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Integrated Trade with Disintegrated Production in the Context of Global Value Chains

Summary

The objective of this paper is to show how the global value chain (GVC) concept has spread since the early 2000s. The article assumes that GVC is no longer just a concept or an analytical framework; rather that a new type of business unit has emerged. The article is based on the literature comparison which served to search the main decision-making criteria. The article found that the main decision-making criteria are based on the economies of a network, behind which the spirit of informationalism can be found. The connection between Powell's stylized models of markets, hierarchy, networks and Gereffi's theoretical framework of governance structure at GVCs was discovered. The Powell-Gereffi combined model represents clearly described modalities of governance. The paper asks whether the entire economic system is covered by the Powell-Gereffi division. Kornai and Braudel both recognized the routine functioning of the basic-economy, without which the whole economy would lose its stability. It is necessary to formulate how this vegetative or infra-economy relates to the GVCs and to our globalized world economy. The article interprets the Smile Curve, and determines a possible way of measuring the distortion of smile.

KEYWORDS

network, global value chain (GVC), infra-economy, geopolitics, geoeconomics

INTEGRACJA HANDLU A DEZINTEGRACJA
PRODUKCJI W KONTEKŚCIE GLOBALNEGO
ŁAŃCUCHA WARTOŚCI

Streszczenie

Celem niniejszego artykułu jest pokazanie, w jaki sposób koncepcja globalnego łańcucha wartości (GVC) rozprzestrzenił się od początku 2000 roku. W artykule założono, że GVC nie jest już tylko pojęciem lub ramy analityczne; raczej, że nowy typ jednostki gospodarczej pojawiło. Artykuł jest oparty na porównaniu literatury, który służył do wyszukiwania głównych kryteriów podejmowania decyzji. W artykule stwierdzono, że główne kryteria podejmowania decyzji w oparciu o gospodarkach sieci, za którą duch informacjonalizmu można znaleźć. Połączenie między stylizowanych modeli Powella rynków, hierarchia, sieci i teoretyczne ramy Gereffi w struktury zarządzania w GVCs została odkryta. Powell-Gereffi połączeniu modelu reprezentuje jasno opisane sposoby rządzenia. Papier pyta, czy cały system gospodarczy jest objęte podziałem Powell-Gereffi. Kornai i Braudel zarówno uznane rutynowego funkcjonowania gospodarki podstawowej, bez którego cała gospodarka straci stabilność. Konieczne jest sformułowanie jak to roślinny lub infra-gospodarka dotyczy GVCs i naszej zglobalizowanej gospodarce światowej. W artykule interpretuje krzywą uśmiech (the Smile Curve), i określa możliwy sposób pomiaru zakłóceń uśmiechem.

SŁOWA KLUCZOWE

sieć, globalny łańcuch wartości (GVC), geopolityka, geogospodarka

INTRODUCTION

The emerging, spreading and strengthening of global value chains means we have reached a new stage of economic globalisation. This new characteristic of globalisation explains why the GVC-topic is important. The value chains extend far beyond national borders; we

cannot properly measure the impact of economic globalisation, cannot use its advantages and avoid its disadvantages without knowing the most influential players, and their strategy-making processes.

The objective of this paper is to show how the global value chain (GVC) concept has spread since the early 2000s. Nowadays GVC is no longer just a concept or an analytical framework, but it is a new form of business with a specific strategy. The starting point of this conceptual paper will be a short literature review as well as the review of economic history in the range of the selected phenomena followed by the mentioning of important facts. Finally, we combine analysis of the network economy with economic structural analysis.

THE CONCEPT OF GLOBAL VALUE CHAIN (GVC)

The term of value chain was introduced by Porter (1985). His book, *Competitive Advantage: Creating and Sustaining Superior Performance* described the activities within and around an organisation. The essence of this concept is based on the process view of a managerial controlled organization; it is an analytical instrument for examining the performance of the company. The value chain framework analyses the sequential stream of activities, and states the importance of the different activities in delivering the final product or service, identifying the primary (core) and the secondary (non-core, support) activities. The entire company is one value chain, with more or less stable, well defined boundaries. These separate and connect two types of transactions: the external market-based transactions, which are corollaries of market contracts and the internal transactions, which occur as managerial instructions inside the firm boundaries.

The series of firm-level value chains is the supply chain; it represents the total material flow of natural resources, components, intermediaries and production to the ultimate consumers. This conceptual paper should show how and why the global value chain (GVC) concept could spread since the early 2000s.

The term of value chain was followed by the term of Global Value Chain. In the business literature it was preceded (OECD, 2013a) in chronological order by the following phrases in the last two decades of 20th century: multistage production, international fragmentation,

global production sharing, vertical specialisation, off-shoring and outsourcing. The international expansion and geographical fragmentation of the supply chains was obvious, so Gereffi (1994) set up the concept of global commodity chains, which emphasises the internal governance structure of supply chains. His distinction between producer-driven supply chains (like Gap, Nike) and buyer-driven supply chains (as Ford, Compaq) stresses the role of diverse lead firms in setting up global production and sourcing networks: labour-intensive production on one side and technology-intensive production on the other side.

In September 2000, 14 researchers gathered in the Rockefeller Center in Bellagio, Italy for a workshop, sponsored by the Rockefeller Foundation. The aim was to constitute a standard set of terms and develop a common framework for value chain research. Porter's framework was stated (Gereffi, Humphrey, Kaplinsky & Sturgeon, 2001:2) to be:

...a set of inter-linked 'complete' firms that have all the business functions. One of the main virtues of the value chain perspective as utilised by other researchers is that it allows us to think about 'incomplete' firms that have specialised in certain value chain functions, such as design or marketing. By focusing on the chain or organisational network as the unit of analysis, rather than the firm, interesting questions about power, governance and the dynamics of chains emerge.

In the mid-1980s Porter (1985) saw the value chain as the managerial decision support tools, an analytical framework in search of competitive advantage. Since the 1980's worldwide and international implementation became the pillar of the network economy. OECD states in their 2013 publication:

The international fragmentation of production in global value chains (GVCs) challenges the way we look at the global economy. It is essential to understand how GVCs work... OECD (2013b:3)

With reference to the above named sources, our definition for GVC is as follows: the global value chain covers worldwide all activities from the idea of the producer to the consumption of the end-user and beyond. This definition gives us two different opportunities for further consideration. First: what does the phrase 'beyond' mean?

In this paper we can describe only the regenerative economic model and the closed loop supply chain (Dobos-Szalay, 2001). The essence of the latter is: this type of supply chain fully recycles all materials (through reusing and composting), the technical and biological nutrients circle in an integrated system, each circle supports the other and there is no waste. If we think about the regenerative model as an extended, global value chain, this chain would have a negative footprint.

The second consideration means that the upper definition underlines the role of those changes which could be described as follows:

With the strengthening of GVCs the trade in goods was replaced gradually by the trade in tasks. Timmer and his colleagues introduced a new indicator, 'GVC Income' to measure the competitiveness of the countries: "*Income generated in a country by participating in global manufacturing production, abbreviated by the term GVC Income.*" (Timmer, Erumban, Los, Stehrer & Vries, 2012:3). It includes the total contribution of a country to global production of final goods. This indicator explains why China captures as income only a small part of the value of the production process of iPods. Gereffi (2012) states: "*China assembles all iPods, but it only gets about \$4 per unit – or just over 1% of the US retail price of \$300.*"

The Visegrád Group, or V4 as the alliance of four Central European states (Czech Republic, Hungary, Poland and Slovakia) during and beyond their economic transition process, gives us a suitable, analysable scene to search the GVC phenomenon. Grodzicki (2014) searched the position of the Visegrád Group Economies in the GVC of manufacturing goods. His study is based on the World Input-Output Database (WIOD), and formulated three sectoral pattern-clusters with different GVC-competitiveness position: (1) resourced based and chemicals industries, (2) traditional industries and last (3) modern industries.

In summary, we state, that the global-scale value chain is no longer just a concept or an analytical framework. It has become one of the key factors of the competitiveness of countries. With a difference in size of GVC a qualitative change has also occurred. Companies unbundled their value chain which was defined by a previous legal framework. They have outsourced their value-chain fragments to external partners, making the relationship a major factor in the

value chain. So the value chain became dispersed across the world, the activities in a value-chain network could be performed by one legally single or several companies. Interconnected design, assembly, delivery, marketing, service, etc. firms build the global value chain.

SOME DRIVERS AND MOMENTUMS OF THE GVCS SPREADING

In search for a competitive advantage, the managerial thinking transformed the concept of the value chain into a new structured phenomenon, a very influential network. Referring to the 2013 OECD publication, we will review the drivers behind the GVCs spreading. Our analysis takes into account Castells' statement (Castells, 1998) about the rise of the network society and Gereffi's typology, too (Gereffi, 1994). The following drivers are usually mentioned in the literature:

- embedded in the information, global and networked new economy,
- essential business and regulatory prerequisites,
- the development of information and community technology (ICT).

(a) Embedded in the information, global and networked new economy

GVCs are the key actors of the new economy formed in the last decades of the 20th century. This new economy has three main features, all of which characterizes GVCs too. This type of economy and GVCs as well are informational, because the viability of the whole ecosystem and that of its actors (which manifests itself in productivity and competitiveness) is determined by information processing capacity. The second feature is globalism, because the core activities of production, consumption, and circulation with their constituent parts are organized on global scale. Finally, the new economy created by GVCs is networked, because the above mentioned viability is manifested in the global network of interaction between business networks, i.e. all

interactions are either networked or connected to a network Castells (1998).

The rise of the business network was facilitated by the circles of the vertical corporation model. According to Castells it was necessary to disintegrate

the organisational model of vertical, rational bureaucracies, characteristic of the large corporation under the conditions of standardized mass production and oligopolistic markets Castells (1998:179).

A possible organizational solution is the networking of the networks. After “Fordism” and “Toyotism” the business model of information and communication technologies (ICTs) based economy is applied (Jain-Raghunath, 2013:265) A new type of business unit has emerged – the network enterprise. It is neither individual nor collective; it is made up of a variety of subjects and organizations. The network enterprise is associated with a new type of thinking, which is a consequence of the *spirit of informationalism – using Castells’ phrase after Weber’s spirit of capitalism* (Castells, 1998)

(b) Essential business and regulatory prerequisites

In the last decades of the 20th century production became fragmented for several reasons. Primarily the business and regulatory environment became ready for receiving new direct investments in emerging countries. Business thinking has transformed by the change of the regulatory environment which was connected to the policy prescriptions of the Washington Consensus. During the last decades of the 20th century, two events occurred at the same time: the rise of the neo-liberalism and the marketisation of transition countries. The transition from the dirigisme to the *neoliberal orthodoxy of the 1980s and 1990s* coincided with the expansion of the GVC literature. *The embeddedness – states Kaplinsky (2013:15) – “is a core component of GVC dynamics is because it sharpens the focus on ownership.”* Viewing firms exclusively as homogenous entities driven by market parameters, neglects the national identity. The rootedness in the local economy increases the sustainability of the GVC-production.

(c) Development of information and community technology (ICT)

The development of information and community technology (ICT) decreased the trade costs, but falling international transportation costs coupled with the trade liberalization contributed even more to this reduction. The reduction of fuel costs cannot be said to be permanent and perpetual. Our contemporary economy is based on oil, so every change in the available quantity and distribution structure affects the network of the GVC. The *effectiveness of a spatial network* represents a crucial component of GVC governance. In the case of more and more services, transportation can be replaced by simple communication, which is done via Internet, at minimal cost. The other ICT-related phenomenon is that the range of tradable services is expanding. Goeltz states that the communication technologies have made markets more homogenous, brought markets closer, and enabled mass customization (Goeltz, 2014). Consequently a market expansion occurs in society, which has an impact on everyday people's lives as well.

AN EARLY DIFFERENCE BETWEEN A PRODUCER – AND BUYER-DRIVEN CHAIN

The offshore activity, and consequently the GVC-network-building, is different by Gereffi's distinction in the case of a producer-driven chain network and a buyer-driven chain network. Gereffi's terminology uses abbreviation: producer-driven network and buyer-driven network. They have different construction algorithms, which could be illustrated by the Smile Curve. The term was formulated by Stan Shih, the founder of the Acer IT Company in the early 1990s, interpreted *inter alia* by Baldwin (2012), by De Backer (2013) and by Szalavetz (2013). It illustrates the sum of value-added at different stages – it has three trimesters – in the value chain.

At the producer-driven network (in technology-intensive sectors, like automobiles) the MNEs coordinate the network, its backward and forward linkages. The spirit of this type of network, the organizing

power of the network is in the product embedded knowledge. High skilled workers, intellectual property etc. are very important. De Backer calls these elements in the first trimesters of Smile Curve as the “*pre-production intangible*” (De Backer, 2013:26); they create the first part of the so-called Smile Curve on Figure 1: the product concept, the design and R&D. The profitability of lead firms at the producer-driven network arises from their control over technical knowhow.

In contrast, in the buyer-driven network (labour-intensive goods such as garments, toy, etc.) retail-companies control the network. The spirit of the buyer-driven network, i.e. the organizing power of the network, is in purchasing power deployment embodied knowledge. The low cost of labour and marketing are very important. De Backer calls these post-production phase elements in the third trimesters of the Smile Curve as “*post-production intangible*” De Backer (2013:26); they constitute the third phase on Figure 1: sales, marketing after sales services. The profitability at the buyer-driven chain arises from combinations of high market research and design, marketing and financial services.

Depending on where the lead firm is and what kind of stages are in its competencies, the shape of the Smile Curve changes. Szalavetz (2013) has examined the characteristics of the Smile Curve at nine service-type businesses in Hungary in her paper, titled *Captive Offshoring of Functions – Functional Upgrading at Manufacturing MNCs’ Hungarian Subsidiaries*.

EXPLOITING THE POWER OF NETWORK

The phrase “Exploiting the power of network” is from Barabási’s work, titled “*Linked*”, (Barabási, 2002:214) with the subtitle: “*How Everything is connected to Everything Else and What it means for Business, Science, and Everyday Life*”. Barabási used the above term for the characterization of the rapid success of Hotmail’s service in 1996 (this company’s strategy was built on the Internet). Our starting line: the definition of companies has changed. Instead of companies being discrete actors, power structures act as a business decision (Barabási, 2002).

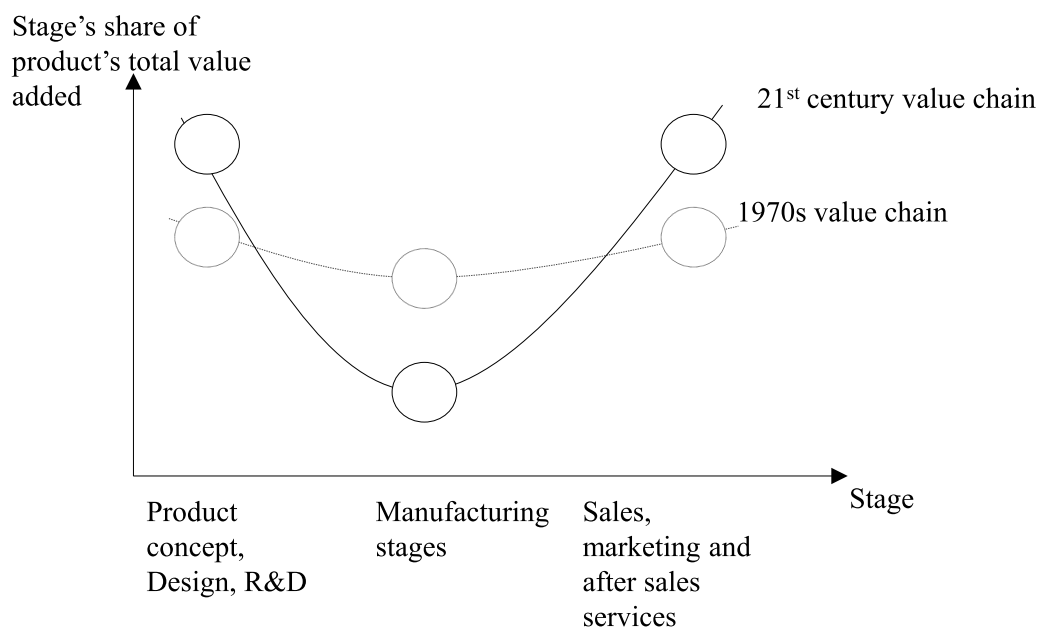
(a) Spatial and temporal separation: the first unbundling phase

This phenomenon is part of an economic development process that has been going on for two centuries. It began by unbundling the whole socio-economic circle. It separated spatially and temporally two parts: production and consumption (Baldwin, 2009). The driver of this process was the seeking of comparative advantage during production. The limit to be considered was double folded for enterprises: on the one hand the decline of the delivery cost through the history of economy; on the other hand, the increase of the coordination cost. The decision-making criteria of this first phase of unbundling were the economies of scale and scope. The vertical integration of production was strong; the valued added structure was balanced, the 'Smile Curve' (see Figure 1) was almost a straight line, the tangible assets of the manufacturing stages were valued higher than the intangible assets of pre- and post-production. According to Baldwin:

Porter's main thought was to apply the Ricardian principle of comparative advantage to firm's value chains. He told firms to focus on what they do best and to outsource for the rest (Baldwin, 2012:13).

The macroeconomic-level interpreted comparative advantage (Ricardo, 1817) could be seen here as an enterprise-wide recommendation, maintaining the competitiveness, i.e. maintaining the competitive advantage. This statement also confirms our above formulated finding that in the first unbundling phase the vertical integration of production stages is dominant.

Figure 1. Smile curve of value added structure



Source: adapted from Baldwin (2012: 18)

(b) Core-periphery network economy: the second unbundling phase

With the roaring nineties the world entered the information age – Castells names it informationalism. Information became the main resource, due to the development of the ICT, with the result that the above mentioned coordination cost, as a barrier, dissolved: communication cost declined. The influence of intangible assets increased vastly. With a rough simplification we can say: intangible assets equal tangible assets plus information. The first unbundling phase converted to the second, while the conditions created by the first phase remained true as well, i.e. the consumer and the producer are separated, and an extra entrepreneurial activity is needed to build the relationship with the consumers. The nature of the second unbundling phase is folded to keep the well-controlled vertical integration. On the surface it may appear as the disverticalisation of production; in reality, it replaces previous forms with those that are new. We call this new form of integration as *networked integration*,

which is multidimensional. With outsourcing and off-shoring the MNEs changed from being producers to being project coordinators. The specific know-how of the pre-production stage and the post-production stage, e.g. the design, the intellectual property rights, the brand management, etc., became necessary for a company to be far more than just a set of stones and irons.

The Smile Curve of the value added structure shows the unbundling phases. In the second unbundling phase the Smile Curve has deepened. The manufacturing stages involve less value added compared to the pre- and post-product stages. The off-shoring of the assembly to low-labour countries does not fully explain the difference, because in this case we consider only the direct (labour) costs. The increasing importance of intangible assets and market dominance are the crucial factors. The assembly location (which could be outsourced or off-shored activities or both) is variable; they are organized in networks, governed by the headquarters. The pre- and post-product stages are unique. So these remain (together with the coordinating function of the network) in strong control of the headquarters. With the creation of multidimensional networked integration, the operation of the global value chain governance demands a high level entrepreneur.

As the decision-making criteria of the first unbundling phase were the economies of scale and scope, similarly the decision-making criteria of the second phase were the economies of network. This paper cannot analyse the GVC based on the recent network theory, but we should mention Barabási's related statement:

In reality, the market is nothing but a direct network. Companies, firms, corporations, financial institutions, governments, and all potential economic players are the nodes. Links quantify various interactions between these institutions, involving purchases and sales, joint research and marketing projects, and so forth. The weight of the links captures the value of the transaction... Barabási (2002:208).

CHARACTERISTICS OF GVC AS NETWORK COMPARED TO MARKET AND HIERARCHY

In the last part of our paper we want to deal with the role of the GVC in the whole economy from a governance point of view. Our starting point is the different forms of economic governance. Barabási (2002) calls attention to Powell's paper (Powell, 1990), titled as *Neither market nor hierarchy: Network forms of organization*, which analyses the forms of networks. In that paper Powell shows a table (Powell, 1990:300), about the stylized comparison of forms of economic organization, i.e. of market, hierarchy and network. Whereas we regard GVCs, as networks in Table 1 we wanted to quote Powell's comparative table in a modified way. We added one more aspect: the strategy of the parties.

Table 1. Stylized comparison of forms of economic organization

Key features of parties	Market	GVC, as network	Hierarchy
Normative basis	Contract – property rights	Complementary strengths	Employment relationship
Main type of information	Prices	Relational Direct information on demands (upwards) and possibilities (downwards)	Routines Upwards: instruction Downwards: reports
Methods of conflicts resolution	Haggling – Resort to courts for enforcement	Norm of reciprocity – reputational concerns	Administrative fiat – Supervision
Degree of flexibility	High	Medium	Low
Amount of commitment among the parties	Low	Medium to high	Medium to high
Tone or climate	Precision and/or suspicion	Open-ended, mutual benefits	Formal, bureaucratic

Actor preferences or choices	Independent	Asymmetric dependence	Dependent
Strategy (long-term considerations)	Competitive advantage	Comparative advantage	Sustainable role
Strategy (short-term considerations)	Profit	individual rent – network rent	Effective Influence
Mixed of Forms (Appendix)	Repeat transactions (Geertz, 1978) Contracts as hierarchical documents (Stinchcombe, 1985)	Status hierarchies Multiply partners Formal rules Modular, relational and captive (see: Gereffi et al. 2005)	Informal organization (Dalton, 1957) Market-like features: profit centres, transfer pricing (Eccles, 1985)

Source: Powell (1990), modified by the author

Two things should be emphasized when reviewing the table:

- i. Each column of the table shows a different form of economic organization.
- ii. If the key features of the parties change, i.e. the participants pick up the characteristic of the other forms, than we get mixed forms of economic organization.

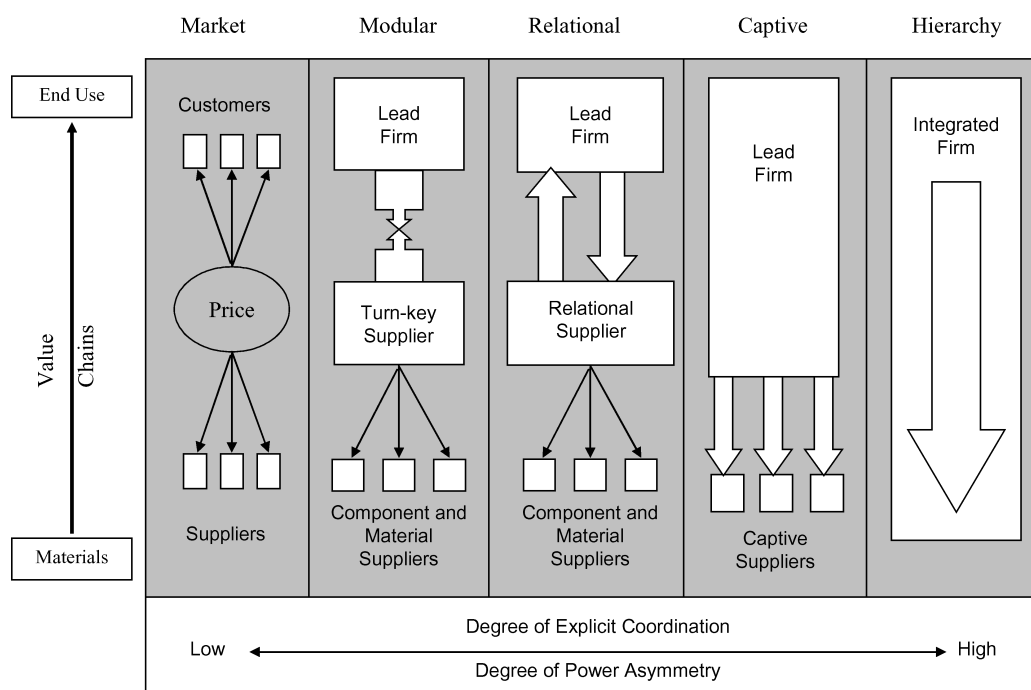
Based on the previous part of this paper, it is obvious that there are several GVCs and they appear in diverse structures, thus we added further *mixed forms* in italics (modular, relational and captive) to Table 1– with reference to work of Gereffi and his colleges (Gereffi, Humphrey & Sturgeon, 2005).

We can state the following about GVCs: the participants or parties are characterized by its complementary strengths, where the phrase ‘complementary’ means the relationship to the whole.

The last line in Table 1 contains the mixed forms, which are the result of the changing of one or more features. We kept those authors which Powell mentions. In the column of network Powell does not mentioned anybody’s name. Fifteen years after Powell’s paper Gereffi and his colleges published their theoretical framework (Gereffi et al., 2005) about governance patterns in global value chains. They found that three variables play a large role in determining how global value

chains are governed and changed. These are: (1) the complexity of transactions, (2) the ability to codify transactions, and (3) the capabilities in the supply-base. The theory generates five types of global value chain governance – market, modular, relational, captive, and hierarchy – which range from low to high levels of explicit coordination and power asymmetry.

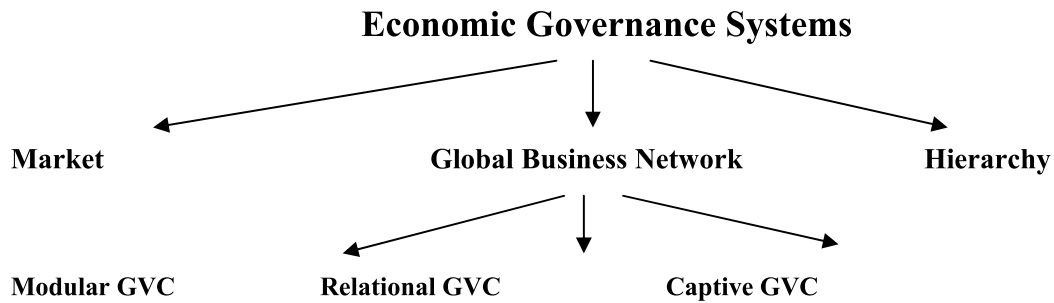
Figure 2: Gereffi’s five GVC governance types



Source: Gereffi et al. (2005)

Figure 2 shows Gereffi’s five GVC governance types (Powell himself repeatedly used in his analysis the “governance structure” phrase). Gereffi’s and Powell’s systems can be regarded as complementary systems: the first (market) and the last (hierarchy) structures are the same. The modular, the relational and the captive governance types fit fairly well into Powell’s middle economic organization. Thus a new combined model is created, which includes the following economic organizations/institutions, each of which represents well described modalities of governance.

Figure 3. Combined Structure of Economic Governance Systems



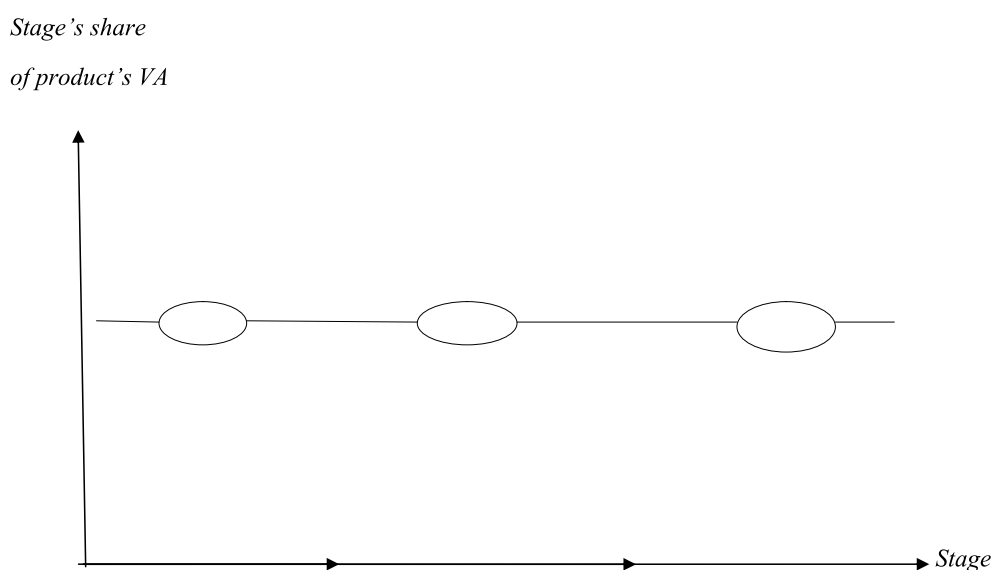
Source: own study.

FROM SMILE CURVE TO THE SMIRK CURVE

It is worth considering how to fit the above mentioned Smile Curve onto the Combined Structure of Economic Governance Systems or at least to Gereffi's five GVC governance types. Both ordered the sub-systems by power asymmetry. A perfect market the curve is a straight line (see Figure 4.) The parties of all of three trimesters get their average value added. Two comments can be made: (1) Historically it could have happened only before the 1st unbundling phase; (2) what the first trimester contained was mostly negligible.

But the medieval long-distance trade of spices and luxury goods already separated the producer and the consumer; it put the latter in a captive relationship. The Smile Curve at the border of the second and third trimesters turns from being a horizontal line into one that is almost vertical.

Figure 4.: The Smile Curve on the perfect market



Source: own study.

We need to justify two modifications to the curve: the deepening and the distortion either to the right or to the left directions; i.e., to change it to an ironic smile, or a smirk. The deepening is well explained by Baldwin's unbundling-theory.

Szalavetz (2013) mentions the distortion of the Smile Curve at the captive GVC governance type. A similar statement can be made in the case of the hierarchy. Szalavetz's statement is based on empirical data. It remains an open question how to change the curve at the two other types of GVC governance, namely at the modular and the relational? How could we measure the distortion of the smile? What determines the size of the distortion? The main question is: how is the total, i.e. network-level value added, redistributed. The parties are dependent of each other to varying degrees. How large an amount needs to be paid to stay inside the chain? The *economies of network* mentioned in the first part of our paper should be valid. For the non-leader parties, being in the network should have a comparative advantage compared to staying outside. This is one side of the connection. If we regard the GVC governance type as a redistributive model, the following is important: the leading firm can claim only as much network tax, to leave enough for the others to maintain their economic viability. This is the other side of the connection.

The power asymmetry is measurable with the added value flowing to the firm (compared to total value added). Our hypothesis is that the limit of the ratio of the value added flowing to the leader firm determines the degree of power asymmetry.

The distortion of the Smile Curve is proportional to the degree of power asymmetry. So we can answer what determines the size of distortion. We call the degree of distortion as the degree of smirk. Naturally all this should be mathematically derived and statistically proven.

DISCUSSION

In order to prove the statement that the GVC by the 21st century is no longer just a concept or an analytical framework, we have shown the history of the GVC from concept to economic structure. We argued that the main decision-making criteria of GVCs are based on the economies of network. While searching the connection between Powell's stylized models of markets, hierarchy, networks and Gereffi's theoretical framework of governance structure, we compared the GVC-structure to market and hierarchy by examining 10 features, and we built a combined structure of economic governance systems. (Our hypothesis about the degree of dependency in the GVC has to be proved). In the end we must ask: Is the entire economic system covered by this division? Is there any phenomenon in the past or in the present that could not be described with any of the above mentioned governance systems? Our paper cannot fully respond the question; this will be the topic of the next paper. Until then, for a further conclusion we would like to draw attention to János Kornai's and Fernand Braudel's thoughts.

CONCLUSIONS

Kornai has written about autonomous (vegetative) control with co-author Martos in 1971:

A further characteristic of vegetative functioning is its simplicity – we might say its primitive nature. Here we are talking about trivial

phenomena familiar to everyone; so far, however, economic theory has not given it much consideration [...] Just as the elementary functioning of the living organism (blood circulation and respiration, for example) is not controlled by conscious acts of the central nervous system, but by the autonomous nervous system, the elementary functions (emphasis by Z.E.Sz.) of the economic system are guided by autonomous control... (Kornai-Martos, 1971; in English: Kornai-Martos, 1981:60).

According to Kornai at the autonomous control the price-type information is unimportant; it has simple behavioral – rules (which rely mostly on habits) and they are mixed up with the others rules. At the end of his study the conclusion is:

Autonomous control is able in itself (emphasis by Szalay) to make the real sphere function and, more than a mere stagnation or “vegetation”, may even ensure a certain progress (Kornai-Martos,1981:78).

Braudel’s term ‘infra-economy’ is very similar to Kornai’s vegetative control system. Braudel’s approach (1967) was very unusual in his time – the first part of his three-volume work was published in 1967. He sees the economy as a house with three stories: the ground level is the material life, or in other words the infra-economy, the infrastructure of human life. The whole economy according to Braudel is based on the unconscious daily routine of the infra-economy.

Based on the above, a gap-filling subsystem must exist, we can call it the infra-economy or autonomous control system (this is a question for future research); it provides stability, and the basis for our social and economic system. Kornai and Braudel both recognized the routine functioning of the basic-economy, without which the whole economy would lose its stability. How this vegetative or infra-economy relates to the GVCs and to our globalized world economy, is another tough question that future researchers will need to address.

BIBLIOGRAPHY

Baldwin, R. ,2009, *Integration of the North American Economy and New-paradigm Globalization*. WP 049, Graduate Institute, Geneva, from: <http://graduateinstitute.ch/files/live/sites/iheid/files/sites/ctei/shared/>

- CTEI/Baldwin/Publications/Chapters/Regionalism/Integration%20of%20the%20North%20American%20economy%20and%20the%20new%20globalisation%20paradigm%20%28Baldwin%29.pdf
- Baldwin, R. ,2012,*Global Supply Chains: Why They Emerged, Why They Matter, and Where They Are Going*. Fung Global Institute, July 2012 from: <https://ideas.repec.org/p/cpr/ceprdp/9103.html>
- Barabási, A.-L. ,2002,*Linked: How Everything Is Connected to Everything Else*, 2002.PenguinBooks.
- Braudel, F., 1967, *Civilisation matérielle, économie et capitalisme, XV^e-XVIII^e siècle* vol. 1: *Les structures du quotidien* (1967).
- Braudel, F., 1977, *Afterthoughts on Material Civilization and Capitalism*. transl. P. M. Ranum. Baltimore and London: The Johns Hopkins University Press (p. 81), from: <http://www.scribd.com/doc/47156827/Braudel-F-1977-Afterthoughts-on-Material-Civilization-and-Capitalism>
- Braudel, F. ,1979, *Civilization and Capitalism, 15th–18th Centuries*, translated by Siân Reynolds, 3 vols. (1979) vol. 1: *The Structures of Everyday Life*.
- Braudel, F., 1985, *Anyagi kultúra, gazdaság és kapitalizmus XV-XVIII. század*. Budapest, Gondolat, 1985. Első kötet: A mindennapi élet struktúrái: a lehetséges és a lehetetlen. Gutta Könyvkiadó, 2004.
- Czakó, E. (Eds.) 2014, *A globális értékláncok – a multinacionális vállalat, mint globális gyár (Global Value Chains – Multinational Enterprise, as Global Factory)*, Working Paper, Int. of Business Economics, no 155. from: http://unipub.lib.uni-corvinus.hu/1586/1/Nkzi_PhD_MUHELY_2013_2014%20vegso.pdf
- Castells, M.,1998, *The Information Age: Economy, Society and Culture*. Vol. I: *The Rise of the Network Society*. 2nd ed. in: 2000 *End of Millennium*. Malden, MA; Oxford, UK: Blackwell. ISBN 978-1-4051-9686-4.
- de Backer, K., 2013, *OECD Work on Global Value Chains and Trade in Value Added*. Bruegel workshop, Brussels, 27 June 2013, from: http://www.bruegel.org/fileadmin/bruegel_files/Events/Presentations/130627_de_backer.pdf
- De Backer, K. – Yamano, N., 2012, *International Comparative Evidence on Global Value Chains*1. 2012/03, OECD, from: <http://dx.doi.org/10.1787/5k9bb2vcwv5j-en>
- Dobos, I., Szalay, Zs.,2011,*The Closed Loop Model by Regional Economics or How Big is the Ants' Footprint?* In: Third Annual Conference on Globalization, Sustainability and Development, May 4-7. 2011., Gödöllő / Budapest, Hungary. from: http://unipub.lib.uni-corvinus.hu/442/1/Dobos_Szalay_2011.pdf

- Grodzicki, M.J., 2014, *Global Value Chain and Competitiveness of V4 Economics* (chapter 1) In: Kiendl-Wendner, D. & Wach, K. (Eds.) (2014). *International Competitiveness in Visegrad Countries: Macro and Micro Perspectives*. Graz: Fachhochschule Joanneum. from: http://www.visegrad.uek.krakow.pl/PDF/Graz2014_ch01_grodzicki.pdf
- Gereffi, G., 1994, *The Organisation of Buyer-driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks*. In: Gereffi and M. Korzeniewicz (eds), *Commodity Chains and Global Capitalism*, Westport, CT: Praeger: 95-122
- Gereffi, G., Humphrey J., Kaplinsky R., Sturgeon J., 2001, Introduction: *Globalisation, value chains and development*. IDS bulletin 32 (3), 1-8 from: <https://www.ids.ac.uk/files/dmfile/gereffietal323.pdf>
- Gereffi, G., Humphrey J.– Sturgeon J., 2005, *The Governance of Global Value Chains*, *Review of International Political Economy* 12, 1 (February): 78-104. from: <http://www.rrojasdatabank.info/sturgeon2005.pdf>
- Gereffi, G., 2012, *New Trends in Value Chain Upgrading: Lessons from Large and Small Countries*, US International Trade Commission Washington, DC. from: http://www.usitc.gov/research_and_analysis/gvc.pdf
- Goeltz, D.R., 2014, *Globalization and hypercompetition – Drivers, linkages, and industry differences*. *Journal of International Business and Cultural Studies*, Volume 8 – June, 2014. from: <http://www.aabri.com/manuscripts/141856.pdf>
- Jain, V.K., Raghunath, S., 2013, *Strengthening America's International Competitiveness through innovation and global value chains*. In: Kedia, B.L., Jain, S.C. (ed.), 2013, *Restoring America's Global Competitiveness through Innovation*, pp. 252-274.
- Kaplinsky, R., 2013, *Global Value Chains, Where They Came From, Where They Are Going and Why this is Important*, IKD Working Paper No. 68. from: <http://www.open.ac.uk/ikd/documents/working-papers/ikd-working-paper-68.pdf>
- Kornai, J., Martos, B., 1971, *Gazdasági rendszerek vegetatív működése (Autonomous Control of Economic Systems)* *Sigma*, 1971, Vol. 4, No. 1-2, pp. 35-50. In English: 1973. from: <http://www.jstor.org/stable/1913373>
- Kornai, J., Martos, B., 1981, *Non-price control*, Akadémia, ISBN: 963 05 2442 2
- Mudambi, R., 2008, *Location, control and innovation in knowledge – intensive industries*, *Journal of Economic Geography*, July 2008 from: <http://joeg.oxfordjournals.org/content/8/5/699.full>
- OECD, 2013a, *Interconnected Economies: Benefiting from Global Value Chains*, OECD Publishing.

- OECD, 2013b, *Interconnected Economies: Benefiting from Global Value Chains*, Forward, OECD Publishing. from: http://www.oecd-ilibrary.org/trade/interconnected-economies/foreword_9789264189560-1-en
- Porter, M.E., 1985, *Competitive Advantage. Creating and Sustaining Superior Performance*, New York, NY: The Free Press.
- Powell, W.W., 1990, *Neither market nor hierarchy: Network forms of organization*. Pp. 295-336 in *Research in Organizational Behavior*, edited by Barry M. Staw and L. L. Cummings: JAI. from: http://web.stanford.edu/~woody/papers/powell_neither.pdf
- Ricardo, D., 1817, *On The Principles of Political Economy and Taxation*, ed by: Batoche Books, 2001. from: <http://socserv.mcmaster.ca/econ/ugcm/3ll3/ricardo/Principles.pdf>
- Szalavetz, A., 2013, *Szolgáltatás jellegű vállalati tevékenységek fogoly típusú kiszervezése – funkcionális feljebb lépés a hazai feldolgozóipari leányvállalatok szemszögéből. (Captive Offshoring of Functions – Functional Upgrading at Manufacturing MNCs' Hungarian Subsidiaries)* *Külgazdaság*, 57 (5-6). from: <http://real.mtak.hu/8060/1/Szalavetz5-6K%C3%BClg2013.pdf>
- Timmer, M.P., Erumban, A.E., Los, B., Stehrer, R., de Vries, G., 2012, *New measures of European Competitiveness: A Global Value Chain Perspective* from: http://www.wiod.org/conferences/brussels/Timmer_background.pdf
- UNCTAD, 2013, *World Investment Report 2013, Chapter IV*. from: http://unctad.org/en/publicationslibrary/wir2013_en.pdf