Assessing Long-Term Country-Specific Sourcing Risk Using J-Curve Openness-Stability Analysis

R. Ray Gehani
Graduate Programs in Global Technology Innovation, The University of Akron, Akron, OH - USA

***Abstract*--In managing many technologies, supply-chain sourcing accounts for a large share of the total cost of goods sold (COGS) that drives the competitive advantage of a multi-national enterprise (MNE). To gain significant COGS advantages in the short-term, many technology-intensive MNEs collaborate some parts of their value-adding activities with the developing and emerging economies that offer low wages and large labor pools. These low-cost countries, however, have some hidden long-term sourcing risks as well. Until recently, there has been nascent research and no comprehensive models available for assessing such long-term sourcing risks.**

Many prior studies on modeling supply-chain risk implicitly assume global convergence rather than exploring national specificity, though supply-chain managers are increasingly concerned with country-specific risks [19]. This study, therefore, fills an important gap in research literature, by applying Ian Bremmer's J-Curve Openness-Stability model [1] to two illustrative applications: (A) sourcing from a low cost country such as India, and others, and (B) sourcing of oil and gas from the Middle East. An additional contribution was made with an innovative way to qualitatively assess long-term sourcing risk for BRIC (Brazil, Russia, India and China) countries and 8 low cost countries, relative to the U.S. In conclusion, research limitations are reviewed and some managerial and policy implications are proposed.

I. INTRODUCTION

A. Long-Term Sourcing Risk From Low Cost Countries

Many corporate leaders are concerned that supply chain risks are rising [21]. Supply-chains in general, and sourcing in particular, account for a large share of the total cost of goods sold (COGS) that drives the competitive advantage of an enterprise [6]. The supply-chain sourcing risk management (SSRM), however, is a multi-disciplinary field with nascent research [21] that may be of great interest to researchers with diverse perspectives, goals, and underlying assumptions. It is acknowledged that there are significant 'gaps' in (a) definition of SSRM, (b) process of responding to different risk events, and (c) methodologies that may be used for SSRM. A noteworthy but urgent need in SSRM is to assessing the long-term sourcing risk of a country in addition to considering the low cost advantages of a country in the short-term.

The recent Arab Uprising has illustrated how low cost economies of Morocco, Tunisia, Syria, and Egypt can quickly slide into unstable civil wars when their strong rulers are deposed by public uprising. In the modern highly inter-dependent global age, political instability in leadership and lack of socio-economic openness can make certain emerging economies to quickly devolve into severe economic disruption, nuclear terrorism, drug trafficking, transnational crime networks, and health-care epidemics. These are serious concerns for most global supply-chain managers. Some of the emerging economies may be attractive in the short term because of low-cost sourcing. But these countries may also have high long-term risks because these are ruled by authoritarian leadership regimes with low openness, and few interactions internal and external with global political, economic, and social influences.

For example, the U.S. military needs to source rare metals such as titanium from different countries around the world. With increasing pressure on defense budget contraction, the military supply-chain managers often prefer to negotiate so that the sourcing country holds the stock of rare metals in their warehouse until needed (instead of purchasing the inventory and stocking in the warehouses owned by the U.S. military) [13]. The military can, therefore, not rely on the countries with lowest cost now but may have high long-term sourcing risks in the future.

Motivation and Framework for This Study

This paper reviews the literature for the theoretical frameworks that can be used to reliably assess the long-term sourcing risks of different emerging and developing countries which offer short-term low cost advantages. Then Bremmer's J-Curve model is applied to estimate the long-term sourcing risk based on two dimensions: (a) social and economic openness, and (b) leadership stability. Archival databases were used to qualitatively estimate socio-economic openness, leadership stability, and long-term risk of 4 BRIC (Brazil, Russia, India, and China) countries and 8 other low cost sourcing countries. Finally, conclusions with research limitations and future implications for managers and researchers are provided.

B. Theoretical Background and Review of Previous Research

In the 1990s, many enterprises globalized their supply-chains to reduce costs, gain new markets, or improve their flexibility. These efforts, however, extended their supply-chains, added complexity, and made these global supply-chains more vulnerable to disruptions due to natural disaster and man-made actions [4]. Whereas some disruptions in global supply-chains due to reliability of suppliers have been acknowledged, there is much less research on the systemic long-term risk of sourcing from different countries. For example, in 2007 Mattel recalled 19 million toys because of lead paint and small magnet parts. The firm suffered severe disruptions in supply chain and reputation [7]. Whereas Mattel acknowledged the flaws in the design of their toys and reliability of their suppliers causing such disruption, the long-term sourcing risk from China was barely considered in selecting their risk mitigation solutions.

Over a decade ago, literature on supply chain risks in major research publications was reviewed by Paulsson [18]. Preliminary assessment of business and supply chain risks have been explored over many disciplines by some researchers [9; 10]. These diverse disciplines include supply-chain management [23], logistics [16], production & operations management [12], international business [12], macro-economic and strategic management [8]. These different disciplines tend to have different primary objectives for investigating risk.

For example, supply chain management aims to look at risk while balancing profitability with productivity, speed, and flexibility. On the other hand, international business focuses on the impact of macro-national environmental forces such as politics, economics, socio-cultural differences, and technological variations. The discipline of macroeconomics examines transactional costs, transfer pricing, trade deficits, and tariffs. Researchers from these different disciplines tend to define supply-chain risks differently. This study uses the supply-chain management perspective in conjunction with macroeconomic context.

In this paper, we are fine-tuning and focusing our attention on assessment of long-term sourcing risk in different low-cost countries. This is a sub-set of an overall risk management process for global supply-chain, which can be separated into five steps: (1) risk identification, (2) risk assessment and evaluation, (3) selecting risk management strategies, (4) implementing the risk management strategies, and (5) supply-chain risk mitigation [16].

Two major frameworks for risk assessment have been proposed [17]. These are: probabilistic choice (PC), and risk analysis (RA). The PC risk assessment is based on the assumption that in the long-term, and after much repetition, the risky events are compensated by the non-risky reliable events. Therefore, a risk management solution is derived from average behavior of the repetitive events. On the other hand, certain risky events may be rare 'Black Swan' events, and these do not take place with enough repetition. For example, SARS epidemic, or the Japanese Tsunami and nuclear disaster, may be considered as 'Black Swan' risky events. Therefore, probabilistic estimation cannot be used for such events. In such cases, RA is based on estimating minimum regret for the risky events. In some risky instances, a hybrid combination of PC risk assessment and RA assessment may be employed. In this paper, the J-Curve model is based on RA assessment approach.

Extensive literature review for this study revealed that very few supply-chain management researchers explicitly address national specificity, or take into account country of sourcing in their assessment of long-term sourcing risk. Often global convergence is implied. Only recently, one study on supply-chain disruption management specifically accounted for global convergence assumption relative to national specificity [19]. The present study, therefore, fills a much needed gap in the literature on supply-chain risk management.

C. Long-Term Country Risk

Bremmer proposed a new framework and a visual assessment tool that can be applied to estimate the long-term risk of sourcing in different emerging economies [1]. The J-Curve based risk assessment depends on two dimensions: (1) long-term leadership and political stability, and (2) socio-economic openness.

Developed economies such as the United States, Canada, Japan, France and Germany are economically and politically stable, because these are continually invigorated by their socio-cultural interactions within and outside their countries. These economies attract large amounts of foreign direct investments and international trade from outside investors because many global supply-chain managers are confident that temporary political and social conflicts in these economies will be promptly resolved by their well-established and counter-balancing institutions. In economies such as the U.S., institutions and not the personalities matter more. For example, the political conflict between Al Gore and George W. Bush in the U.S. presidential election of 2000 was promptly resolved by the US Supreme Court [21].

On the other hand, certain very low cost countries like Myanmar, Belarus, and Zimbabwe are seemingly stable countries – because these are closed to socio-economic interactions within and outside [1]. Outside influences and economic interactions can rapidly induce these countries into instability and political collapse in the long-term.

According to Bremmer's J-curve model, the low cost emerging economy that is stable because it is closed must go through highly risky transitional instability in order to emerge as a stable emerging economy [1]. Whereas South Africa successfully survived such transformation from stable-close to stable-open economy, Yugoslavia failed to do so. Low-cost economies with low levels of socio-economic openness tend to carry a high long-term risk of potential collapse.

II. APPLYING J-CURVE OPENNESS – STABILITY MODEL TO ASSESS LONG-TERM COUNTRY SOURCING RISK

The evolutionary trajectories of countries and their risk have been proposed by some researchers for a few decades. James Davies proposed in the 1950s a curve that captured the gap between people's rising expectations as compared to their actual economic reality [1, 14, 20, 24]. Another evolutionary study related trade deficit of an economy with the market value of its currency. The scope of the J-Curve proposed by Brenner has a broader framework that postulates that the dialectic interaction between political, economic, social, and technological (P-E-S-T) forces may invigorate or destabilize an emerging economy [1].

The J-curve assessment relies on two key dimensions: (a) stability of a nation that depends heavily on its political leadership, and (b) social, economic, and technological openness of the nation with respect to its domestic and global interactions. When different countries are plotted on a graph with these two axes, we get a J-shaped curve (Figure – 1).

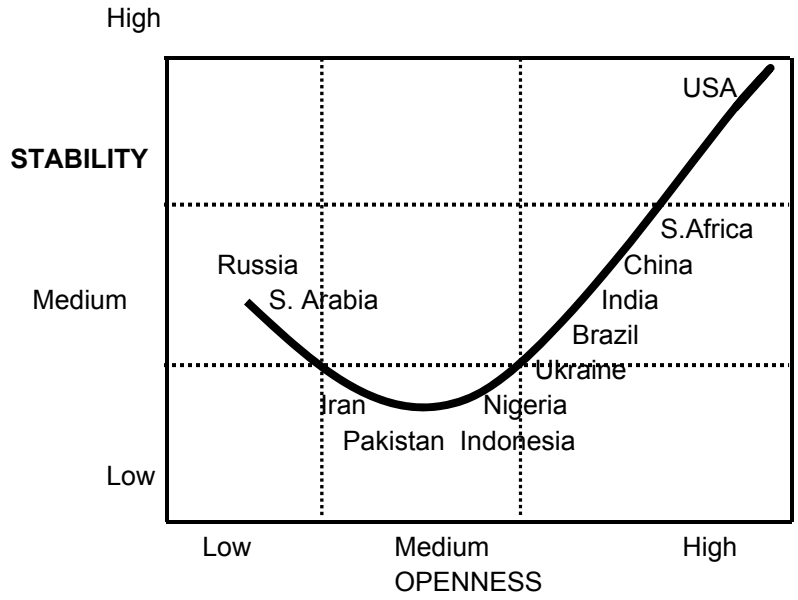

FIGURE – 1: Openness and Stability in various BRIC and Low Cost Sourcing Countries.

According to Bremmer, the economies on the left side of the J curve with low openness and high political stability may have moderate but declining stability [1]. These include Russia, Saudi Arabia, and even Singapore. On the other hand, the economies on the right side of the J curve, with high openness and high and rising stability, have low long-term risk. These economies include the United States, Canada, Japan, France and Germany.

A. Leadership Stability

In general, the high stability of some of the left-side J-curve economies depends on the strong personalities of individual leaders, such as Stalin and Putin in Russia, and Mao in People's Republic of China. On the other hand, the high stability of the right-side J-curve economies depends on their strong counter-balancing institutions. These include independent judicial, legislative, and government institutions, as well as private for-profit and not-for-profit institutions and free media. As the left-side J-curve economies transform into right-side J-curve economies, Bremmer postulates that these must evolve through a transitional period of low stability. This is because the strong personality-based authority in the former cannot be rapidly replaced with wide-spread legitimacy of interdependent institutions in the latter.

The first dimension of leadership stability of a country depends on (a) the propensity of the ruling political elite to create political and economic shocks, and (b) the resiliency of an economy to absorb and recover from such political and economic shocks. Economies that rely heavily on the personality of the ruling elite are likely to be destabilized when their imposed authority is questioned by the public. According to Bremmer's J-Curve model, Saudi Arabia is stable because the elite House of Sauds has been able to withstand so many political and economic shocks. On the other hand, low cost country Pakistan shudders under the shock of its judiciary questioning the validity of their elected head of state [24]. The Arab Uprising brought down the long dictatorial rule of Hosni Mubarak in Egypt [20].

An economy that is stable because of strong counter-balancing institutions has more predictable supply-chain and logistics costs than an economy that is stable because of authoritarian rulers. These more stable economies have lower long-term risks. Whereas France has organized labor strikes, but because of its democratic independent institutions, these are not likely to drastically destabilize the French economy. In the past, though, such revolutionary disturbances have tempted the neighboring country of Germany to invade France three times between 1870 and 1940.

On the other hand, in the oil-rich Nigeria, Bremmer noted that the government is unable to implement its policies of systematic change in the Niger Delta region because of the local insurgents who have shutdown 40-50% oil production in the recent years. Richly endowed economies like Nigeria, Venezuela, and Saudi Arabia have the regular stream of resources to create jobs, impose law and order, create a social welfare net, and buy weapons to defend their borders. India has a higher J-curve stability than its north-western neighbor Pakistan, because over the past 66 years India's multi-party political system has seen smooth democratic transitions of power, whereas Pakistan has been mostly controlled by rulers or dictators with military force and violent successions of power.

The economic shocks and risks in an economy can be endangered by political or natural disasters. The Fukushima earthquake in Japan, tsunami in Thailand, and draught in

Sudan are natural shocks due to long-term climate changes. But, the Muslim separatists in the Philippines, or the political crises in Mexico are man-made shocks. The fall of the Berlin Wall and the attempted coup against Mikhail Gorbachev led to the crumbling of the Warsaw Pact and the Soviet Empire. More authoritarian reformers like Boris Yeltsin (who shelled the Soviet parliament), and his successor Putin have somewhat stabilized Russia, but they had to allow independence for large territories. Russia gained some stability by becoming more authoritarian on the left side of Bremmer's J-curve.

B. Socio-economic Openness

The second dimension of socio-economic openness reflects the freedom with which individuals, information, ideas, goods, and services can flow ***within*** and ***across*** the borders of a country. How freely can the citizens of a country travel internationally, or at least enlighten themselves by accessing the international multi-media? What are the freedoms and restrictions for different market entry strategies such as international trade and foreign direct investment? It is important in an open economy for the citizen within a country to be able to exchange ideas and information with one another without covert government interference. How transparent are the federal, provincial, and local governments? Do goods and services flow freely across the different regions of an economy? These questions have significant impact on the long-term sourcing risk of a country.

Whereas many countries have supported the World Trade Organization's mission to increase openness to boost global trade, the reality is somewhat disappointing. A research study of Open Market Index in 75 countries (accounting for 95% of world imports in 2009**)** was sponsored by the International Chamber of Commerce (ICC). The Open Market Index was based on trade flows, trade policy regime, trade infrastructure, and capital flows [5]. The report noted that some of the largest G20 economies of the world promote protectionism and rank low on the ICC Open Market Index. The most open of the G20 countries were Germany, ranked at number 19, followed by United Kingdom, France and Australia. United States ranked in the middle at 39, followed by Japan ranking at 43. Brazil stood last among the G20 countries. Other G20 countries ranking below average were China, Mexico, Russia, Argentina, and India. Most of the above-average countries were from Europe, mostly with populations less than 15 million.

III. RESEARCH METHODOLOGY

In this study on assessment of long-term sourcing risk, socio-economic openness, leadership stability, and long-term sourcing risk are qualitatively and quantitatively assessed for 4 emerging BRIC countries and 8 other low cost developing countries. These values are listed in Table – 1.

For each selected country, a country profile was constructed from extensive archival data that was gathered, validated, and collated from diverse sources such as CIA Fact Book, Business Monitor International reports, Mergent country profiles, country insights reports, and other national and international documents. Three experts then reviewed each country profile, and scored each country's socio-economic openness and leadership stability on a scale of 0.0 to 1.0. The U.S. was assessed to have the highest benchmark socio-economic openness of 1.0, and the highest leadership stability of 1.0 among these sourcing countries. In this group of countries, U.S. has the lowest long-term sourcing risk.

TABLE – 1: OPENNESS, STABILITY, AND LONG-TERM SOURCING RISK FOR SELECT COUNTRIES

Sourcing Country	Socio-Economic Openness	Leadership Stability	Long-Term Sourcing Risk
U.S.A.	1.0	1.0	1.0
S. Africa	0.8	0.8	1.6
China	0.7	0.7	2.0
Taiwan	0.9	0.5	2.2
India	0.5	0.8	2.5
Brazil			
Indonesia	0.6	0.6	2.8
Nigeria	0.5	0.4	5.0
Ukraine	0.6	0.3	5.5
Saudi Arabia	0.3	0.5	6.6
Russia	0.2	0.5	10.0
Pakistan	0.3	0.2	20.0
Iran	0.1	0.1	100.0

IV. DISCUSSION: ILLUSTRATIVE APPLICATIONS OF J-CURVE FACTOR ANALYSIS

Given below are two brief illustrative applications of J-Curve model using socio-economic openness and leadership stability that may be used for assessment of long-term supply chain sourcing risks for different countries and different industries. The first application is to illustrate quantitative assessment of the long-term sourcing risk of a low-cost country such as India. The second application illustrates the use of the J-Curve factors to assess the long-term risks for sourcing oil and natural gas from different countries around the world.

A. Application – A: Assessing Long-Term Sourcing Risk of India

Charles De Gaulle once admitted that it was hard to govern France with 246 different varieties of cheeses. Imagine governing India with more than 15 national and regional political parties, campaigning in 35 distinctly different languages that are spoken by more than 1 million people each (with 22,000 dialects), each with 6-8,000 year rich legacy [1]. India's first Prime Minister Jawaharlal Nehru, installed on August 15, 1947 by the departing British governor-general Mountbatten, and blessed by the Father of India's national independence Mahatma Mohandas Gandhi, chose a socially flavored democracy for the nation. Nehru was against the rule of a dictator or a Caesar, but with his international statesmanship and mild personality, he ended up serving as the head of state or prime minister of India for 17 years until his natural death in 1964. His political preferences and policies primarily laid the foundation of economy in the post-colonial India. And, after Nehru, first his daughter Indira Gandhi (ruled for 15 years) and later her elder son Rajiv Gandhi ruled as prime ministers. Rajiv Gandhi took over from his mother Mrs. Gandhi and ruled until he was evicted, and later assassinated during an election campaign.

India's founding Prime Minister Nehru allowed him and his government ministers to be subjected to parliamentary debate and questioning by a robust opposition. He enacted a judiciary that operated by laws. Whereas he seemed agnostic, he chose India to be secular – partly to continue the assimilative legacy of Hindu way of life, and partly to avoid the sectarian religious and class wars. He also tried hard to stay neutral and independent in the Cold war fight between the United States and its allies and the Soviet Union and its Eastern European allies. But he leaned towards the Soviet style Fabian socialism (he acquired during his Cambridge years) translated into 5-year national plans and state owned enterprises.

Despite the rapidly rising population, and the related economic challenges of providing health, education, and jobs, the democratic freedom and free elections under Nehru's reign with high popular electorate participation, have kept India on the right side of the J curve with moderately high socio-economic openness.

After Nehru passed away in 1964, his only daughter **Indira Gandhi**, primarily his private secretary and hostess, was not yet ready to succeed him. But the Indian national Congress, which had gained national recognition during India's War of Independence, under the leadership of Lal Bahadur Shastri**,** continued Nehru's political and economic preferences.

After Shastri too passed away suddenly in somewhat strange circumstances on a peace summit in Tashkent with Pakistan, Indira Gandhi was chosen by the Congress Party to be the Prime Minister in 1966. She purged moderates in Indian National Congress and aligned herself closer to socialists. Banks were nationalized, and the privileges as well as some assets of former princes were abrogated. As the United States armed Pakistan in return for allowing to build a base against the Soviets, and President Richard Nixon opened doors with China, Indira Gandhi moved closer to Soviet Union. India's socio-economic openness declined significantly under Prime Minister Indira Gandhi.

In 1971, Indira Gandhi had a landslide victory in elections, and helped Bangla Desh (former East Pakistan) gain independence from Pakistan. In 1975, when the Indian court accused her of electoral excesses, she invoked the Indian Constitution to declare National Emergency and curtailment of many democratic freedoms. In 1977, allegations against her were overturned by a sympathetic Supreme Court. For a short period of less than 2 years, India lost some of its democratic institutions. When she called for elections in 1977, Indira Gandhi led Congress party was crushed by a coalition of opposition parties. However, with bad governance by the opposition parties, Indira Gandhi returned to power in 1980 elections. In October 1984, Indira Gandhi was assassinated by her Sikh body guards, in retaliation to her ordering troops to vacate terrorists residing in a Sikh temple in Amritsar. In sympathy, Indian masses resoundingly elected Rajiv Gandhi as the new prime minister of India in 1984.

Rajiv Gandhi, a former jet airliner pilot, ushered in a generational change in India's institutions. He was less committed to his grandfather Nehru's and mother Indira Gandhi's socialist preferences. Instead, Rajiv Gandhi started ushering in more modern technology and widespread technological openness of India through rural based telecommunication networks. In 1991, due to alleged corruption charges in Bofors arms-deal, Rajiv Gandhi and Congress party were defeated by a coalition of opposition parties. During a 1991 election campaign, due to ignoring of security (that had increased after her mother's assassination), Rajiv Gandhi was assassinated by a separatist Tamil suicide bomber from Sri Lanka.

Once again the people of India sympathized and elected Congress party back into power from 1991 to 1996. Prime Minister Narsimha Rao led the nation through a number of economic reforms and openness initiatives. In 1998, the opposition party Bhartiya Janata Party (BJP) regained the right to rule with Atal Behari Vajpayee once again as the

Prime Minister. BJP drifted India back towards less secular openness and more Hindu based ethno-centric policies. BJP lost elections in 2004 and Congress party returned to power primarily due to the leadership of Sonia Gandhi, Italian-born widow of the deceased ex-prime minister Rajiv Gandhi.

Quantitative Assessment of Long-Term Sourcing Risk of India and other Low-Cost Countries

Indian governments and political parties, despite their ethical flaws, have always valued moderately high degree of socio-economic openness, which puts India on the right side of the J Curve. Repeated democratic elections, with 60-70% participation by the electorate, show moderately high level of leadership stability of India. As mentioned before under research methodology, on a scale of 0 to 1.0, with 1.0 being highest socio-economic stability benchmarked for the U.S., India was scored by experts at 0.8 on stability scale. Unfortunately, Indian leaders from 1947 until 1991 valued a Soviet-styled planned economies. Market protectionism, inefficient state-owned enterprises, and the challenges of trade deficits and high unemployment level may have reduced the economic openness during this earlier period. Similarly, on a scale of 0 to 1.0, with 1.0 being the highest openness in the U.S., India's openness was scored by experts at around 0.5. Therefore, India's long-term supply-chain risk was indexed by the composite score of 0.8 x 0.5, or 0.40. Supply-chain long-term risk, inversely proportional to the product of leadership stability and socio-economic openness, was then assessed to be 2.5. This shows that whereas India is an attractive country for supply chain sourcing in the short-term because of its low-cost attractiveness, its long-term supply-chain risk is moderately high.

Similarly, socio-economic openness, leadership stability, and composite long-term risks were estimated for other emerging BRIC countries: Brazil, Russia, and China. The same was repeated for 8 other low-cost countries. Iran with least socio-economic openness and least leadership stability had the highest long-term sourcing risk of 100.0.

B. Application – B: Global Sourcing Risk for Oil and Gas

Global sourcing of oil and gas is a strategic requirement for many industrialized and industrializing economies of the world. Sourcing risk is sometimes independent of the oil production capabilities in different countries. Many non-Middle East countries are steadily replacing Middle Eastern countries as the sources of oil and gas for the United States [2]. Countries with relatively smaller resource endowment but higher socio-economic openness or higher leadership stability reduce their long-term sourcing risk much below that of the countries with larger resource endowment but lower levels of openness or stability. Sourcing countries like Israel, Qatar, and UAE have more favorable long-term sourcing risks than much larger producers of oil such as Saudi Arabia and Kuwait.

Christophe de Margerie, the chief executive officer of French oil giant Total, closely monitors the sourcing risks for his company procuring oil and natural gas from Northern African and Middle-eastern countries as a result of the recent political unrest in Libya, Syria, and other neighboring countries [20]. Saudi Arabia is easily capable of replacing more than 1 million barrels per day of Libyan oil. Whereas de Margerie did not see risks related to production of oil from the region, he is well aware of the geopolitical and sourcing risks due to disruption of supply-chain logistics. The $100 per barrel price of oil was broken prior to the start of the Arab unrest – primarily due to persistently high demand of oil from China. But still the world's oil companies are expected to increase their oil production past 95 million barrels per year in 2014. This constraint on peak production of oil is imposed not by the geological factors for different countries around the world, but by the socio-economic openness and leadership stability factors in different countries, which must be take into consideration in estimating long-term supply chain sourcing risks in these countries.

Thereby, Iran, Iraq, and Kuwait continue to have persistently high long-term sourcing risks [2]. Iran continues to have a high long-term sourcing risk because of its confrontational stand on nuclear arms proliferation, and the outstanding sanctions imposed on Iran by the major trading economies of the world. The upside potential for Iran, however, comes from its new pipelines to Oman and Pakistan. Because of India's high appetite for imported oil, it may also be willing to source oil from Iran in spite of the high long-term sourcing risk for Iran.

According to the J-curve openness-stability analysis, even though Israel has very limited onshore and offshore availability of oil and gas, its socio-economic openness makes its long-term sourcing risk lower than some of its Arab neighbors [1].

V. CONCLUSIONS AND MANAGERIAL, POLICY, AND RESEARCH IMPLICATIONS

As stated before, many researchers concur that the research on supply chain risk management is still in a nascent stage [4, 19, 21]. Considering the rising significance of supply-chain sourcing risk for many supply-chain management practitioners, much more research is needed in this area, and this study takes an important step to fill that gap. Furthermore, it was also noted that many supply-chain risk researchers implicitly assume a global convergence in their modeling of transactional supply-chain risk. Therefore, more research studies such as the present study are needed to explore national specificity, particularly by including socio-economic openness along with cultural differences.

This exploratory study, has the objective to assess long-term sourcing risk of different countries using J-Curve model based on socio-economic openness and leadership stability of different sourcing countries. This fills a significant gap in research and guidance sought by supply-chain management practitioners. Our quantitative assessment has confirmed that

the selected dimensions are closely related to the long-term sourcing risk of various countries. Such sourcing risk is customarily monitored by strategic sourcing managers in diverse industries, as in the case of oil and gas procurement from different parts of the world. The U.S. military example too illustrates that government policy makers in the U.S. and other countries must also pay close attention to a country's socio-economic openness and leadership stability [24].

This study, however, has a limitation in that long-term sourcing risk for different countries was primarily based on two qualitative dimensions: socio-economic openness and leadership stability. This is a rich but simplified exploratory research design. A more complex research design is needed in future to incorporate a number of intervening variables such as size, cultural values, and other human factors.

Based on these preliminary findings, a much more detailed study is needed to assess sourcing risk (and is being conducted) for a larger number of sourcing countries. Such a study will closely control moderating variables such as a country's size, population, and/or resource endowment.

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