

Zaid B. OWAIS

Karoly Ihrig Doctoral School of Management & Business,
Faculty of Economics & Business, University of Debrecen, Hungary

AGILE SUPPLY CHAIN MANAGEMENT A PREREQUISITE TO INFLATION IN GLOBALIZED ECONOMY

Review
Article

Keywords

Supply Chain;
Globalization;
Agile Management;
Economy;

JEL Classification

M11, L11, F60

Abstract

Globalization is in no doubt influencing companies pricing choices and price determination, as a result influencing the supply chain, increasing changes and issues in global economy, proposing a need for comprehensive analysis in order to better understand inflation dynamics and sort a worldwide commonality by adding variables to the typical inflation models to incorporate globalization with inflation dynamics, as the supply chain grows bigger the more complicated it gets, therefore it becomes less adaptive, a bigger more diverse supply network enhancing product variety is proposed to create more supply agility and improve supply performance, also this agility seems promising in terms of improving collaboration and communication which is already challenge on a domestic scale, not to mention a globalized one, the composite supply chain challenge must be addressed by expanding global supply chain models to encompass both internal production and external supplier, providing enough layers of suppliers interaction in sourcing significant components, in which is a key feature of agile practice, enabling limitless flexibility in terms of product capability, allowing rapid lead times when combined with industry.

INTRODUCTION

The butterfly effect is the best opener for this kind of article, as when speaking about Macroeconomics the most common approach that economists agreed on is taking the economy as a whole, moreover, it was the reason that Macroeconomics was developed in first place after the failure of Microeconomics in explaining certain market behaviors, but that was somewhat a century ago.

Sometimes taking a step back is the only way to go forward, the butterfly effect is an idea that initial small conditions have a tendency to cause a non-linear impact on a complex and dynamic system, to mold this idea within the economical frame in previous years governments focused on influencing the economy within three main factors, the output, unemployment, and inflation while maintaining economic growth, in the past years our life aspects has changed drastically, with stretching globalization scope into a much bigger and more complex aspect, also the demand shifting from the regular goods and services to new market requirements while entering industry 4.0 era and its technologies, moreover bigger concerns towards what our economical and industrial jumps are causing to our globe, therefore eyes are all on sustainable development and reaching a sustainable system.

With all this increasing complexity of tasks, measures, and market demand to be governed alongside how all these previous terms integrate, agility is required for the system to adapt to these changes in order to be able to supply, moreover systems should be broken down into furthermore simple activities for them to be managed, also with the adoption of managerial ideologies and methodologies such as lean to help eliminate wastes as much as possible on a corporate scale, with these terms being proved to work on a project/corporate level they are considered a prerequisite to stepping up and meeting the overall market requirements making it easier to achieve and also more of a systematic routine.

To sum it all up the butterfly effect mentioned earlier suggests that if corporates adopt lean and agile managerial methodologies which by the way can also be applied on a household level, these methods can provide more solutions on a daily basis to help be more change and complexity adaptive in the integrated globalized world we live in today, also eliminating wastes while maintaining a high level of productivity and performance moreover continuous improvement resulting in improving the supply chain processes adaptability to changes in market demand, therefore reducing the impact of these changes on inflation and also the possibility of achieving GDP growth, in addition to creating more business opportunities and scopes within the same

corporate therefore, increasing employment, bringing us one step closer to sustainability, lining it up with the goals of the governance of the economy as a whole.

LITERATURE REVIEW

Inflation in Shades of Globalized Economy

Monetary policy focuses on being able to understand and also forecast inflation in order to take necessary measures when needed, during the world financial crisis, it was noticed that when growth collapsed, the inflation rates did not fall further as they were supposed to according to the Phillips curve of inflation and slack, moreover when output gaps started closing in many economies afterward due to GDP growth increase and unemployment rates falling, inflation rates remained low, therefore the need for a framework update is proposed, a framework that integrates inflation models with globalization (Forbes, 2019).

Frameworks that are commonly used in order to model inflation have always been focusing on inflation forecasts and domestic slack (domestic variables), therefore limiting the global influence in supply shock of either import prices or oil, with the stretchy scope that globalization “which is defined as the integration between the world as whole with countries individually” gained over the years, it is a necessity to include global factors in inflation models dynamics like global prices competition, exchange rates, oil and non-fuel commodity prices and global slack, integrating both domestic variables with the previously mentioned global variables can efficiently improve the ability of simple models inflation prediction (Forbes, 2019).

In the new Keynesian economic version, at the core of most economic models presenting inflation, starting from a simple Phillips curve equations that connect unemployment with inflation rates alongside its connection to the aggregate demand and supply models, all the way to the complicated more detailed DSGE models, domestic slack and domestic inflation are centralized, although many authors have tried to integrate global factors throughout their publications and frameworks by attempting to control global slack, import competitively and prices, yet still domestic factors and variables remain at the core (Blanchard, 2018; Gordon, 2013; Mazumder & Ball, 2015; Miles, Panizza, Reis & Ubide, 2017; Berganza, Del Rio Lopez & Borrillo, 2016; Stock & Watson, 2010). Central banks that use DSGE models do include a wider range of the international economy, but yet still global interactions keep playing a smaller scope if not null in the simpler models, that’s usually justified in terms of import prices and domestic slack will reflect any changes that happen within the global economy making them statistically sufficient

in order to control global economy changes, making the addition of any international factors is unnecessary (Mikolajun & Lodge, 2016; Borio & Filardo, 2007; Ball, 2006; Ihrig, Kamin, Lindner & Marquez, 2010; Auer, Levchenko & Sauré, 2017; Berganza et al., 2016). The sequential connection can be found through extensive literature that can connect the role of globalization factors affecting inflation rates in connection with the supply chain, these factors include but are not limited to changes in unit labor cost, and movement of import price noting that this movement is not influenced by oil supply, moreover global competition and global interest rate (Eickmeier & Pijnenburg, 2013).

Globalization does have an effect on wide range of factors that influence the dynamics of inflation, many of these factors could not be captured by terms of import prices and domestic slack, and the focus will be on the effects on the inflation process rather than temporary periodic shifts caused by partially supply-demand shocks (Forbes, 2019). The variables in the global economy that can be affected by the changes due to globalization of the global economy can be summed into: global slack roles, domestic slack, firm markups, and commodity markets. These previous effects were traced back to four main change factors in the global economy, they all include the increase of three out of four factors which are globalized trade flows, the role of supply chains, emerging markets and finally the reduced labor bargaining power (Auer, Degen & Fischer, 2013; Gamber & Hung, 2001; Auer & Fischer, 2010; Ball, 2006).

The first of these global economic shifts is increased global trade, which has been well documented, as imports summed to exports (total trade) has expanded significantly, rising the GDP in 1990 from around 39% to 56% in 2016. As a percentage of total exports, when a country's GDP rises, worldwide demand will certainly rise as well. Stronger impact on national GDP and domestic company pricing setting similarly, domestic inflation will rise as the share of imports in GDP rises in a particular economy. Due to their increased share in the economy, imported commodities will be more affected by price changes. The price basket and the costs of imported items will be partially included in foreign markups, foreign demands, and foreign marginal costs which are all considered to be product price influencing factors. Assuming that there is no complete pricing-to-market making price closely linked, as the proportion of traded goods in GDP rises, export competitiveness margins in addition to imports domestic inflation index are both affected by the movement of exchange rates, which as a result has a significant impact on prices, therefore influencing pricing decisions (Baffes, Kabundi, Nagle & Ohnsorge, 2018).

Since the early 1990s, there has been a second much more noticeable upheaval in global economy.

Emerging markets played a bigger influence in the 1990s, as advanced economies accounted for around 64% of the global GDP, while emerging markets only accounted for 36%. This was predicted to practically invert in 2018, with advanced economies producing only around half of what they did in 2017. About 40% of global GDP is generated by emerging countries, whereas emerging markets account for 60% of world GDP. Emerging markets have a lot of potential. Since the global financial crisis, it is responsible for more than 75% of global growth. Emerging economies have also been a major source of commodity demand, with the largest seven emerging markets accounting for nearly all of the increase in world metals consumption in addition to 66.6% increase in global energy consumption over the twenty years (Baffes et al., 2018). As a result, prices of global commodity became increasingly connected to emerging market growth dynamics, particularly in China. As (Miles et al., 2017) point out, this relationship contributed to significant fluctuations in commodity prices, potentially boosting the impact of these types of commodity price shocks in global inflation movements (Coibion & Gorodnichenko, 2015). Because of the larger price fluctuations, this higher volatility in commodity prices can explain a bigger part of the variation in inflation, nevertheless, if the impacts of these commodity price movements on inflation are not significant, the impact of a given adjustment is nonlinear (and larger after larger price moves). Inflationary pressures could have been exacerbated by a rise in commodity prices (Hamilton, 2010). In the sticky price model, companies are eager to alter prices following higher shocks (Ball & Mankiw, 1995). On the other hand, the reduced reliance on natural resources in most advanced economies as these economies migrate to less commodity intense types of production may reduce the impact that commodity price movements has on inflation in these economies (Forbes, 2019).

The easing of final goods purchase from their cheapest sources while using global supply chain in order to shift production processes to be done where the costs can be at its lowest, creating a greater pricing competition forming a pressure on firm markups, this can be considered as the third change in global economy that can have an effect on inflation dynamics (Guilloux, 2018; Autor, Dorn, Katz, Patterson, Van Reenen, 2020). The increased role of developing economies, in addition to the higher cross border trading capability are strictly connected to the preceding mentioned trend, as companies that compete with imports or exports have to take pricing rivalries from overseas into consideration more during markup determination. Even at times when trade flows remain constant, an increased contestability from global marketplaces diminishes enterprises' pricing power therefore lowering markups, particularly in sectors with less

differentiated commodities (Benigno & Faia, 2010; Grossman & Rossi-Hansberg, 2008; Burstein, Kruz & Tesar, 2008). Domestic costs will grow more closely matched with international costs as it becomes simpler to move operations abroad (even tiny phases of the industrial process). Global supply networks have caused a synchronization increase in across nation prices of production, causing producers price index to triple in global component sample as (Auer, Levchenko & Sauré, 2017) discussed these ideas in depth. Including exports and imports in more integrated supply chains will enable enterprises to absorb fluctuations in exchange rates during various production stages, without the need for final prices modifications (Bank for International Settlements, 2015).

Each of these worldwide economic shifts does have potential to diminish employees' bargaining power in addition to labor share, weakening the importance of Phillips curve link between domestic slack and wage (and price) inflation (Karabarbounis & Neiman, 2014). More precisely, if businesses try to maintain profits by substituting labor and energy expenses, the higher volatility in commodity prices might undermine the link between wage growth and slack. The increased competition in traded products, as well as increased imports from low-wage nations, may cause more difficulties for local enterprises to increase prices in response to small labor markets and rising wage demands (Auer et al., 2013). Increased usage of supply chains, as well as the simplicity with which elements of the manufacturing process may be moved to cheaper areas, may limit domestic employees' capacity to bargain for better pay (Auer, Borio & Filardo, 2017). Furthermore, increasing workers mobility (as in the EU) or even the potential increase of immigration that replaces any vacancies might diminish worker bargaining power even further. Although many other domestic trends (such as flexible hour jobs in the sharing economy and higher employer concentration in some industries) are expected to have an impact on wage growth and worker bargaining strength (Benmelech, Bergman & Kim, 2020; Azar, Marinescu, Steinbaum & Taska, 2020) The relationship between domestic slack and inflation may be further weakened as a result of these multidimensional developments in the global economy (Forbes, 2019).

Globalized Supply Chain

In recent years, the seek for higher revenues in addition to lowering costs while maintaining a proven reliability have encouraged managers to be looking for an international manufacturing sources. Therefore facilities are being located in foreign markets by manufacturers so they can make the best of capital subsidies, lower costs of logistics and direct labor, in addition to trade and tariff concessions (Ferdows, 1997), providing more

advantages such as enhancing the dependability to close proximity to suppliers, the near proximity to consumers that enhances organizational learning, in addition to providing an access to international markets (MacCormack, Newmann & Rosenfield, 1994). Nevertheless managing global supply chains has more complexity into it than managing a domestic one, experts say (Dornier, Ricardo, Fender & Kouvelis, 1998; Wood, Barone, Murphy & Wardlow, 2002; MacCarthy & Atthirawong, 2003). The supply chain lead time increase reflects on an increase in costs, due to decision complications that happen to inventory, alongside the increase in transportation costs due to large geographical distances, not to mention demand forecasting challenges, as the diversity in cultures and linguistics harms the planning and forecasting efficiency. Another type of issues rise up in developing countries, as the lack of supplier quality or in cases availability, skilled labor, transportation shortcomings due to insufficient infrastructure or/and telecommunications, shortenings in equipment and technologies, all are obstacles that do are not faced within industrialized countries, limiting the competitive edge of companies that rely on global supply chain.

Moreover, political alongside economic instability in addition to regulatory changes and currency exchange rates volatility are all risks affecting the global supply chain performance (Dornier et al., 1998). Items are usually acquired in the currency of the supplier, such a perquisite influences items payment prices because of the currency exchange rates, as transactions volume and timing has an impact on the financial success of the supply chain (Carter & Vickery, 1988). Therefore when planning a global supply network, it is crucial for practitioners to take these risks into consideration.

In order to help managers overcome these kind of risks, the research community has developed a significant number of design models that reflect the global supply chain. However, new difficulties arise in terms of globalization and management, especially business environment wise, as it is always evolving around the global supply chain problem, for example companies that faced outsourcing issues on the enterprise-level in the past are having frequent attempts on integrating decision making processes across all layers of the supply chain, moreover the increased outsourcing to both foreign and domestic regions.

One more issue is supply chain performance, as it contains a wider definition now compared to be before, because of the variations of its strategy, objectives and purpose, as these variations are highly dependent on product value delivered to the customer (Keeney, 1994). Recent years have witnessed an increase in offshore supplier location production outsourcing, as supply chains that incorporate both foreign and domestic suppliers are

becoming more common, besides the corporate aspects, there is also an availability of supplier facilities, as the criteria of supplier selection process is better defined widely, as they cause a significant impact on the global supply chain challenges. The buyers' assessment on the ability of a certain supplier to meet the service requirements alongside other aspects, such as pricing and delivery, in addition to meeting the quantity while maintaining the quality required, is a main player in the choosing process of suppliers (Leenders & Fearon, 2002). A wider criteria can be considered by purchasing managed in certain cases, such as inventory cost, training and maintenance etc. covered by the umbrella of the total cost of ownership (Burt, Dobler & Starling, 2003; Ellram, 1995; Degraeve & Roodhooft, 1999). At last, additional constraints can be considered by the purchasing managers, like minimum order quantities, regional preferences, capacity limitations and restrictions on the number of suppliers, are all elements that contribute in supplier selection ratings that has an influence on the model design structure (Pan, 1989).

Another increasing concern is that the architecture on the global supply chain is affected by supply chain choices integrations, the integration of business processes, which requires decision coordination to be across various locations and over many layers, is recommended in the process of supply chain management. In order to integrate replenishment panning across organizations, companies tend to use CPFR (collaborative planning and forecasting replenishment) and VMI (vendor managed inventory) on order share and integrate information related to sales and promotion (Lewis, 1999; Sherman, 1998). Moreover, by adding supplier capacity restrictions and inventory in the scheduling process, production choices across the supply chain can be integrated, by default supply issues prediction therefore their avoidance, this is usually done using APS (advanced planning systems) (Rohde, 2005). These integration strategies influence the global supply chain architecture. The importance of integrating global supply chains was addressed by several writers, as duplicating a well-coordinated integrated global supply chain is a key player in the competitive strategy (Dornier et al., 1998; Trent & Monczka, 2003; Brush, Marutan, Karnani, 1999)

Although cost reduction has been the core focus in managing supply chains, the success of the supply chain in reality counts on managing many more aspects, other than cost SCOR (supply chain operations reference) assesses performance based on other variables within, such as responsiveness to changes and flexibility, assets and dependability (Supply-Chain Council, 2003). In order to achieve a globally improved and supply chain, (Handfield, 1994) identifies five aspects that organizations must seek, listed as follows, organizations must aim for

meeting schedule requirements, saving costs, having and access to new tech, improving quality and a wider supplier base. In order to increase competitiveness, in 1990s quick response approach was adopted by some companies (Hammond & Kelly, 1990; Lawson, King & Hunter, 1999). Two of the most important performance indicators of the global supply chain management are delivery and quality performance according to (Bozarth, Handfield & Das, 1998). Companies that used to rely on foreign markets resources because of the lower manufacturing cost advantages, are increasingly relying on these foreign markets for accessing a larger customer base, suppliers and skilled workers (Ferdows, 1997), therefore managers working on global supply chains must integrate and align their decisions with their company's strategy in order to achieve its objective and goal, which is broader than cost reduction.

Globalized Supply Chain & Inflation Due to Covid-19 Pandemic

The exceptional problems posed by the coronavirus disease 2019 (COVID-19) pandemic have resulted in significant economic disruptions. Consumer spending fell dramatically as a result of social distance, particularly in industries like restaurants and hotels that are more vulnerable to these policies (Dunn, Hood & Driessen, 2020). The epidemic also impacted the supply chain, as many employees were unable to safely return to work, resulting in output levels falling below full capacity in several industries. Other areas of the economy, including as information technology, appear to have been less damaged by the epidemic, or perhaps favorably influenced (Kwan & Mertens, 2020).

In examining the macroeconomic impact of COVID-19, some basic Economics 101 supply-and-demand analysis might be useful. Deloitte's observation is an excellent place to start, COVID-19 has the potential to have a three-fold influence on the global economy: directly influencing production (supply), causing supply chain and market disruption (supply), and having a financial impact on enterprises and markets (primarily demand) (Bachman, 2020).

Covid-19 is a demand and supply shock at the same time. A clear disinflationary component was the abrupt decline in expenditure. However, there was a dramatic decrease in supplies, which might be more long-term. We identify reasons why Covid-19's numerous negative supply shocks may dominate, causing costs to rise and inflation to rise. These shocks may be felt most acutely in contact-intensive services, where material capacity has been reduced as a result of stricter health and safety rules. From doctors to restaurants, a significant portion of activities might simply cost more to supply as a result of lower capacity, causing businesses to raise rates to stay afloat. What's the end result? Production

costs are expected to rise sharply – albeit seldom – over the world, perhaps rising headline inflation sooner than many expect (Bartsch, Boivin & Hildebrand, 2020).

COVID-19 had a significant supply-side impact at first. Foreign closures that happened at an early stage of the pandemic in different markets and in China mainly have caused a decrease in goods and services supply, which caused the global economy to change positions from point “a” to point “b”, as this production reduction resulted in a price increase “stagflation”, just like when central banks lower interest rates, a demand reaction to the recession will result in inflation, without a significant impact on production and employment (Maital & Barzani, 2020).

Especially if the supply curve is skewed in the short run (which is also a cost curve) due of the difficulty to identify other sources of components and materials, it is price agnostic. It's worth noting that a worldwide epidemic's second-round effects will range from minor to substantial. Demand is decreasing. As a result of supply-side disruptions, factories and workplaces are closing. Consumers will reduce their spending, moving demand curves inward and lowering prices. Boosting GDP, lowering unemployment, and slowing price increases, some of this missed demand will be transitory, and consumers will 'catch up' on their spending, such as on holidays, once the pandemic has passed. However, part of the demand will be lost permanently, decreasing global economic development in the long-run (Maital & Barzani, 2020).

Reorganizing global supply chains to improve resilience is also expected to become a major driving force. Inflation is rising, particularly for manufacturers. More resilient value chains can endure disturbances like regional viral epidemics and may provide a long-term buffer. However, this comes at a price. As a result, even sectors. In the medium run, even those who are not immediately affected by Covid-19 may suffer increased production costs (Bartsch et al., 2020).

The argument states that the huge increase of credit and money since 2009 has presented a puzzle:

Highlighting that that inflation happened in share prices, as the stock market was booming due to investors borrowing money at an interest rate on almost zero, while investment opportunities did not have a wide variations, no more than equities, China's elastic supply curve in addition to its huge production capacity, in a world where the supply of products and services are a click away with internet connected network, enabled meeting global demand requirements without increasing costs, this formed the answer for the presented puzzle of why the huge sums of money on the market did not result in the inflation (Maital & Barzani, 2020).

The COVID-19 pandemic will put a spoke in the wheel of this global supply curve that is infinitely elastic. Will the decrease in demand compensate for the reduction in supply? If not, we may witness the first symptoms of inflation as a result of COVID-19, as supply chains are disturbed and the supply of products and services from China and, to a lesser degree, India is interrupted, following steady pricing since 2008/9 (Maital & Barzani, 2020).

These causes exacerbate a deglobalization trend already underway — and serve as a negative supply shock. There are three forces at work. First, when global value chains are largely destroyed and manufacturing is relocated to higher-cost places, local production costs become more important in deglobalization. Second, as internal cyclical pressures mount, diminished competition may empower companies to boost prices. Third, with less outsourcing and migrant labor, domestic employees may have more wage negotiating leverage. This is particularly true in locations where the political pendulum is swinging in favor of tackling inequality. Higher minimum salaries and taxes might be one way to achieve this. As a result, salaries would be more susceptible to domestic slack and price pressures (Bartsch et al., 2020).

As a result, inflation may remain elevated indefinitely. Workers may be able to demand bigger salary increases, and businesses may respond with higher price increases, signaling a fundamental shift in wage and price determination. This would reverse some of the patterns that have emerged in recent decades, when globalization has been a deflationary driver, the findings reveal that a common global component accounts for a large portion of the variance in goods prices and headline inflation in developed market (DM) nations, but services costs are mostly influenced by local variables. It's difficult to pinpoint the causes, but different studies point to the relevance of trade flows, commodity prices linked to China's expanding influence, and emerging market (EM) economies in general. Local employees' bargaining power is being eroded as a result of interconnected supply chains (Bartsch et al., 2020).

The impact on inflation – both the rate and the volatility of inflation in big economies – might be significant. Between 1995 and 2005, non-commodity import costs fell, lowering annual headline inflation by 0.2-0.5 percentage points in the United States and the Eurozone (Pain, Koske & Sollie, 2008). And, with less flexibility to diversify across global supply networks, enterprises may be more vulnerable to domestic shocks, resulting in larger price fluctuations. According to a research, reversing global tariff reductions since 1990 may cut worker productivity by 4.2 percent in the United States, 3.3 percent in the Eurozone, and 4.3 percent in the OECD, raising production prices (Guillemette & Turner, 2018).

Agile Supply Chain Management

A number of critical components are highlighted in the larger literature on the efficient management of agile supply chains. (Harrison, Christopher & Van Hoek, 1999) proposed a foundational paradigm for agile supply (Figure 1), which was later refined by (Christopher, Lawson & Peck, 2004).

The apparently natural criterion of being market aware might be key to this approach. The discovery of prospective market needs for new items, as well as the following monitoring of market demand for these products, may be accomplished by collecting developing market trends, listening to consumers, and tracking real demand through daily point-of-sale data. The large range of product diversity and, as a result, the wide supplier base that is typically necessary to satisfy these product requirements leads to network-based supply. To gain a competitive edge, one of the participants must be able to control, or orchestrate, the frequently chaotic situation complicated network as a whole, with the goal of focusing on, or making the most use of, the different network suppliers' key capabilities and strengths. Process integration, where there is cooperation and integrated processes and systems across the supply chain, is of course a part of properly managing the supplier network. This could be best accomplished through the concept of a virtual supply network, which allows for collaborative planning, information sharing, and visibility across the supply chain.

Although some parts of such an agile supply chain management paradigm may offer some paradoxes, particularly in a global sourcing setting, it is definitely applicable to the fashion industry supply network.

The capacity of retailers to make accessible items they believe will be popular, monitor demand for these, and manage a flexible supply chain that allows them to adjust to any changes in demand, including fast ramping up or stopping supply, is critical to their success in the marketplace. However, additional risk is posed by demand unpredictability, the increased usage of complicated global supply networks, and shorter and shorter product life cycles. Financial risk, chaotic risk, and market risk are identified by (Christopher & Lee, 2001). Global fashion supply chains which are characterized by their complexity alongside unpredictability have exacerbated a risk of creating chaos, as it can result in undesired interventions and reactions triggered by misleading data, second guessing and distrust, which will lead to further risks in the market if these changing market demands were not met by the adaptability of the supply chain. Which will result in mistakes in stocks hold and their timing, putting the companies in risks of market downs, stock outs and lost profit (Christopher & Lee, 2001; Handfield & Bechtel, 2002). Other dangers may be linked to the

whole responsibility for outsourced supplies is borne by a third party, the global supply chain will be disrupted. There is a risk of being overly reliant or dependent on a single source of information. Merchants are locked-in with a small number of critical suppliers or intermediates, resulting in their product innovation suffers, and they become subject to third-party opportunism. As a result, in the industry, agility also means being able to manage the supply chain in a way that minimizes or eliminates risk. These dangers are overcome.

Inventory reduction while maintaining demand responsiveness enhancement in addition to greater visibility and accessibility, alongside transmitting accurate information in a timely manner, are key links in enabling an efficient supply chain synchronization (Christopher & Lee, 2001). The best practices that promotes this at its best are the collaboration between supply chain participants and partnership (Lamming, 1996; Christopher & Juttner, 2000; Fernie & Azuma, 2004; Masson, Iosif, MacKerron & Fernie, 2007). Increasing the collaboration and information exchange rates between the supply chain channels is crucial as stated by (Flint, 2004), besides the truth if these activities being a function of a higher volume and more predictable lean supply of products (Flint, 2004) also adds QR (quick response systems) and VMI (vendor managed inventory). CPFR (Collaborative planning, forecasting and replenishment) involvement importance.

The global supply framework that retailers operate in today has access to a lower cost base and that is more skilled, therefore in the shades of the industrial sophistication, it is needed to provide an abroad skilled supplier base. The long term collaborative partnerships that are formed by suppliers, can be less suitable for these situations. As challenges of building such partnerships with higher integration across the supply chain were previously identified to be less suitable (Corbett, Blackburn & Van Wassenhove, 1999). Merchants must work now in a network of teams, where one product has a team of suppliers, while another different product has another new team of suppliers put together which increases complexity, which as a result puts shades on the potential negative impact of managing the supply chain network in a collaborative, information sharing manner (Christopher et al., 2004).

DISCUSSIONS

This wide range of routes via which globalization may influence company's pricing choices implies that changes in the global economy and global issues need to be analyzed more comprehensively to help better understand inflation dynamics, as accounting for import prices and domestic slack does not appear to be a "sufficient statistic" for capturing the many

ways the global economy influences price determination. For example, even if international prices are not integrated in import prices, the price of foreign goods and the potential to transfer production across supply chains may impact pricing, even if items were not imported, local pricing decisions can be counterbalanced by overseas prices. The predicted evolution of slack in major economies which may not be reflected by the existing slack within the home economy might impact firm price setting and as a result inflation. Also due to geopolitical events imported oil prices may fluctuate, yet still these prices give an insight into global demand changes and reflect on other input costs that are considered important for firm pricing choices (Forbes, 2019).

The rising impact of globalization and global variables in inflation dynamics has been brought to surface by many publications that used either one of two ways to bring attention to this (Jordan, 2015). One method of estimating a global common factor or major component for inflation in a group of nations avoids taking a position on how globalization affects inflation (Cecchetti, Hooper, Kasman, Schoenholtz & Watson, 2007; Hakkio, 2009; Ciccarelli & Mojon, 2010; Neely & Rapach, 2011) are also notable examples of this strategy. In general, these articles discover a considerable worldwide commonality. However, there is conflicting information on whether the global factor's importance has grown over time. However, a key flaw in this method is that it fails to determine what causes this common component of inflation in different nations. It might, for example, indicate that frequent shocks (such as more volatile or bigger commodity price changes) play a larger effect. a larger role for global slack in price setting, or more central bank response functions that are similar Each of these factors would have distinct ramifications for inflation predicting and modelling (Forbes, 2019). Another way to more clearly incorporate globalization into inflation dynamics is to add a variable to typical inflation models that captures a specific feature of globalization (Borio & Filardo, 2007), for example, propose including global slack into a Phillips curve model and show that global slack has had a stronger impact on inflation over time, even augmenting the function of local slack in some economies (Ilzetzki, Reinhart & Rogoff, 2016). Other studies, on the other hand, suggest that global slack has no impact on inflation in most economies. Some articles (such as Auer, Levchenko & Sauré, 2017 and Auer, Borio & Filardo, 2017). have advised a more explicit focus on supply chains, generally based on industry data. Controls for the currency rate and commodity prices, which are important in a Phillips curve framework (Forbes, 2015) as well as in a trend-cycle model, have been recommended in studies of UK inflation (Forbes, Hjortsoe & Nenova, 2017).

The most extensive examination of the influence of globalization in inflation dynamics to date is Phillips curve paradigm (Mikolajun & Lodge, 2016), on the other hand, additional modeling methodologies (such as trend-cycle decomposition) are not used, and global producer price dispersion is not controlled for in order to represent the rising involvement of supply networks (Mikolajun & Lodge, 2016).

The research backs up the idea that as a supply chain grows more complicated, it becomes less adaptive (Davis, 1993; Prater, Biehl & Smith, 2001; Danese, Romano & Vinelli, 2004; Hoole, 2005). Complexities arise from various reasons across the supply chain, such as the purchase of a relatively short life cycle product spread over a large diverse number of vendors across the global setting, also the increase in the number of alternatives due to higher product customization leading to various designs, not to mention the diversity of delivery paths options, moreover the competencies required, skills and variations in bases of knowledge, which all require supplier involvement during the product development phase (De Toni & Nassimben, 1995; Cravens, Piercy & Shipp, 1996; Lamming, Johnsen, Zheng & Harland, 2000; Croom, Romano & Giannakis, 2000; Holmberg, 2000). Different cultural and legal frameworks, complicated financial arrangements, and possibly political and other stakeholder involvement, all of which may be seen in a global sourcing environment, add to the complexity. The number of possible foreign source nations has increased, and their unique industrial structures, capabilities, and costs are always changing, necessitating regular reconfiguration of information and material flows (Popp, 2000).

While a bigger and more diverse supply network may be desired to enhance product variety dimensions of agility, this may result in increasing complexity, which is incompatible with enhancing supply agility and other elements of supply performance (Milgate, 2001; Prater et al., 2001). Some have proposed a variety of solutions to this problem, such as focusing on lowering supply complexity (Hoole, 2005), better handle it (Meijboom, 1999), or just attempt to avoid it (Christopher et al., 2004). However, because of the industry's supplier network complexity, a number of issues arise that provide a challenge to these techniques and have an influence on supply chain performance, notably in terms of collaboration and communication across network. Collaboration and communication were already a serious challenge in the fashion business before substantial offshoring became apparent, according to research. The relationship between the manufacturer and the retailer has been largely a matter of "dog eat dog" for the past thirty years, according to suppliers (Haines, 1990), as the main dynamic holding the

industry back is the largely adversarial relationship between manufacturers and retailers.

CONCLUSIONS

The composite supply chain design challenge must be addressed by expanding global supply chain models to encompass both internal production and external supplier locations. Despite the reality that manufacturers seldom own the facilities in their supply networks, executives strive for a well-designed supply chain. Internal and external facilities are common in supply networks, and this reality must be accounted for in global supply chain design models. Important selection criteria for developing these composite global supply chains are identified by (Pan, 1989; Munson & Rosenblatt, 1997). Minimum vendor order amounts, financial limits, number of suppliers, regional preferences, and capacities are among the criteria. These models should also include objectives or constraints for evaluating the impact of quality, lead time, and service level in the global supply chain design challenge. Few writers in the model set we looked at took these issues into account.

We also believe that global supply chain architectures should place a greater focus on different manufacturing and distribution levels. Many of the models examined here exclusively include the top layer of production, ignoring the impact of suppliers of goods and services on performance. There are also opportunities for integrating choices across layers, as shown by (Lee, 2000; Rohde, 2005; Krajewski & Wei, 2001) The supply chain model should have enough layers of suppliers to investigate interactions in the sourcing of significant components and materials. The capacity of supply chain managers to integrate decisions is hampered if the global supply chain design model does not include numerous layers.

The dangers of getting the unpredictable market wrong, and the expenses that come with it, were viewed by retailers as the most significant risk connected with the supply chain, and this was confirmed. Market sensitivity is also controlled, both in terms of determining market demands and in terms of determining market opportunities. Demand is being monitored. The ability to reduce market risk was also critical technique to gently under-supply the market with lower volumes than may otherwise be the case, Before moving on to a new product offering, it may have been sold. The risks of overstocking and subsequent discounting were thus reduced, at the cost of possibly being able to sell more, though, as previously stated, this aided the consumers' sense of newness, exclusivity, and scarcity, with the result that the more fashionable of them became regular store visitors to see what new products were on offer. All of this resulted in orders

in relatively modest quantities, often between 200 and 1,000 products, which were almost invariably obtained overseas in low-cost countries.

The broad-ranging character of the end products nearly always meant that a big network of garment suppliers (or a large integrated service provider with wide capabilities) was necessary to manufacture the finished products in terms of network supply. Given that retailers' main competencies are focused on getting the proper items to market, administration of the offshore low-cost supply chain, with all of its inherent complexity and challenges, was delegated to intermediaries situated in the providing nations. The "network coordinators," who had access to a wide range of suppliers, ultimately handled and coordinated all of the manufacture and delivery of the items to the merchants' European distribution centers. Apart from managing supply chain complexity, a key agile practice element in the use of intermediaries was that their access to a large supplier network enabled almost limitless flexibility in terms of product capability, and when combined with industry overcapacity, the rapid identification and utilization of spare finishing manufacturing capacity to enable rapid lead times.

The auction consisted of small batches that were based on retailers requirements, which was held in a diverse and traditional way, as it was distributed across suppliers that had the capability in addition to the capacity to meet the retailers requirements in the network, in addition to having certain constraints that guarantee price and lead time competitiveness to support agile supply approach such as proximity to fabric suppliers. The diversity did not have to include logistics and distribution potential, assuming the intermediaries did not have the logistical and distributional resources, or their partnerships were with a very small number of them. The information exchange did not appear to be shared across the supply chain as a whole, especially the lower down one went, the vaguer the information became, as it seemed to travel along the supply chain participants in horizontal direction. On the other hand there was a real time demand-supply communication as the demand represented by the selling point monitoring caught some complex information exchanges with the supply represented by merchants and their distribution resources, facilitating daily store deliveries. In order to follow up on the production processes progress, intermediaries could only call, but as soon as the product hit the road using their distribution routes on its way to retailers distribution centers, that complex product monitoring system became less vague.

The fairly futuristic concept of a virtual web-based real-time demand relayed across the supply chain, at least down to the clothes makers, appeared to be a long way off. While there were tight working links between retailers, capital-intensive fabric and logistical suppliers, and middlemen, there were few,

if any, working relationships between retailers and garment producers.

A final conclusion we reach is that the definition of performance indicators employed in global supply chain models should be expanded to include alternative objectives. Reliability, responsiveness, flexibility, cost, and assets are the five performance measures identified by the (Supply-Chain Council, 2003). (Handfield, 1994) lists access to new technologies and a broader supplier base as benefits for global supply chains. In fact, real-world supply networks highlight a range of performance criteria, but only a few global supply chain design models allow for this. More industrial contexts need to be examined in the context of global supply design, according to our findings. This paper has looked at a variety of sectors, including manufacturing, fashion and textiles. Other industries such as heavy machinery and services, have not been explored. The issue for each industry is to choose which elements will be modeled strategically, to make the problem trackable, and to focus on the unique structure of the practical context. Without a clear focus, it's difficult to succeed.

REFERENCE LIST

- [1] Auer, R. A. - Degen K-Fischer AM (2013): Low-wage import competition, inflationary pressure, and industry dynamics in Europe. *Eur Econ Rev.* Vol.59., pp.141-66.
- [2] Auer, R. A. - Levchenko AA-Sauré P (2017): International inflation spillovers through input linkages. *International inflation spillovers through input linkages.*
- [3] Auer, R. - Borio CE-Filardo AJ (2017): The globalisation of inflation: the growing importance of global value chains.
- [4] Auer, R., Fischer AM (2010): The effect of low-wage import competition on US inflationary pressure. *J Monetary Econ.* Vol.57., Issue 4, pp.491-503.
- [5] Autor, D. - Dorn D - Katz LF - Patterson C-Van Reenen J (2020): The fall of the labor share and the rise of superstar firms. *The Quarterly Journal of Economics.* Vol.135., Issue 2, pp.645-709.
- [6] Azar, J. - Marinescu I - Steinbaum M-Taska B (2020): Concentration in US labor markets: Evidence from online vacancy data. *Labour Economics.* Vol.66., pp.101886.
- [7] Baffes, J. - Kabundi AN - Nagle PSO-Ohnsorge F (2018): The role of major emerging markets in global commodity demand. *World Bank Policy Research Working Paper.* Issue 8495.
- [8] Ball, L. M. (2006): Has globalization changed inflation? Has globalization changed inflation?.
- [9] Ball, L., Mankiw NG (1995): Relative-price changes as aggregate supply shocks. *The Quarterly Journal of Economics.* Vol.110., Issue 1, pp.161-93.
- [10] Bachman Daniel, Deloitte. "The economic impact of COVID-19 (novel coronavirus)". March 2020
- [11] Bank for International Settlements. (2015). *Another Year of Monetary Policy Accommodation.* 85th Annual Report, Chapter 4, pgs. 65-82.
- [12] Bartsch, E. - Boivin J-Hildebrand P (2020): Preparing for a higher inflation regime. *SUERF Policy Note.* Issue 211.
- [13] Benigno, P., Faia E (2010): Globalization, pass-through and inflation dynamic. *Globalization, pass-through and inflation dynamic.*
- [14] Benmelech, E. - Bergman NK-Kim H (2020): Strong employers and weak employees: How does employer concentration affect wages? *J Hum Resour.* pp.0119-10007R1.
- [15] Berganza, J. C. - Del Rio Lopez P-Borrillo F (2016): Determinants and implications of low global inflation rates. *Banco de Espana Occasional Paper.* Issue 1608.
- [16] Blanchard, O. (2018): Should we reject the natural rate hypothesis? *Journal of Economic Perspectives.* Vol.32., Issue 1, pp.97-120.
- [17] Borio, C. E., Filardo AJ (2007): Globalisation and inflation: New cross-country evidence on the global determinants of domestic inflation.
- [18] Bozarth, C. - Handfield R-Das A (1998): Stages of global sourcing strategy evolution: an exploratory study. *J Oper Manage.* Vol.16., Issue 2-3, pp.241-55.
- [19] Brush, T. H. - Marutan CA-Karnani A (1999): The plant location decision in multinational manufacturing firms: An empirical analysis of international business and manufacturing strategy perspectives. *Production and Operations Management.* Vol.8., Issue 2, pp.109-32.
- [20] Burstein, A. - Kurz C-Tesar L (2008): Trade, production sharing, and the international transmission of business cycles. *J Monetary Econ.* Vol.55., Issue 4, pp.775-95.
- [21] Burt, D. N. - Dobler DW, Starling SL (2003): *World class supply management: The key to supply chain management.* Irwin/McGraw-Hill.
- [22] Carter, J. R., Vickery SK (1988): Managing volatile exchange rates in international purchasing. *Journal of Purchasing and Materials Management.* Vol.24., Issue 4, pp.13-20.
- [23] Cecchetti, S. G., Hooper, P., Kasman, B. C., Schoenholtz, K. L., & Watson, M. W. (2007, March). Understanding the evolving inflation process. In *US Monetary Policy Forum* (Vol. 8). Christopher, M., Juttner U (2000): Achieving supply chain excellence: the role of relationship management. *International Journal of*

- Logistics: Research & Application. Vol.3., Issue 1.pp.5-23.
- [24] Christopher, M., Lee HL (2001): Supply chain confidence: the key to effective supply chains through improved visibility and reliability. *Global Trade Management*. Vol.6., pp.2-10.
- [25] Christopher, M. - Lowson R-Peck H (2004): Creating agile supply chains in the fashion industry. *International Journal of Retail & Distribution Management*.
- [26] Ciccarelli, M., Mojon B (2010): Global inflation. *Rev Econ Stat*. Vol.92., Issue 3.pp.524-35.
- [27] Coibion, O., Gorodnichenko Y (2015): Is the Phillips curve alive and well after all? Inflation expectations and the missing disinflation. *American Economic Journal: Macroeconomics*. Vol.7., Issue 1.pp.197-232.
- [28] Corbett, C. J. - Blackburn JD-Van Wassenhove LN (1999): Partnerships to improve supply chains. *MIT Sloan Management Review*. Vol.40., Issue 4.pp.71.
- [29] Cravens, D. W. - Piercy NF-Shipp SH (1996): New organizational forms for competing in highly dynamic environments: the network paradigm. *Br J Manage*. Vol.7., Issue 3.pp. 203-18.
- [30] Croom, S. - Romano P-Giannakis M (2000): Supply chain management: an analytical framework for critical literature review. *European journal of purchasing & supply management*. Vol.6., Issue 1.pp. 67-83.
- [31] Danese, P. - Romano P-Vinelli A (2004): Managing business processes across supply networks: the role of coordination mechanisms. *Journal of Purchasing and Supply Management*. Vol.10., Issue 4-5.pp. 165-77.
- [32] Davis, T. (1993): Effective supply chain management. *Sloan Manage Rev*. Vol.34., pp.35.
- [33] De Toni, A., Nassimbeni G (1995): Supply networks: Genesis, stability and logistics implications. A comparative analysis of two districts. *Omega*. Vol.23., Issue 4.pp. 403-18.
- [34] Degraeve, Z., Roodhooft F (1999): Effectively selecting suppliers using total cost of ownership. *Journal of Supply Chain Management*. Vol.35., Issue 4. pp.5-10.
- [35] Dornier, P. - Ricardo E - Fender M-Kouvelis P (1998): *Global Operations and Logistics. Texts and Cases*, New York, John Wiley & Sons.
- [36] Dunn, A. - Hood K-Driessen A (2020): Measuring the effects of the COVID-19 pandemic on consumer spending using card transaction data. *US Bureau of Economic Analysis Working Paper WP2020-5*.
- [37] Eickmeier, S., Pijnenburg K (2013): The Global Dimension of Inflation—Evidence from Factor-Augmented Phillips Curves. *Oxford Bull Econ Stat*. Vol.75., Issue 1.pp.103-22.
- [38] Ellram, L. M. (1995): Total cost of ownership: an analysis approach for purchasing. *International Journal of Physical Distribution & Logistics Management*.
- [39] Ferdows, K. (1997): Making the most of foreign factories. *Harv Bus Rev*. Vol.75., pp.73-91.
- [40] Fernie, J., Azuma N (2004): The changing nature of Japanese fashion: can quick response improve supply chain efficiency? *European journal of marketing*.
- [41] Flint, D. J. (2004): Strategic marketing in global supply chains: Four challenges. *Industrial marketing management*. Vol.33., Issue 1.pp. 45-50.
- [42] Forbes, K. (2015): When, why, and what's next for low inflation? No magic slippers needed. Speech given at the London School of Economics, London, June. Vol.17.
- [43] Forbes, K. J. (2019): Has globalization changed the inflation process?
- [44] Forbes, K. J. - Hjortsoe I-Nenova T (2017): Shocks versus structure: explaining differences in exchange rate pass-through across countries and time.
- [45] Gamber, E. N., Hung JH (2001): Has the rise in globalization reduced US inflation in the 1990s? *Econ Inq*. Vol.39., Issue 1.pp.58-73.
- [46] Gordon, R. J. (2013): The Phillips curve is alive and well: Inflation and the NAIRU during the slow recovery. *The Phillips curve is alive and well: Inflation and the NAIRU during the slow recovery*.
- [47] Grossman, G. M., Rossi-Hansberg E (2008): Trading tasks: A simple theory of offshoring. *Am Econ Rev*. Vol.98., Issue 5.pp. 1978-97.
- [48] Guillemette, Y., Turner D (2018): The long view: Scenarios for the world economy to 2060.
- [49] Guilloux-Nefussi, S. (2018): Are Monopolies a Danger to the United States? Blog post, February. Vol.2.
- [50] Haines, P. (1990): Improving the link between fabric suppliers and garment manufacturers. *Clothing Technology Centre*. Vol.11.
- [51] Hakkio, C. S. (2009): Global inflation dynamics. *Federal Reserve Bank of Kansas City Working Paper*. Issue 09-01.
- [52] Hamilton, J. D. (2010): Nonlinearities and the macroeconomic effects of oil prices. No. 16186.
- [53] Hammond, J. H., Kelly MG (1990): Quick response in the apparel industry. *Harvard Business School Case*. Issue 9.pp.690-038.
- [54] Handfield, R. B. (1994a): US global sourcing: patterns of development. *International Journal of Operations & Production Management*.
- [55] Handfield, R. B., Bechtel C (2002): The role of trust and relationship structure in improving

- supply chain responsiveness. *Industrial marketing management*. Vol.31., Issue 4.pp. 367-82.
- [56] Harrison, A. - Christopher M, van Hoek R (1999): *Creating the agile supply chain*. Institute of Logistics and Transport London.
- [57] Holmberg, S. (2000): A systems perspective on supply chain measurements. *International Journal of Physical Distribution & Logistics Management*.
- [58] Hoole, R. (2005): Five ways to simplify your supply chain. *Supply Chain Management: An International Journal*.
- [59] Ihrig, J. - Kamin SB - Lindner D-Marquez J (2010a): Some simple tests of the globalization and inflation hypothesis. *International Finance*. Vol.13., Issue 3.pp. 343-75.
- [60] Ilzetzki, E. - Reinhart CM-Rogoff KS (2016): Global disinflation in an era of constrained monetary policy. *World Economic Outlook*.
- [61] Jordan, Thomas. (2015). "The Impact of International Spillovers on Inflation Dynamics and Independent Monetary Policy: The Swiss Experience." *Proceedings of the Jackson Hole Symposium*. Federal Reserve Bank of Kansas City, pgs. 171-200
- [62] Krajewski, L., & Wei, J. C. (2001). The value of production schedule integration in supply chains. *Decision Sciences*, 32(4), 601-634.
- [63] Karabarbounis, L., Neiman B (2014): The global decline of the labor share. *The Quarterly journal of economics*. Vol.129., Issue 1.pp. 61-103.
- [64] Keeney, R. L. (1994): Creativity in decision making with value-focused thinking. *Sloan Manage Rev*. Vol.35., pp.33.
- [65] Kwan, S. H., Mertens TM (2020): Market assessment of COVID-19. *FRBSF Economic Letter*. Vol.2020., Issue 14.pp. 1-5.
- [66] Lamming, R. (1996): Squaring lean supply with supply chain management. *International Journal of Operations & Production Management*.
- [67] Lamming, R. - Johnsen T - Zheng J-Harland C (2000): An initial classification of supply networks. *International Journal of Operations & Production Management*.
- [68] Lee, H. L. (2000). Creating value through supply chain integration. *Supply chain management review*, 4(4), 30-36.
- [69] Leenders, M. R., Fearon HE (1997): Purchasing and supply management.
- [70] Lewis, L. (1999): CPFR: One giant business plan. *Progressive grocer*. Vol.78., Issue 4.pp. 69-72.
- [71] Lowson, B. - King R, Hunter A (1999): Quick Response: Managing the supply chain to meet consumer demand.
- [72] Mazumder, S., & Ball, L. M. (2015). *A Phillips Curve with Anchored Expectations and Short-Term Unemployment*. International Monetary Fund.
- [73] MacCarthy, B. L., Atthirawong W (2003): Factors affecting location decisions in international operations—a Delphi study. *International journal of operations & production management*.
- [74] MacCormack, A. D. - Newmann III LJ-Rosenfield DB (1994): The new dynamics of global manufacturing site location. *MIT Sloan Management Review*. Vol.35., Issue 4.pp. 69.
- [75] Maital, S., Barzani E (2020): The global economic impact of COVID-19: A summary of research. *Samuel Neaman Institute for National Policy Research*. Vol.2020., pp.1-12.
- [76] Masson, R. - Iosif L - MacKerron G-Fernie J (2007): Managing complexity in agile global fashion industry supply chains. *The International Journal of Logistics Management*.
- [77] Meijboom, B. (1999): Production-to-order and international operations: a case study in the clothing industry. *International Journal of Operations & Production Management*.
- [78] Mikolajun, I., Lodge D (2016): Advanced economy inflation: the role of global factors.
- [79] Miles, D., Panizza, U., Reis, R., & Ubide, Á. (2017). And yet it moves: Inflation and the great recession *International Center for Monetary and Banking Studies/Centre for Economic*
- [80] Milgate, M. (2001): Supply chain complexity and delivery performance: an international exploratory study. *Supply chain management: An international Journal*.
- [81] Munson, C. L., & Rosenblatt, M. J. (1997). The impact of local content rules on global sourcing decisions. *Production and Operations Management*, 6(3), 277-290.
- [82] Neely, C. J., Rapach DE (2011): International movements in inflation rates and country characteristics. *J Int Money Finance*. Vol.30., Issue 7.pp. 1471-90.
- [83] Pain, N. - Koske I-Sollie M (2008): Globalisation and OECD consumer price inflation. *OECD Journal: Economic Studies*. Vol.2008., Issue 1.pp. 1-32.
- [84] Pan, A. C. (1989): Allocation of order quantity among suppliers. *Journal of purchasing and materials management*. Vol.25., Issue 3.pp. 36-9.
- [85] Popp, A. (2000): "Swamped in information but starved of data": information and intermediaries in clothing supply chains. *Supply Chain Management: An International Journal*.
- [86] Prater, E. - Biehl M-Smith MA (2001a): International supply chain agility-Tradeoffs between flexibility and uncertainty. *International journal of operations & production management*.
- [87] Rohde, J. (2005): Coordination and integration. pp. 245-57. In: *Supply Chain Management and*

- Advanced Planning. (Anonymous). Springer.245-57p.
- [88] Sherman, R. J. (1998): Collaborative planning, forecasting & replenishment (CPFR): Realizing the promise of efficient consumer response through collaborative technology. *Journal of Marketing Theory and Practice*. Vol.6., Issue 4,pp. 6-9.
- [89] Stock, J. H., Watson MW (2010). Modeling inflation after the crisis. NBER Working Papers 16488, National Bureau of Economic Research, Inc.
- [90] Supply-Chain Council (2003). Supply-Chain Operations Reference Model, version 6.0
- [91] Trent, R. J., Monczka RM (2003): International purchasing and global sourcing-what are the differences? *Journal of Supply Chain Management*. Vol.39., Issue 3,pp. 26-36.
- [92] Wei, S.- Xie Y (2018): On the divergence between CPI and PPI as inflation gauges: The role of supply chains. National Bureau of Economic Research,
- [93] Wood, D.F., Barone, A.P., Murphy, P.R., Wardlow, D.L., 2002. *International Logistics*. AMACOM, New York.

LIST OF FIGURES

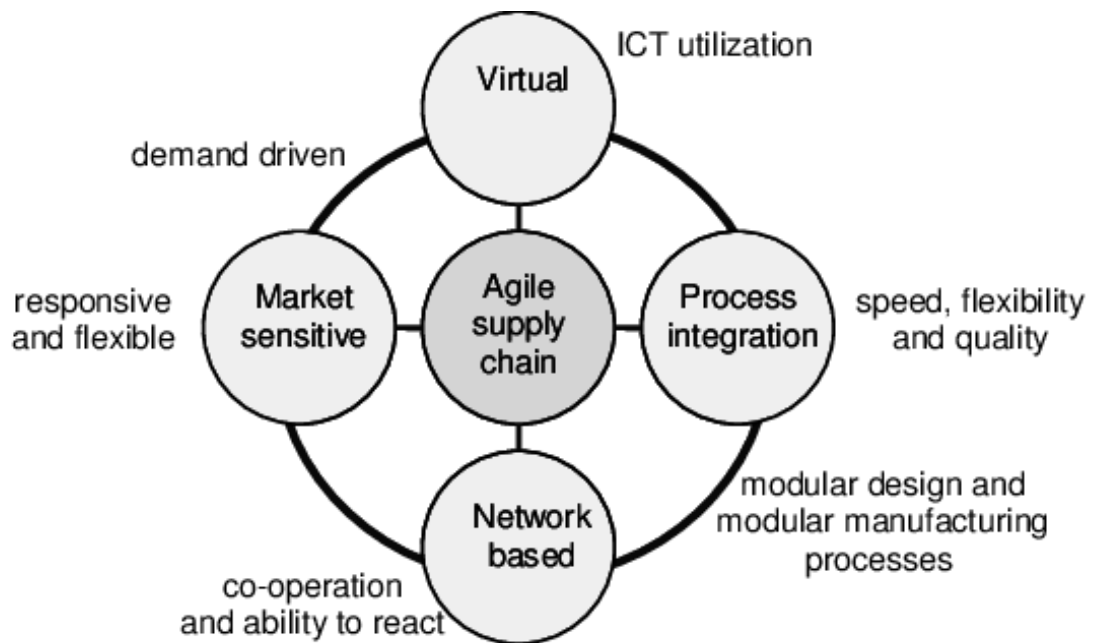


Figure 1
Theoretical framework for the agile supply chain
Modified from Christopher & Lee (2001)