

Just in Time (JIT) or Just in Case (JIC) for COVID-19: Students Make the Call

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Abstract

This teaching case study examines the COVID-19 pandemic in relation to the efficacy of the Just-in-Time and Just-in-Case approaches to the Global Supply Chain (GSC). Over the past five years, COVID scrambled the GSC and sent shock waves through markets. Conventional wisdom appears to have turned against JIT in favor of JIC in the context of the GSC. This case serves as a teaching moment for college students majoring in supply chain management and/or management students. Students will be given the context of both philosophies and consider what occurred because of COVID. As part of the case study, students will be asked which philosophy they prefer in terms of the GSC and will be asked to make recommendations. There exists a continued need in education for experiential classroom learning for contingency planning as it relates to real-world issues such as COVID-19.

Key Words: COVID, JIT, JIC, GSC, Leadership, Experiential Learning, Contingency Planning

1.0. Case Synopsis

Accompanied by fear, dread, and uncertainty, COVID-19 led to shuttered businesses, schools, and places of worship. Beginning in March of 2020, a chain of events engulfed the global psyche. First, there was a lack of PPE and, of course, toilet paper, and then in the years to come regarding COVID, there was a scarcity in baby formula, etc. Meir and Pinto (2024) have explicitly addressed how COVID-19 upset the balance of the GSC between China, the United States, and the rest of the world. COVID-19 upended, or at least altered, the Global Supply Chain (GSC) because the global economy exists in a system of global trade and interdependence among countries.

Just in Time (JIT) philosophy was the center of the disruption of the GSC caused by COVID-19, and firms around the world have benefited from it, especially in terms of ensuring their operational efficiency. Specifically, JIT became mainstream in the 1980s and 1990s as firms began to grasp the philosophy's efficacy (Schonberger, 2007). As a result, many high-profile organizations have incorporated JIT as a fundamental part of their operations. Such firms include Honda, GE, Boeing, Lockheed Martin, Hewlett-Packard, IBM, McDonald's, Volvo Group, Zara, and others, who have seen the positive results of JIT in their operations (Meir & Pinto, 2024).

The philosophy was born in part due to Japan being devastated as part of the United States' effort to end World War II, as Japan was decimated with the use of atomic bombs. As a result, Japan had to rebuild and find novel ways for its industry to conduct business, coupled with a lack of resources. Thus, the making of JIT began. Operationally, though, JIT can best be described as a production process that is synchronized to ensure that parts and supplies are only made when required. JIT "describes how Toyota ensures that all parts needed for assembly are present at the right place, at the right time, and in the right quantity and quality, and is the essence of JIT" (Meir & Pinto, 2024, p. 2332).

In understanding JIT at a basic level, it is the elimination of waste, and anything that does not add value is considered waste. Moreover, JIT is a set of practices that form a detailed, interdependent ecosystem.

JIC was the preeminent manufacturing methodology since the 1970s, particularly in the United States. JIC aligns with a push strategy that relies on mass production of goods and services, while JIT uses a pull strategy, manufacturing only what is required. Balki et al. (2022) extolled the advantages of JIC in the healthcare industry, noting that it allows for an inventory buffer to account for disruptions in their supply chain. Still, Chopra and Sodhi (2004) warned against the advantages of JIC—specifically, that more inventory may entail higher costs relative to savings. In other words, JIC may not be a cost-saving alternative compared to JIT.

With respect to the GSC strategy, other industries are turning to JIC and away from JIT. Gong (2024) posited that the automobile industry has reconsidered the effectiveness of JIT and is moving toward JIC. Uetz et al. (2020) added that more than 20% of U.S. and Mexican manufacturing firms are moving away from lean manufacturing to more flexible storage management. Another advantage of JIC is the use of multiple suppliers; JIT uses a single supplier source.

1.2. Teaching Case

Teaching is an advocacy intended to impart wisdom and guidance for future generations. Moreover, human beings are all teachers in the sense that individuals can learn what to do and what not to do, whether or not they possess the title of teacher. This teaching case is no different: College students need to be able to think independently and make informed decisions regarding real-world problems, which is supported by research and the use of teaching case studies to enhance critical thinking skills among undergraduate students (Seshan et al., 2021).

In the spring of 2020, the world was presented with a situation not seen since the Spanish Flu, which occurred from 1918 to 1920. COVID-19 presented unprecedented challenges for the global population. People were dying, and there was no vaccine until at least 2021. However, the global economy was turned upside down as consumers experienced shortages in supplies like household products, along with PPE equipment.

Despite these challenges, the global economy has been able to withstand and adapt to the ravages of COVID-19. As our case study found, many changes have occurred in the global economy, particularly in the GSC. One of these changes is the efficacy and effectiveness of JIT versus the possibility of the GSC moving toward a JIC model, which is the purpose of this teaching case study.

This teaching case study will allow students to discover the efficacy and effectiveness of the JIT philosophy versus the JIC philosophy in terms of the GSC. Students will explore which philosophy would be most effective in addressing a hypothetical supply chain disruption or a global Black Swan event. This case study will allow students to make such an assessment as they utilize contingency planning to determine which philosophy works best. Per Albrecht et al. (2020), contingency planning is a strategic management tool that firms use to respond to such devastating and tragic events. COVID-19 research advocates contingency planning within the retail industry using a set of actionable plans to mitigate supply chain disruptions (Montoya & Flores, 2021).

1.3. Setting and Teaching Prompt

The setting for this case study will be upper-class undergraduates who are taking the supply chain course in their major or as part of another major (e.g., the supply chain management course may be a requirement for a management concentration). The actionable items follow:

- Students will be given two lecture series that provide context regarding JIT and JIC philosophies. They will also be provided with additional resources, such as peer-reviewed journals and the course textbook. Students will also be lectured on contingency planning.
- Further, students will be grouped into five groups of four or five members based on the class enrollment.
- Each group will choose two firms that are publicly traded (one will be a firm that uses JIT and one that utilizes JIC). Such information can be found via a thorough Internet search.
- Students will be required to study and analyze all available data, such as 10k reports for firms that are publicly available or other publicly available documents.
- Students will develop a proposed contingency plan for each firm in the event of a proposed catastrophic event or Black Swan, such as COVID-19.

- Based upon the creation of the contingency plans, students will determine the effectiveness and efficacy of each philosophy, particularly during times of GSC disruptions.
- Students will present their findings at the end of the semester. They will have the option to write a 15 to 20-page paper or a PowerPoint presentation of at least 15 slides.

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