



University of Tennessee, Knoxville
**TRACE: Tennessee Research and Creative
Exchange**

Chancellor's Honors Program Projects

Supervised Undergraduate Student Research
and Creative Work

5-2023

Procurement Skills in the Age of Volatility

Jason S. Kerzel

University of Tennessee, Knoxville, jkerzel@vols.utk.edu

Follow this and additional works at: https://trace.tennessee.edu/utk_chanhonoproj



Part of the [Operations and Supply Chain Management Commons](#)

Recommended Citation

Kerzel, Jason S., "Procurement Skills in the Age of Volatility" (2023). *Chancellor's Honors Program Projects*.

https://trace.tennessee.edu/utk_chanhonoproj/2531

This Dissertation/Thesis is brought to you for free and open access by the Supervised Undergraduate Student Research and Creative Work at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Chancellor's Honors Program Projects by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

University of Tennessee: CHP Thesis

Procurement Skills in the Age of Volatility

Evaluating Sourcing Fundamentals from Executive Interview Data

Jason Kerzel
5-3-2023



Acknowledgements

I would like to express my sincere gratitude to Dr. Andrea Sordi for his help and guidance throughout the duration of this project as faculty mentor and a significant contributor to the research design process. Thank you to the subjects of our study for dedicating their time in support of this research.

Abstract

Over the past few years, global supply chains have been marred by fluctuating costs, unexpected political roadblocks, resource scarcity, and a general lack of consistency. In response to unexpectedly elevated levels of price volatility and supply risks, companies have navigated both old and new risk mitigation strategies to tackle the problem. In this study, we conducted seven interviews with corporate executives across a wide scope of industries to gauge how strategic sourcing is evolving in response to this volatility, if at all. We found that companies have not made significant changes to traditionally effective sourcing strategies, but they are changing the application of these strategies by adapting the role of procurement itself. Organizational development and innovations of the procurement profession sit at the forefront of supply chain risk management and the executive response to extreme price volatility.

Introduction

Over the past few years, global supply chains have been marred by fluctuating costs, unexpected political roadblocks, resource scarcity, and a general lack of consistency. More than ever before, procurement teams are being forced to find new ways of fortifying their supply chain or face the consequences. In almost any case, dealing with an unexpected kink in the sourcing supply chain adds cost which eats away at a company's bottom line. While this is often true for most companies' supply chains, sourcing material commodities and services has been hit particularly hard. Price fluctuations in oil, grain, and fertilizer have been caused by unexpected legislation, conflicts, climate-induced shortages, protectionism in trade, and even a single ship lodged in the Suez Canal. As the frequency and the interconnectedness of unpredictable challenges has increased, companies need new ways to tackle procurement to sustainably drive profit and ensure employment over the long-term.

In practice, strategic sourcing has been historically based around a handful of tried and tested strategies that have tended to be successful. However, as economic downturns coincide with increased volatility in commodity prices, it is worth investigating whether the use of these strategies has changed. If so, how has it changed? This paper argues that the use of traditional sourcing strategies is still relevant in today's economy, but the way of thinking about procurement is undergoing a fundamental shift. Based on business trends ascertained from interviews with C-suite executives, this paper hypothesizes that organizational change is the first step towards transforming into a company that can easily navigate unexpected procurement challenges. Specifically, there is an emphasis on the switch from numbers-based short-term risk mitigation towards a holistic, flexible, and agile procurement strategy. To achieve such

objectives, this research highlights the need for a refocus of procurement competencies such as supplier relationship management, intellectual curiosity, critical thinking, creativity, and employee engagement.

The literature review below will address the range of factors that have compounded the difficulty of successful sourcing strategies. Sustainability & climate change, legislation, geopolitical conflicts, nearshoring, diversification, and other related factors have become principal factors in the assessment of a material's total cost of ownership (TCO). As the industry heats up due to these issues, our research finds that organizational development is at the forefront of executives' thoughts when managing the long-term success of their company's procurement.

Literature Review

Literature on strategic sourcing is well-established. Businesses and researchers alike are well-adapted to making decisions based on Kraljic's matrix¹, Porter's Five forces², and the seven steps of strategic sourcing³. Research in this area has consistently found that the importance of purchasing and in-depth supply chain management has steadily increased⁴. Despite this increase in organizational value placed on strategic sourcing, recent global events such as the COVID-19 pandemic, inter-state war, climate change, and regulatory challenges have added an extra layer of complexity for sourcing processes. For example, Craighead et al. highlight Toyota's inability to

¹ Kraljic, Peter. "Purchasing Must Become Supply Management." *Harvard Business Review*. Harvard Business Publishing, August 1, 2014. <https://hbr.org/1983/09/purchasing-must-become-supply-management>.

² Porter, M.E. (1997), "Competitive Strategy", *Measuring Business Excellence*, Vol. 1 No. 2, pp. 12-17. <https://doi.org/10.1108/eb025476>

³ Clegg, Helen, and Susan Montgomery. "7 steps for sourcing information products." *Information Outlook* 9, no. 12 (2005): 34+. *Gale Academic OneFile* (accessed October 29, 2022). https://link.gale.com/apps/doc/A140670082/AONE?u=tel_a_utl&sid=bookmark-AONE&xid=1de70692.

⁴ Ellram, Lisa, and Wendy L. Tate. 2015. "Redefining Supply Management's Contribution in Services Sourcing." *Journal of Purchasing & Supply Management* 21 (1): 64–78. doi:10.1016/j.pursup.2014.10.001.

learn from low-probability risk scenarios to diversify their sourcing portfolio⁵. Despite hands-on experience with low probability/high impact risks, most companies tend to “fortify” rather than diversify.⁶ Historically, sourcing risks have been mitigated using a variety of methods that prioritize short-term solutions. Gaudenzi et al. (2018) point out that regardless of what is to be done, current procurement strategies need to adapt significantly in multiple ways to tackle the issues posed by volatile market prices⁷.

Traditionally, supply chain managers & business schools look to the key tools developed by Kraljic, Porter, & Kearney consulting. Though not an exhaustive list, these tools have been used in tandem to develop a company’s strategic sourcing initiatives for decades⁸. In the context of higher market volatility of prices, especially for commodities, these tools may need to be reexamined to determine whether they are still as effective at reducing supply costs. For example, in recent research, Rice has highlighted the need to adapt the application of Porter’s Five Forces model to risk management⁹. Given the market shifts towards more sustainable sourcing initiatives, there has been some research into the transformation of these traditional tools to consider environmental impact during the supplier selection process¹⁰. As factors such as

⁵ Goldschmidt, Kyle, Mirko Kremer, Douglas J. Thomas, and Christopher W. Craighead. “Strategic Sourcing under Severe Disruption Risk: Learning Failures and under-Diversification Bias.” *Manufacturing & Service Operations Management* 23, no. 4 (April 28, 2020): 761–80. <https://doi.org/10.1287/msom.2020.0907>.

⁶ Whitney, Daniel E., Jianxi Luo, and Daniel A. Heller. “The Benefits and Constraints of Temporary Sourcing Diversification in Supply Chain Disruption and Recovery.” *Journal of purchasing and supply management* 20, no. 4 (2014): 238–250.

⁷ Gaudenzi, Barbara, George A. Zsidisin, Janet L. Hartley, and Lutz Kaufmann. “An Exploration of Factors Influencing the Choice of Commodity Price Risk Mitigation Strategies.” *Journal of Purchasing and Supply Management* 24, no. 3 (June 2018): 218–37. <https://doi.org/10.1016/j.pursup.2017.01.004>.

⁸ Strickler, Leanne. “Strategic Sourcing: Understanding the 7-Step Strategic Sourcing Process.” SupplierGATEWAY, January 4, 2023. <https://www.suppliergateway.com/2021/08/05/understanding-the-famous-7-step-strategic-sourcing-process/>.

⁹ Rice, John F. 2022. “Adaptation of Porter’s Five Forces Model to Risk Management.” *Defense Acquisition Research Journal: A Publication of the Defense Acquisition University* 29 (2): 126–39. doi:10.22594/dau.21-890.29.02.

¹⁰ Garzon, Felipe Sanchez, Manon Enjolras, Mauricio Camargo, and Laure Morel. “A Green Procurement Methodology Based on Kraljic Matrix for Supplier’s Evaluation and Selection: A Case Study from the Chemical

sustainability, risk management, and international geopolitics become more relevant to procurement for many companies, the difficulty of supply chain management on the sourcing side continues to grow.

For many organizations, mitigating price volatility involves substitution or supplier switching rather than capital-intensive vertical integration and other long-term solutions¹¹. Current research indicates that companies tend to be reactive rather than proactive in response to commodity price volatility (CPV). Furthermore, supply chain risk management strategies in literature rarely focus on the long-term benefits of disruption risk mitigation.¹² Driving this phenomenon is the sense that risk management has traditionally been seen as more of a plan to react rather than a strategic long-term priority. Folding risk management into the foundational skillsets of procurement employees may be critical in the coming years.

Commodity price variance has been exceptionally extreme during the past two decades relative to historical trends.¹³ The expanded volatility of commodity pricing across the board, including corn, oil, steel, wheat, and more, has placed an increased pressure on supply chain risk management. In fact, CPV is considered a subcategory of supply chain risk.¹⁴ Literature that benchmarks the effectiveness of various CPV mitigation strategies is limited; the work of

Sector.” *Supply Chain Forum: International Journal* 20, no. 3 (September 2019): 185–201. doi:10.1080/16258312.2019.1622446.

¹¹ Pellegrino, Roberta, Nicola Costantino, and Danilo Tauro. “Supply Chain Finance: A Supply Chain-Oriented Perspective to Mitigate Commodity Risk and Pricing Volatility.” *Journal of Purchasing and Supply Management* 25, no. 2 (March 2019): 118–33. <https://doi.org/10.1016/j.pursup.2018.03.004>.

¹² Whitney et al.

¹³ Karali, Berna, and Gabriel J. Power. “Short- and Long-Run Determinants of Commodity Price Volatility.” *American Journal of Agricultural Economics* 95, no. 3 (January 5, 2013): 724–38. <https://doi.org/10.1093/ajae/aas122>.

¹⁴ Fischl, Maria, Maike Scherrer-Rathje, and Thomas Friedli. 2014. “Digging Deeper into Supply Risk: A Systematic Literature Review on Price Risks.” *Supply Chain Management* 19 (5/6): 1–38. doi:10.1108/SCM-12-2013-0474.

Gaudenzi et al. is an example of research that seeks to understand this issue.¹⁵ The authors argue that Total Cost of Ownership (TCO) and Real Options Valuation (ROV) must be used in tandem to assess commodity price risk mitigation strategies. In other words, handling variable prices when sourcing key commodities needs a holistic, flexible approach.

Further important research on tackling CPV through supply chain strategies has been done by Costantino et al., who argue that the literature on this topic is nascent. The paper proposes a Return on Assets (ROA) model which can be used to determine the appropriate mitigation strategy “on a commodity-by-commodity base.”¹⁶ Researchers & policymakers alike have identified the erratic & unpredictable nature of commodity prices in recent years, which adds costs to companies whose contracts and terms have not hedged for such concerns.¹⁷ Some industries, such as agriculture and oil, have little wiggle room to hide cost, so consumers feel the full force of these price changes.¹⁸ Across the many industries that draw on commodities as raw material inputs, there is a critical lack of tools to determine the best risk mitigation strategies in each context. Current strategies focus on hedging to avoid the detrimental effects of CPV, but total value of a product from procurement to sale is another important angle for understanding more three-dimensional approaches to risk management. Operating on the assumption that events such as climate change induced poor harvest or war in Ukraine are unpredictable, organizations have no choice but to prepare risk strategies for the future or suffer the costs.

¹⁵ Gaudenzi, B., Zsidisin, G.A. and Pellegrino, R. (2020), "Measuring the financial effects of mitigating commodity price volatility in supply chains", *Supply Chain Management*, Vol. 26 No. 1, pp. 17-31. <https://doi.org/10.1108/SCM-02-2020-0047>

¹⁶ Costantino, N, R Pellegrino, and D Tauro. “Commodity Price Volatility Mitigation in Supply Chain Risk Management: Real Options to Assess the Value of Flexibility-Driven Strategies.” In 2016 *IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, 2016-:129–133. IEEE, 2016.

¹⁷ Min, Hokey. “Examining the Impact of Energy Price Volatility on Commodity Prices from Energy Supply Chain Perspectives.” *Energies (19961073)* 15, no. 21 (November 2022): 7957. doi:10.3390/en15217957.

¹⁸ Assefa, T.T., Meuwissen, M.P. and Oude Lansink, A.G. (2015), Price Volatility Transmission in Food Supply Chains: A Literature Review. *Agribusiness*, 31: 3-13. <https://doi-org.utk.idm.oclc.org/10.1002/agr.21380>

In addition to price volatility, scarcity is also becoming an even greater issue for supply chain organizations. As population growth and industrialization march forward, so does the accelerating consumption of Earth's resources. Bell et al. (2012) argue that there is a research need focusing on resource scarcity and closed-loop supply chains; the sustainable recirculation of natural resources is a commodity sourcing method that is not considered as frequently as short or medium-term solutions.¹⁹ There is a need to see how advanced sustainability initiatives such as comprehensive circular economies can mitigate or even eliminate price volatility by giving organizations more control over their sourcing. Sustainable initiatives represent another opportunity that will mitigate long-term volatility at the cost of more significant resources upfront.

Diversification is another important part of supply chain risk management, and literature on this topic tends to revolve around the dichotomy between diversifying and fortifying. For example, Whitney et al. find that in the strategic sourcing of technically complex products, even relying on temporary diversification to deal with an unexpected crisis such as extreme price volatility, war, or a natural disaster is not an effective strategy.²⁰ Diversification tactics such as dual sourcing can push prices down for buyers,²¹ but "dishonest" tactics such as pitting suppliers against one another can also sour relationships and lead to long-term losses.²² Both supplier diversification and committing to one supplier (fortification) have unique costs and benefits.

¹⁹ Bell, John E., Diane A. Mollenkopf, and Hannah J. Stolze. "Natural Resource Scarcity and the Closed-Loop Supply Chain: A Resource-Advantage View." *International Journal of Physical Distribution & Logistics Management* 43, no. 5/6 (June 7, 2013): 351–79. <https://doi.org/10.1108/ijpdlm-03-2012-0092>.

²⁰ Whitney et al.

²¹ Niu, Baozhuang, Jiawei Li, Jie Zhang, Hsing Kenneth Cheng, and Yinliang (Ricky) Tan. "Strategic Analysis of Dual Sourcing and Dual Channel with an Unreliable Alternative Supplier." *Production and operations management* 28, no. 3 (2019): 570–587.

²² Rossetti, Christian L., and Thomas Y. Choi. 2005. "On the Dark Side of Strategic Sourcing: Experiences from the Aerospace Industry." *Academy of Management Executive* 19 (1): 46–60. doi:10.5465/AME.2005.15841951.

While diversification has its merits in reducing both cost and risk exposure, it is becoming increasingly important to consider sourcing partnerships as valued relationships to improve long-term outlook when risk does not manifest. Ideally, the literature points towards a world where a supply chain is diversified in sources and thus shielded from risk, but it still holds tight to key suppliers with deeper and more meaningful business relationships. Achieving the benefits of both strategies without the downsides of either appears far-fetched, but a fundamental shift in procurement talent may make this possible.

The debate between nearshoring and maintaining a global sourcing network is also relevant, as this paper draws on qualitative data from several multinational corporations (MNCs). Kearney's annual reshoring index indicates that attitudes in the U.S. are moving more towards reshoring.²³ As a risk management tactic, this is meant to simplify operations and reduce the impact of price volatility. Maintaining global operations is requiring increasingly more organizational development along information management and integration lines.²⁴ This debate has implications on international relations and policy; events such as the U.S. trade war with China significantly impact the price volatility of commodities such as steel and soybeans. In this context, an improved attitude towards reshoring coincides with protective trade policy. However, in industries that cannot nearshore due to environmentally sensitive raw inputs such as cocoa or palm oil, this shift in attitudes is detrimental. In dealing with more volatile prices induced by protectionism, companies need to reach for new strategies to avoid significant losses.

²³ Van den Bossche, Patrick, Brian Ehrig, Omar Troncoso, and Shay Luo. "Global Pandemic Roils 2020 Reshoring Index, Shifting Focus from Reshoring to Right-Shoring." Kearney. AT Kearney, 2021. <https://www.kenarney.com/operations-performance-transformation/us-reshoring-index>.

²⁴ Trautmann, Gerhard, Virpi Turkulainen, Evi Hartmann, and Lydia Bals. 2009. "Integration in the Global Sourcing Organization — an Information Processing Perspective." *Journal of Supply Chain Management* 45 (2): 57–74. doi:10.1111/j.1745-493X.2009.03163.x.

Research that incorporates policymaking into the CPV/Supply Chain Risk Management (SCRM) dynamic is almost nonexistent. It is important to recognize that policymakers have a direct hand in determining the outcome of tariffs and non-tariff barriers to trade as well as commodity subsidies and international conflicts. The role that policymakers have in the international economy is staggering, as many countries (including the United States) have implemented laws seeking to “decouple” from international partners such as China.²⁵ For example, copper has suffered from both trade-war induced volatility as well as political uncertainty that has shaken global supply.²⁶ Legislators are a critical piece of the puzzle in preempting CPV with appropriate supply chain risk mitigation strategies, so a core part of our research focuses on bridging the gap between organizations and legislators on this issue.

One consideration involves whether analysis of CPV and traditional strategies to mitigate it are the right way to tackle this issue at all. There is a need to understand how assessing the Total Value Optimization (TVO) can be used to better manage supply chain risks. Research from the Global Supply Chain Institute at the University of Tennessee has highlighted other opportunities to bolster the supply chain as opposed to traditional volatility mitigation risks such as end-to-end integration and a redesign of supply chain human resource management²⁷. The redesign of supply chain human resource management (HRM) is particularly important, as it offers an opportunity to build new procurement skills from the ground up amidst volatile prices & commodity scarcity.

²⁵ Zhang, Yuyan. “Eight New Challenges Faced by Global Economy.” *East Asian Affairs* 01, no. 02 (2021). <https://doi.org/10.1142/s2737557921500078>.

²⁶ Ioannou, Stefan. “Trade War Tensions Driving Demand Uncertainty and Price Volatility.” 2019. *Wall Street Transcript*, December, 39–42.

²⁷ Bowen, Steven, and Mike Burnette. 2019. “Redefining the Value from End-To-End Integration.” *Supply Chain Management Review* 23 (2): 36–41.

The growing emphasis on the value of procurement teams is not new. Since the turn of the century, the importance of procurement, and the spend associated with it, has boomed. However, with this growth in strategic importance and spend has come an expansion of sourcing complexity and risk. Vitasek (2016) calls this new world of risk and procurement complexity “the new economy”²⁸. In this “new economy”, Chick & Handfield (2012) argue that “existing procurement models may have reached their “use by date”.²⁹ As organizations grapple with geopolitical conflicts, climate change, the elections of populist leaders, a global pandemic, and more, procurement teams are ill equipped to deal with the price volatility created by these events.

Significant price volatility and supply chain complexity are permanent realities of the “new economy.” Despite the increased attention towards corporate procurement teams, companies continue to struggle with volatility undercutting the bottom line in the short-term. While it may seem that companies are at the mercy of unforeseen world-changing events, there are in fact strategies that corporate executives have planned to ensure continuity of business.

Methodology

The focus of this research is to help address increased supply chain volatility and complexity. Qualitative data was used from expert testimony to form the basis of our data. Rather than studying established data that may not clearly incorporate current events, conducting interviews with corporate executives allows a deeper insight into future supply chain strategies that may not yet be in place.

²⁸ Vitasek, Kate. “Strategic Sourcing Business Models.” *Strategic Outsourcing: An International Journal* 9, no. 2 (June 20, 2016): 126–38. <https://doi.org/10.1108/so-02-2016-0003>.

²⁹ Chick, G. and Handfield, R. (2012), *The Procurement Value Proposition*, Kogan, London.

With the approval from the University of Tennessee IRB, we conducted interviews with seven executive-level business leaders from firms across a variety of industries to incorporate the forefront of business practices into current research. The interviewees represented leading firms from the pharmaceutical, food & beverage, agriculture, oil, chemical, technology, and consulting industries. The variety in representation serves to control for any sector-specific trends in procurement strategy that may have skewed results. Seven interviews were conducted over a five-month span from June to November of 2022. The interviews used the same set of guiding questions³⁰ to determine a start and end point, but the line of questioning was allowed to develop organically to limit author bias. Interviewees were informed of the scope of the project at the beginning before being asked for recording and note-taking permission. Subjects that were not recorded are not quoted here, although their expertise is used in general analysis.

All interviews were conducted on Zoom to make use of the automatic recording transcript feature. Transcripts were reviewed and adjusted for inaccuracies. Separate notes were also taken by the researchers during the interview for reference. Both the interview transcripts and notes were codified according to four themes: Environmental and Social Governance (ESG), Legislation & Policymaking, Established Sourcing Strategies, and Organizational Development & Innovation. Responses that fit into these themes were analyzed and compared to established literature to outline key areas of difference. Individual responses were also compared to comments from other participants to determine differences across industries.

All interview recordings and transcripts are stored on a password protected computer in a private file only accessible to researchers. The recordings and associated transcripts will be

³⁰ See Appendix: "Interview Questions"

deleted three months after publication of this thesis. Quotes and paraphrases remain confidential in the results & discussion section. Specific data points are attributed to “industry executives”, and generic job titles are occasionally added for clarity.

Results & Discussion

The hypothesis for this project is intentionally broad to account for the scope of the problem. Predicting future trends and preparing strategies for them is significantly harder than analyzing the past, so these results will need more research to be validated. The interviews were codified into four themes. The researchers attempted to give each theme somewhat equal talking points to gauge executives’ interest across each group. Despite this, as will be discussed below, all the conversations moved towards an unexpected emphasis on organizational development and procurement innovation. While each theme’s relationship to sourcing strategies is highlighted, this research finds that organizational development & innovation is the clear first step in preparing companies for the future.

Environmental & Social Governance

The term "Environmental & Social Governance" (ESG) was first introduced less than 20 years ago via a UN whitepaper advocating for more responsible financial investment. Since its introduction it has evolved and adapted into a major talking point for companies, investors, and politicians alike. ESG has not always been a priority for companies since it was introduced, but today it is clear that most organizations across a variety of industries are at least prepared to speak to its merits. Our research confirms that the most competitive organizations across multiple industries are building entire strategies around the concept of environmental or social sustainability. For example, one CPO in our interviews pointed out that ESG has mixed into the

rest of their strategies as “categorical” with “clear KPIs” that acts as a “make-or-break factor for onboarding suppliers.”

Environmental sustainability initiatives add supply chain complexity and significant fixed costs, but despite these hurdles most companies see the value behind the struggle. Implementing circular economies has cost-reducing properties for companies that use substantial amounts of plastic, glass, or aluminum. Specifically, the pharmaceutical, chemical, and beverage industry executives indicated that their companies are already taking measures to enhance circularity. While greenhouse gas emissions were also talked about in some interviews, our research indicates that the current emphasis is being placed more on circularity, given its shorter ROI, in comparison to the electrification of a transportation fleet or transformation of a factory towards net-zero. This is because circularity offers a buffer in the face of material scarcity. If even a portion of material can be recovered it reduces reliance on virgin material, which is more prone to external risk events. However, some companies such as those in the beverage industry are finding that emissions-friendly alternatives are both better for the environment and cost-cutting.

Companies recognize the potential for cost-reductions and growth from ESG strategies. From a broad strategy perspective, the only recommendation this research can offer is to continue working ESG initiatives into organizational grand strategy. Companies are already getting better and better at turning to circular economies and organizational labor reform to reduce supply chain risk and positively impact the bottom line. The increasing public and investor pressure around ESG has propelled it into high-level conversations at most multinational firms, even if prioritization differs from company to company. For example, even our oil industry executive indicated that ESG is a “top 10 priority” for the company’s strategy although it is not in the top three. Based on these results, we find that enhancing ESG strategies is not

likely to stabilize supply chains in the short term because companies have already been doing this. This is not to say that companies should shift their focus away from ESG or that ESG is no longer important. On the contrary, ESG initiatives exhibit an incredible opportunity for growth and long-term benefit. However, in the context of reducing short-term cost volatility, companies turn to other factors.

Legislation

The two largest concerns expressed along the legislative theme were for the standardization of regulations and the reduction of tariffs. These results are not particularly revolutionary, and they do not indicate that anything has shifted within companies' relationships to governments in recent years. Economic theories have shown that companies specialized in specific industries benefit from trade liberalization, and this holds true across our data. One notable exception is our executive interview from the consulting industry. Given that consulting firms deal with many different industries contemporaneously, the legislative portion of this interview focused more on the experience of specific legislators than the outcome of their legislation. This indicated that at least the consulting industry has some concerns over the design and people of the legislative process, although the implications for procurement strategy are less clear. The biggest takeaway is that legislators should be more receptive to corporate concerns over business related legislation. However, this can be broadly applied to any legislation that affects companies rather than specific procurement issues.

Our research finds that trade liberalization and the removal of tariffs and non-tariff barriers to trade are still a priority for large, specialized companies operating from Europe and North America. This conflicted with our hypothesis that business executives would turn to lawmakers to reduce market volatility. In contrast, legislators do not appear to be any more or

less on the radar of corporate executives. Legislators and the policy decisions they produce are indeed an important factor for organizations to consider. However, given the continuity of the push for liberalization of trade, this factor has not changed substantially in its relationship to supply chain risk management. Rather than increasing efforts to hammer away at the same legislative concerns, companies are turning to other factors to address volatility and risk.

Established Sourcing Strategies

There exists a wide breadth of established sourcing strategies that companies have turned to over decades of growing and adapting to economic challenges and increasing supply chain risks. Nearshoring, reshoring, verticalization, diversification, make vs. buy, zero based budgeting, total cost of ownership (TCO), total value of ownership (TVO), and contract renegotiation are among those most frequently referenced in our interviews.

All these strategies have been around for some time, and each of them appears to be at least on the radar for business executives. For example, both the consulting and food & beverage industries indicate that there is a gradual shift away from using TCO in favor of using TVO. Nearshoring is a viable strategy for some industries such as chemical, but it is impossible for food companies in Europe or the United States to source their cocoa more than 20 degrees latitude away from the equator. Supplier relationship management continues to be important for all industries. Each of these data points highlights one overarching theme that our research suggests: established sourcing strategies continue to be relevant and are not shifting, but the application of them may be.

All the above-mentioned strategies are consistent considerations for company executives looking to mitigate supply chain risks and reduce costs. While focus may shift in the short-term,

company executives can consistently come back to this sourcing toolkit to assist strategic decision-making. How the application of these strategies may be shifting comes down to the people applying these strategies rather than the strategies themselves.

Organizational Development and Procurement Innovation

Despite the focus of our interview questions being spread across a variety of topics³¹, almost all the interviews focused significantly on the notion that the individuals working in the field of procurement may currently be underprepared to deal with the complex issues associated with price volatility expanding supply chain risk. There appears to be a belief among procurement executives that the procurement function needs to undergo a fundamental evolution in capabilities (people skills and tools, primarily) rather than strategy. A VP of Procurement for a major oil company responded to a question about future plans³² by pointing to the need for soft skills such as market awareness, critical thinking, and data analysis and insight among procurement staff. In a separate interview with no connections to other interviewees or question priming, a beverage company procurement manager hit on these same soft skills while emphasizing the shift towards “EQ” rather than “IQ.” Our research structures these shifts along three key factors: interpersonal skills, agility, and cross functionality.

All our interview subjects indicated a shift away from procurement as a technical function that cuts costs towards a fluid position of relationship management, communication, and effective negotiation. As our consulting executive puts it, “the art of procurement becomes a science or art of relationship, trust, and collaboration.” He later asserted that “there’s something

³¹ See Appendix; Note: not all questions were asked in every interview. The questions asked varied based on the course of the conversation and the expertise of each executive.

³² Question: “Do you think your organization still needs to strengthen your strategic sourcing process in future? Can you describe any specific actions or plans?”

new coming to procurement, and that's the relationship and skill set." Notably, in all our interviews, the procurement executives spoke about this shift in the future tense. They are predicting a change that needs to happen to address the volatility crisis, and they actively prompt their CEOs, VPs of Human Resources, and board members to place greater emphasis on this organizational development.

Rather than data analysts and accountants familiar with quantitative methods, statistics, and payment terms, corporate CPOs across a variety of industries are beginning to shift their focus towards "less technical" profiles and those with an ability to effectively communicate and build relationships with suppliers. This accompanies an expanded focus on supplier relationship management, but it also speaks to a greater focus within organizations on having procurement managers that are proactively cooperative with other branches of the company to address concerns and aggregate resources and information. More generally, procurement executives want their teams to be filled with people-persons rather than introverted data experts. Having both quantitative experience and an array of soft skills is great, but companies looking to bolster their supply chains against risk and volatility will soon prioritize the latter.

The second factor that tracks across multiple interviews is agility. Agile procurement managers can better anticipate and respond to short-term risks. Along with an adaptable skillset, agility coincides with the ability to be more proactive. For example, one executive cited the ability to "bring up all likely scenarios rather than predicting just one" when dealing with anticipated risk. Procurement managers are flexible in their ability to tackle any circumstance regardless of the level of risk. However, another executive points out that "no matter how much you can plan, you're gonna get stung by something." This new class of procurement managers quickly adapts to unexpected crises and mitigates the fallout for the rest of the organization.

Rather than leaving decisions to the top executives and waiting for direction on how to respond, procurement managers in this ideal world would be a flexible front line of defense for unexpected risk.

Training is a big part of bolstering agility. One interviewee points out that they are actively seeking to better train their buyers on how to understand a commodity index, so they are better equipped to make decisions with the information themselves. Another subject pointed to the value of training analysts and managers on how to measure risk so they can quickly respond. The key to agility is an increased ability to move quickly when an unexpected risk event occurs such as the sudden fluctuation of a commodity price. Business leaders prioritize this skill along with the social and cross-functional skills because it makes a procurement team more resilient and capable regardless of the issue timeframe.

The final capability of the new class of procurement specialists is cross-functionality, which is broken down into cross-functional knowledge and cross-functional communication. Cross-functional knowledge entails the ability to apply a variety of perspectives to a given procurement problem. For example, an analyst may be skilled in both data analysis and political science, allowing them the ability to track flows of goods across borders and explain why flows may falter. A procurement specialist with a background in contract law can better understand and negotiate long-term contracts with suppliers while also applying the soft skill of relationship building. One subject pointed out that they are increasingly looking to hire procurement analysts from oil plant planning positions because it gives them a more expansive knowledge base for the job.

Cross-functional communication occurs where procurement professionals proactively seek information and support from other functions of the organization to better inform their

decisions. Where the procurement team lacks expertise, they increasingly turn to coworkers for more support rather than deciding based solely on the data that is immediately available. This allows for a more three-dimensional picture of the situation and opens the door to a diverse array of perspectives. Two executives indicated that cross-functional collaboration is an increasing focus of procurement from the top down while most subjects touched on its value. Where a manager lacks the wide knowledge base to make a fully informed decision, he or she turns to others for support.

All three factors combine into a new breed of procurement professional that is fundamentally different from how companies hire today. Procurement executives are the first to answer a company's CEO and board about questions of strategic sourcing and how to deal with increased price volatility. We identified broad trends across all the themes, but we found that organizational development and the innovation of procurement as a function is on the forefront of corporate responses to supply chain risk and volatility. Rather than seeking to patch the holes in a supply chain "boat" to stay afloat with traditional sourcing strategies or sustainable investments, companies will soon begin to evolve their procurement teams with a new skillset which will change the profile of the function to be predominantly strategic. The new procurement specialist is socially adept, responds well in a crisis, anticipates a variety of roadblocks, and has a wide range of knowledge rather than specialization in data analysis or any other single field. He or she actively manages relationships with company suppliers and treats these relationships as strategic partnerships that need to be nurtured.

Conclusion

This paper acknowledges scholarly work and business concerns that we are living in an age of increased supply chain volatility. Both the prices of commodities and key supply chain

networks are becoming more exposed to risk from a variety of sources across the environment, politics, and trade. In response, companies are responding in a myriad of ways to keep costs low and maintain their bottom line for investors. However, the specific connection between this increased volatility and the business-level response from corporate executives is not well established. This paper seeks to bridge this gap by arguing that the procurement profession will soon undergo a fundamental evolution at the direction of corporate executives from a wide range of industries. This evolution will see procurement specialists gradually shift from data-loving hard-skills people to those with more soft-skills such as communication, relationship building, cooperation, and cross-functional experience.

What does this mean for businesses, scholars, and aspiring procurement professionals? Based on our research, businesses are likely to already have these ideas circulating among high level procurement professionals and potentially elsewhere in the organization. This paper encourages executives to connect CPOs and VPs of Procurement with HR executives to expand the conversation and accelerate the transition. This change should mitigate supply chain risks and the fallout from price volatility, but further quantitative research must be done to confirm the connection between this organizational development and the bottom line. Scholars can build on this work by better connecting the current risk/volatility crisis with this executive-backed potential solution. Those with an eye on entering procurement as a career should prioritize improving their soft skills and expanding their knowledge base. We anticipate that in the coming years or even months the companies we have interviewed will alter their hiring and training practices to select for these skills in procurement roles. In five to ten years the modern company's procurement team may look more like today's tech-savvy socially adept startups than

a team of suits standing around a data chart, and corporate executives seem to believe that the company will be better off because of it.

Bibliography

- Assefa, T.T., Meuwissen, M.P. and Oude Lansink, A.G. (2015), Price Volatility Transmission in Food Supply Chains: A Literature Review. *Agribusiness*, 31: 3-13. <https://doi-org.utk.idm.oclc.org/10.1002/agr.21380>
- Bell, John E., Diane A. Mollenkopf, and Hannah J. Stolze. "Natural Resource Scarcity and the Closed-Loop Supply Chain: A Resource-Advantage View." *International Journal of Physical Distribution & Logistics Management* 43, no. 5/6 (June 7, 2013): 351–79. <https://doi.org/10.1108/ijpdlm-03-2012-0092>.
- Bowen, Steven, and Mike Burnette. 2019. "Redefining the Value from End-To-End Integration." *Supply Chain Management Review* 23 (2): 36–41.
- Chick, G. and Handfield, R. (2012), *The Procurement Value Proposition*, Kogan, London.
- Clegg, Helen, and Susan Montgomery. "7 steps for sourcing information products." *Information Outlook* 9, no. 12 (2005): 34+. Gale Academic OneFile (accessed October 29, 2022). https://link.gale.com/apps/doc/A140670082/AONE?u=tel_a_utl&sid=bookmark-AONE&xid=1de70692.
- Costantino, N, R Pellegrino, and D Tauro. "Commodity Price Volatility Mitigation in Supply Chain Risk Management: Real Options to Assess the Value of Flexibility-Driven Strategies." In 2016 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), 2016-:129–133. IEEE, 2016.
- Ellram, Lisa, and Wendy L. Tate. 2015. "Redefining Supply Management's Contribution in Services Sourcing." *Journal of Purchasing & Supply Management* 21 (1): 64–78. doi:10.1016/j.pursup.2014.10.001.
- Fischl, Maria, Maike Scherrer-Rathje, and Thomas Friedli. 2014. "Digging Deeper into Supply Risk: A Systematic Literature Review on Price Risks." *Supply Chain Management* 19 (5/6): 1–38. doi:10.1108/SCM-12-2013-0474.
- Garzon, Felipe Sanchez, Manon Enjolras, Mauricio Camargo, and Laure Morel. "A Green Procurement Methodology Based on Kraljic Matrix for Supplier's Evaluation and Selection: A Case Study from the Chemical Sector." *Supply Chain Forum: International Journal* 20, no. 3 (September 2019): 185–201. doi:10.1080/16258312.2019.1622446.
- Gaudenzi, B., Zsidisin, G.A. and Pellegrino, R. (2020), "Measuring the financial effects of mitigating commodity price volatility in supply chains", *Supply Chain Management*, Vol. 26 No. 1, pp. 17-31. <https://doi.org/10.1108/SCM-02-2020-0047>

- Gaudenzi, Barbara, George A. Zsidisin, Janet L. Hartley, and Lutz Kaufmann. "An Exploration of Factors Influencing the Choice of Commodity Price Risk Mitigation Strategies." *Journal of Purchasing and Supply Management* 24, no. 3 (June 2018): 218–37. <https://doi.org/10.1016/j.pursup.2017.01.004>.
- Goldschmidt, Kyle, Mirko Kremer, Douglas J. Thomas, and Christopher W. Craighead. "Strategic Sourcing under Severe Disruption Risk: Learning Failures and under-Diversification Bias." *Manufacturing & Service Operations Management* 23, no. 4 (April 28, 2020): 761–80. <https://doi.org/10.1287/msom.2020.0907>.
- Ioannou, Stefan. "Trade War Tensions Driving Demand Uncertainty and Price Volatility." 2019. Wall Street Transcript, December, 39–42.
- Karali, Berna, and Gabriel J. Power. "Short- and Long-Run Determinants of Commodity Price Volatility." *American Journal of Agricultural Economics* 95, no. 3 (January 5, 2013): 724–38. <https://doi.org/10.1093/ajae/aas122>.
- Kraljic, Peter. "Purchasing Must Become Supply Management." Harvard Business Review. Harvard Business Publishing, August 1, 2014. <https://hbr.org/1983/09/purchasing-must-become-supply-management>.
- Min, Hokey. "Examining the Impact of Energy Price Volatility on Commodity Prices from Energy Supply Chain Perspectives." *Energies* (19961073) 15, no. 21 (November 2022): 7957. doi:10.3390/en15217957.
- Niu, Baozhuang, Jiawei Li, Jie Zhang, Hsing Kenneth Cheng, and Yinliang (Ricky) Tan. "Strategic Analysis of Dual Sourcing and Dual Channel with an Unreliable Alternative Supplier." *Production and operations management* 28, no. 3 (2019): 570–587.
- Pellegrino, Roberta, Nicola Costantino, and Danilo Tauro. "Supply Chain Finance: A Supply Chain-Oriented Perspective to Mitigate Commodity Risk and Pricing Volatility." *Journal of Purchasing and Supply Management* 25, no. 2 (March 2019): 118–33. <https://doi.org/10.1016/j.pursup.2018.03.004>.
- Porter, M.E. (1997), "COMPETITIVE STRATEGY", *Measuring Business Excellence*, Vol. 1 No. 2, pp. 12-17. <https://doi.org/10.1108/eb025476>
- Rice, John F. 2022. "Adaptation of Porter's Five Forces Model to Risk Management." *Defense Acquisition Research Journal: A Publication of the Defense Acquisition University* 29 (2): 126–39. doi:10.22594/dau.21-890.29.02.
- Rossetti, Christian L., and Thomas Y. Choi. 2005. "On the Dark Side of Strategic Sourcing: Experiences from the Aerospace Industry." *Academy of Management Executive* 19 (1): 46–60. doi:10.5465/AME.2005.15841951.

- Strickler, Leanne. "Strategic Sourcing: Understanding the 7-Step Strategic Sourcing Process." SupplierGATEWAY, January 4, 2023. <https://www.suppliergateway.com/2021/08/05/understanding-the-famous-7-step-strategic-sourcing-process/>.
- Trautmann, Gerhard, Virpi Turkulainen, Evi Hartmann, and Lydia Bals. 2009. "Integration in the Global Sourcing Organization — an Information Processing Perspective." *Journal of Supply Chain Management* 45 (2): 57–74. doi:10.1111/j.1745-493X.2009.03163.x.
- Van den Bossche, Patrick, Brian Ehrig, Omar Troncoso, and Shay Luo. "Global Pandemic Roils 2020 Reshoring Index, Shifting Focus from Reshoring to Right-Shoring." Kearney. AT Kearney, 2021. <https://www.kenarney.com/operations-performance-transformation/us-reshoring-index>.
- Vitasek, Kate. "Strategic Sourcing Business Models." *Strategic Outsourcing: An International Journal* 9, no. 2 (June 20, 2016): 126–38. <https://doi.org/10.1108/so-02-2016-0003>.
- Whitney, Daniel E., Jianxi Luo, and Daniel A. Heller. "The Benefits and Constraints of Temporary Sourcing Diversification in Supply Chain Disruption and Recovery." *Journal of purchasing and supply management* 20, no. 4 (2014): 238–250.
- Zhang, Yuyan. "Eight New Challenges Faced by Global Economy." *East Asian Affairs* 01, no. 02 (2021). <https://doi.org/10.1142/s2737557921500078>.

Appendix

Interview Questions

Company and interviewee background

1. State your name and describe your position in the organization, the department you work in, and how long you have been part of the organization.
2. Describe and help us to understand your organization and the industry you operate in.

Sourcing Strategies in current context

3. To better understand your sourcing context, would you explain to us a basic map of your supply chain?
4. What parts of your sourcing process are most impacted by commodity volatility?
5. Do you look short term or long term for resolving this issue?
6. What are your essential commodities and the major challenges with sourcing them globally?
7. What percentage of your suppliers are international? (What % of your spend is considered high risk?)
8. What is the company's strategic sourcing process and approach, and how has it changed since the pandemic and other global disruptions?
9. Does your company have a proactive or reactive plan for price and sourcing volatility?
10. What steps has your company taken to better manage the risk of increased price volatility in your essential commodities?
11. Can you give an example of the plan's success and failure?
12. Do you have a purchasing/procurement strategy that includes market dynamics such as stability, geo-political events and sustainment? Can you provide specific examples?
13. How have the nature of your supplier relationships changed, and do you have alternate suppliers in place to protect profit and revenue at risk?
14. Do you have a process or risk management program in place to mitigate these challenges and what is it?
15. Has increased volatility changed how you view your sourcing processes? How can you measure the impact?
16. What has changed over the past two years, do you have examples? (Best practices and how you are measuring their effectiveness)
17. Who oversees volatility governance at your organization? Is it strictly managed or approached on an as-needed basis?
18. Follow up (if not already clarified): Is there a dedicated team or process to handle sourcing volatility?
19. Is your company completely reliant on commodity X, or are there alternative options? (such as?)
20. What decision criteria related to cost and TCO are factored into alternative options?
21. Does your company invest in R&D, process improvement, or product design to reduce internal demand for commodity X? Can you give an example?
22. How are you making your supply chain more resilient or agile in response to commodity volatility?
23. Have your buyer/customer profiles changed and if so, how?

24. Have there been any changes to your technological resources or tools used?
25. How have trade policies impacted your sourcing strategies? Please provide a negative and positive example.
26. Tariffs, customs duties other export/import regulations
27. Has onshoring been considered to limit exposure to supply chain disruptions and insulate against risk in commodities markets?
28. How would you deal with sourcing that cannot be done nearby?
29. What actions has your company taken to embed ESG sustainability in your sourcing strategies?
30. What risks to social sustainability are present in your company's supply chain and factor those in your sourcing strategies? What are you doing to combat these risks?
31. Potential follow up: What countries do you primarily source from or advocate sourcing from?
32. Does your company use ROI as a metric to measure success in sustainability changes? How do sustainability-centered investments compare to more traditional types of investments?

Summary Comments

33. What do you think your organization still needs to strengthen your strategic sourcing process in the future? Can you describe any actions or plans??
34. Is there anything else about this topic that you would like to discuss?
35. If you could ask legislators in the EU, US or other countries to pass bills to help the future sourcing approach, what trade, economic or social policy would you ask for?