2003).

Furthermore, as one of the most important explanations of why innovative activity is geographically concentrated is that knowledge is a crucial element of innovation (Simmie 2002). Here, knowledge, particularly tacit knowledge, spillovers from individual firms and institutions to others in the same place. We may also argue that the successful knowledge transfer happens along in a distance. It is therefore argued that spatial concentrations of knowledge-rich firms and institutions benefit from knowledge spillovers.

We must also denote that the success of organizational learning depends on the firms' absorptive capacity, which itself is determined by the firm's prior related knowledge (see Kim 1998). Here, the definition of knowledge refers to the recipient firms' ability to recognize the value of new knowledge or information, assimilate it, and apply it to commercial ends. (Daghfous 2004). Above action was theoretically labeled as "absorptive capacity" by Cohen and Levinthal (1990). In this regard, recent studies showed us that the knowledge created within firms in an industrial district can be used by other economic agents, because pieces of that knowledge can be codified and transferred among firms; thus generating positive externalities and fostering innovative activities (³). Extending this body of research with a greater attention to the specificities of knowledge flows and their impact at the firm level (Malerba et al, 2003), knowledge spillovers have been defined as public good bounded in space (Breschi and Lissoni, 2001).

According to this approach, most of the knowledge flowing is mainly "tacit", context specific and difficult to codify, and this is particularly true for innovative ideas. As a consequence, it can be primarily transmitted through personal contacts and direct inter-firm relationships. Following the "Marshallian" concept of industrial districts, it is also argued that such knowledge flows better among organizations located in the same area (Krugman, 1991).

³ See Griliches (1979) for the basic theory

Therefore, networked firms have more innovative advantages and opportunities than a scattered location (Breschi and Lissoni, 2000; Saxenian, 1994), and firms located in regions characterized by knowledge-agglomeration processes have greater opportunity to access this knowledge than their distant located competitors.

Consequently, while there were technical limitations that prevented the conventional approaches from unveiling the underlying complex inter-firm relationships and knowledge spillovers in detail, first, social network analysis offered a methodological breakthrough to overcome such limitations (see Nakato 2004).

As a preliminary draft for as to understand the business structure of Turkey, we may depict that Turkey achieved a lowered ranking of 58th in the business sophistication pillar of the Global Competitiveness Index (GCI), particularly for the quality and quantity of networks and supporting industries, below the EU average, and below the states of developing countries like Estonia, the Czech Republic, and Slovenia in Table 4. According to us, this scheme strongly suggests that while Turkey does have a large agricultural sector with rather low productivity, both in relation to the agricultural sector of other recent EU entrants and in relation to other sectors in the Turkish economy; having sophisticated industrial and service sectors; we may not argue whether enterprises are operating at high levels of efficiency, adopting advanced technologies, efficient production processes, nor exploiting economies of scale with respect to their competitors elsewhere in Europe, compared to the new members in central and Eastern Europe. In this respect, the larger the scale of exploitation is, in the developing countries case, we can depict that the social structure among agents (individuals and/or firms) must create the pre-conditions for innovation by building up relational networks in the GVCs.

In this manner, we may also argue that Turkish SMEs' business activities are strongly influenced by the social structure. Accordingly, the networks of relations among them have certainly developed in the entangled chains of manufacturing processes in an organized and complex web of geographically bound, subcontracting business networks. As when a different variety of firms from different sectors were embedded in the Turkish regional

manufacturing systems, firms develop new inter-organizational relationships for the spillover of knowledge and technology in the industrial district they facilitate. Some of the underlying structural and relational patterns may be sorted as Turkish manufacturing firms are embedded in the regional business networks; trust and informal relations are so important in the context of business relations.

From the current research, we can clearly define new range of options to make international comparisons. In the Turkish case, we may depict that there is no common and unidirectional development pattern which have been followed by the new different competitive challenges posed by the globalization of markets and technology. As denoted in the previous part, by the variety of visions on the notion of industrial districts (IDs) in the literature, we may also depict the existence of some enterprise clusters and agglomerations that have been recorded worldwide.

Continuously, an examination of the broad characteristics of the Turkish business environment shows that small and medium-sized enterprises account for more than 90 percent of Turkish firms, but larger firms' contribution to value-added and exports are much higher (Taymaz, 1997). Big corporations are relatively new phenomenon in Turkey: of the 405 TUSIAD member companies, only 22 were established before 1950 (Buğra, 1994). The 1950s were an important decade for many of the largest Turkish companies, reflecting the government's shift to more liberal policies. Many of today's leading Turkish construction firms, for example, were either established or made an important turn in their business during that decade (Öz, 1999).

Moreover, family-dominated management of firms of all sizes is a common phenomenon in Turkey as there is a lack of confidence in salaried managerial personnel. Educating young members of the family in top universities, integrating a professional manager into the family via marriage, and strong relationships established over the years between family members and professional managers, making the latter 'part of the family', appear to be common ways of achieving a delicate balance between professionalization and family control (Buğra, 1994).

According to Buğra (1994), all Turkish business tycoons have certain characteristics in common, including family support in commercial activities at the start of their life-cycle, the arbitrary choice of their initial area of activity, heavy engagement in unrelated diversification as the business grows, and good business relations especially in state circles. Moreover, we might denote that the high degree of state involvement in business activity (in the form of subsidized credits input supply or output demand) has been detrimental to the Turkish business environment. Furthermore, given the key role of government in the economy, we may argue that good connections in governmental approaches have contributed significantly to business success. The slow bureaucracy and unexpected changes in key policies, on the other hand, have caused problems for Turkish business people

Table 4: Global Competitiveness Index (GCI) – Innovation factors and Business Sophistication

Country/Economy	INNOVATION AND SOPHISTICATION FACTORS		PILLARS			
	Rank	Score	11. Business sophistication		12. Innovation	
	Rank	Score	Rank	Score	Rank	Score
Albania	102	3.18	78	3.78	123	2.58
Algeria	136	2.65	135	2.93	132	2.37
Angola	142	2.23	142	2.42	140	2.05
Argentina	77	3.43	79	3.78	78	3.08
Armenia	110	3.09	107	3.43	112	2.74
Australia	26	4.57	29	4.67	22	4.48
Austria	13	5.12	7	5.46	16	4.79
Azerbaijan	67	3.51	73	3.81	60	3.20
Bahrain	46	3.86	33	4.51	61	3.20
Bangladesh	113	3.04	98	3.51	124	2.57
Barbados	47	3.86	41	4.29	49	3.42
Belgium	14	5.06	11	5.30	15	4.83
Belize	131	2.78	116	3.30	135	2.26
Benin	88	3.33	100	3.49	67	3.16
Bolivia	107	3.13	106	3.45	106	2.81
Bosnia and Herzegovina	108	3.13	108	3.42	104	2.84
Botswana	94	3.26	101	3.49	79	3.04
Brazil	35	4.02	31	4.54	44	3.50
Brunei Darussalam	73	3.45	85	3.75	68	3.15
Bulgaria	96	3.24	96	3.55	93	2.94
Burkina Faso	126	2.86	139	2.86	100	2.86
Burundi	140	2.44	141	2.68	138	2.19
Cambodia	91	3.31	90	3.63	85	3.00
Cameroon	101	3.19	113	3.37	81	3.02
Canada	15	4.99	24	4.91	11	5.07
Cape Verde	124	2.87	126	3.14	119	2.61
Chad	130	2.81	136	2.93	114	2.69
Chile	42	3.88	39	4.32	46	3.45
China	31	4.15	37	4.37	29	3.92
Colombia	56	3.85	61	4.04	57	3.26
Costa Rica	36	4.02	35	4.42	35	3.61
Côte d'Ivoire	121	2.92	122	3.23	120	2.60
Croatia	82	3.37	88	3.66	76	3.09
Cyprus	48	3.83	48	4.19	45	3.48
Czech Republic	32	4.09	36	4.42	33	3.77
Denmark	8	5.31	6	5.53	10	5.10
Dominican Republic	109	3.12	89	3.65	122	2.59
Ecuador	103	3.17	93	3.57	110	2.77
Egypt	86	3.33	72	3.82	103	2.84
El Salvador	106	3.14	74	3.81	127	2.46
Estonia	37	3.98	53	4.18	30	3.81
Ethiopia	120	2.92	129	3.09	111	2.76
Finland	4	5.56	9	5.40	3	5.72
France	17	4.93	14	5.14	17	4.72
Gambia, The	81	3.55	66	3.90	62	3.20
Georgia	117	3.01	110	3.39	118	2.62
Germany	5	5.53	4	5.66	7	5.39
Ghana	98	3.20	99	3.51	98	2.89
Greece	81	3.39	77	3.79	88	2.98
Guatemala	63	3.53	55	4.12	91	2.94
Guyana	87	3.33	82	3.77	99	2.89
Haiti	139	2.44	140	2.78	139	2.09
Honduras	90	3.31	81	3.77	101	2.86
Hong Kong SAR	25	4.58	19	4.99	25	4.18
Hungary	52	3.75	69	3.88	34	3.62
Iceland	21	4.67	28	4.69	19	4.65
India	40	3.92	43	4.27	38	3.58
Indonesia	41	3.90	45	4.22	36	3.59
Iran, Islamic Rep.	83	3.37	92	3.59	70	3.15
Ireland	23	4.85	22	4.93	23	4.37
Israel	7	5.32	16	5.11	6	5.53
Italy	30	4.18	26	4.85	43	3.51
Jamaica	84	3.36	75	3.81	94	2.92
Japan	3	5.75	1	5.91	4	5.59
Jordan	70	3.48	68	3.88	77	3.08
Kazakhstan	114	3.04	109	3.42	116	2.67
Kenya	53	3.72	59	4.07	52	3.37
Korea, Rep.	18	4.87	25	4.88	14	4.89
Kuwait	96	3.51	62	4.02	84	3.00
Kyrgyz Republic	138	2.57	127	3.13	141	2.01
Latvia	64	3.53	71	3.84	59	3.21
Lebanon	78	3.43	51	4.17	115	2.68
Lesotho	133	2.69	133	3.00	131	2.38
Lithuania	50	3.78	54	4.13	48	3.43
Luxembourg	20	4.75	21	4.98	21	4.52
Macedonia, FYR	104	3.14	105	3.47	105	2.81
Madagascar	123	2.90	132	3.03	109	2.76
Malawi	85	3.35	97	3.54	85	3.17
Malaysia	22	4.65	20	4.99	24	4.32
Mali	116	3.02	131	3.06	87	2.98
Malta	49	3.83	42	4.28	51	3.38
Mauritania	135	2.67	137	2.93	129	2.41
Mauritius	60	3.62	44	4.27	89	2.96
Mexico	55	3.65	56	4.11	63	3.19
Moldova	127	2.86	117	3.27	128	2.44
Mongolia	112	3.04	119	3.24	102	2.85
Montenegro	59	3.62	70	3.85	50	3.39
Morocco	79	3.40	80	3.78	80	3.02
Mozambique	115	3.02	118	3.26	107	2.79
Namibia	95	3.25	95	3.56	92	2.94
Nepal	132	2.73	125	3.15	134	2.32
Netherlands	9	5.30	5	5.58	12	5.03
New Zealand	28	4.34	30	4.62	27	4.05
Nicaragua	129	2.81	123	3.21	130	2.40
Nigeria	69	3.49	64	3.96	82	3.01
Norway	19	4.78	18	5.04	20	4.53
Oman	44	3.87	40	4.30	47	3.44
Pakistan	72	3.45	76	3.80	75	3.10
Panama	54	3.68	46	4.21	72	3.14
Paraguay	125	2.86	111	3.39	133	2.34
Peru	89	3.32	65	3.93	113	2.72
Philippines	74	3.45	57	4.11	108	2.79
Poland	57	3.64	60	4.06	58	3.23
Portugal	38	3.98	50	4.19	32	3.77
Puerto Rico	29	4.32	27	4.85	31	3.80
Qatar	16	4.98	12	5.27	18	4.69
Romania	99	3.20	102	3.48	95	2.91
Russian Federation	97	3.24	114	3.34	71	3.14
Rwanda	68	3.51	84	3.75	56	3.26
Saudi Arabia	24	4.64	17	5.11	26	4.16
Senegal	62	3.54	66	3.72	53	3.35
Serbia	118	2.99	130	3.08	97	2.90
Singapore	11	5.23	15	5.13	8	5.33
Slovak Republic	71	3.46	63	4.00	96	2.91
Slovenia	45	3.87	49	4.19	40	3.55
South Africa	39	3.93	38	4.32	41	3.53
Spain	33	4.03	34	4.51	39	3.55
Sri Lanka	34	4.03	32	4.54	42	3.52
Suriname	122	2.91	121	3.24	121	2.59
Swaziland	134	2.67	128	3.12	137	2.22
Sweden	2	5.79	2	5.83	2	5.76
Switzerland	1	5.79	3	5.82	1	5.77
Syria	111	3.06	94	3.57	125	2.95
Taiwan, China	10	5.25	13	5.23	9	5.27
Tajikistan	100	3.19	112	3.38	83	3.01
Tanzania	92	3.29	104	3.48	73	3.11
Thailand	51	3.75	47	4.20	54	3.30
Timor-Leste	137	2.59	138	2.92	136	2.26
Trinidad and Tobago	76	3.44	67	3.89	86	2.99
Tunisia	43	3.87	52	4.16	37	3.58
Turkey	58	3.62	58	4.09	69	3.15
Uganda	105	3.14	115	3.33	90	2.95
Ukraine	93	3.29	103	3.48	74	3.11
United Arab Emirates	27	4.43	23	4.91	28	3.96
United Kingdom	12	5.17	8	5.41	13	4.94
United States	6	5.46	10	5.35	5	5.57
Uruguay	65	3.51	63	3.76	55	3.27
Venezuela	128	2.82	124	3.15	126	2.90
Vietnam	75	3.44	67	3.72	66	3.16
Yemen	141	2.33	134	2.98	142	1.68
Zambia	80	3.40	91	3.61	64	3.18
Zimbabwe	119	2.93	120	3.24	117	2.63

(Cont'd.)

Source: Global Competitiveness Index (GCI) – 2011/2012

One another aspect is that the public funding from governmental bodies like TÜBİTAK (The Scientific and Technological Research Council of Turkey) and DPT (State Planning Organization) is to be effectively translated into marketable products and services. We may also depict that the role of businesses is crucial to strengthen the technological and innovation performance of establishments that will eventually tend to support knowledge transfer from other networks of organizations. In theoretical conditions, knowledge transfer requires the right economic environment to support and stimulate business to link with suppliers, customers and the research base. These linkages will primarily be created and financed by industry. But, we would like to mention that there is a key role for Turkish Government to help managing the business markets in particular activities or regions, and investing strategically in new strands of science and technology. In this regard, the private sector must also overlap with university research. As equally, universities and the public sector must assess the realistic opportunities for the commercial exploitation of their research, and an understanding of the priorities and needs of the private sector.

V- SUMMARY

In this article, we have presented some clues for the developing countries based on GVC and GCI index in such a reasoning that entering global value chains may not provide an automatic move up the capability ladder. The process must start with a fast track recording in regional networks to acquire new production capabilities. In the Turkish case, we may see relative explanations for some enterprises to have their capabilities downgraded as a result of their integration in global value chains. So, it makes sense for latecomers to use all the resources they can acquire first from regional networks and on the following, from the developed countries, in return for providing such services as low-cost manufacturing. But, one must not forget that the services tradeoff can be exploited to the advantage of the developing countries only if there is a strategic choice to use the links to gain knowledge to learn.

Moreover, innovation activities within global value chains may move along two dimensions of leverage strategies: services expansion in regional networks and acquisition of technological capabilities from developed countries.

Hence, in this generic scheme, we can say that Turkey is favored by its large internal markets, but also shows the benefits of the recent microeconomic reforms promoting regional networks and global competition, simultaneously. As also demonstrated by the variety of product specializations of SMEs in Turkey, we may also argue that the degree of complexity of organizational and network systems and the scope - variety of inter-firm Turkish organizations are continuously expanding, in relation to the globalization of technology and the increasing internationalization and localization of economic activities; but, not at the desired levels of inclusion to GVCs compared with the GCI business sophistication statistics.

As the last of our discussions, we may depict that inserting an enterprise or local cluster into a global value chain is an important step, nevertheless, the small enterprises or clusters does not have to see its horizons limited. Enterprises must always seek ways of spreading its involvement across two or more global value chains, as they have to expand its options and capabilities, simultaneously. Only by this way, we argue that enterprises may leverage skills, enhance capabilities and reduce the risk of being tied to a single global value chain.

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