Strangers to Strategic Allies: An Overview of Thriving, Prospering and Blossoming Sino-Saudi Relations

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Abstract: - Over the last one-decade, Saudi Arabia has adopted the policy of "Looking East" and is rigorously busy in developing and augmenting its economic and diplomatic relations with China. Since 2016, China and Saudi Arabia have strongly supported and complemented each other via China's Belt and Road Initiative and the Saudi Vision 2030. In January 2016, Chinese President Xi Jinping paid a grand state visit to Saudi Arabia, during which both countries decided to enter a comprehensive strategic partnership. Later in March 2017, Saudi King Salman bin Abdul Aziz visited China and endorsed the Belt and Road Initiative project of China. By reciprocating, China expressed its support for Saudi Arabia's pursuit of the 2030 Vision and offered its help to Saudi Arabia in achieving a diversified economy. So, both countries are busy in cementing their relations upon the synergy of their two signature programs i.e. China's Belt and Road Initiative and Saudi Vision 2030. This article highlights the historical overview of Sino-Saudi relations, describing how the two countries transitioned from mutual apathy to diplomatic relations, and then how this relationship grew to the point that they entered into a comprehensive strategic partnership.

Key-Words: - China, Middle East, Bilateral Relations, Belt & Road Initiative, Economic relations, Sino-Saudi Relation, Saudi Vision 2030.

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1 Historical Evolution of China-Saudi Relations

Since the establishment of formal diplomatic relations between China and Saudi Arabia in 1990. the bilateral relationship between them has grown significantly and substantially, The comprehensive bilateral relationship between the two nations is particularly noteworthy, considering the extensive trajectory that they followed in their development. The phenomenon is mostly attributed to the external factors, particularly the influence exerted by various international actors, notably the United States. Diplomatic contacts were hindered for a significant portion of the Cold War due to antagonistic alignments and doctrinal differences, [2]. The close cooperation of Saudi Arabia with the United States, together the leadership's antagonism against Communism, led to a deep-seated mistrust of the China, [3]. Consequently, Saudi Arabia preserved diplomatic connections with Taiwan initially. Prior to the late-1960s, both states exhibited little significance to one another, and their relationship could have been described as one of mutual apathy. Even Saudi Arabia was the only Arab country to vote against the China's admission

to the United Nations in 1971, [4]. The shift occurred as the foreign policy of China underwent a transformative shift during the initial stages of the Cultural Revolution.

The relationship had a gradual improvement in the 1980s, mostly due to some regional circumstances like the Iran-Iraq war. In 1986, Saudi Arabia engaged in a sequence of covert negotiations resulting in the acquisition of 50 Chinese missiles, which had an estimated worth of \$3.5 billion. An additional consequence of this transaction was a notable improvement in the bilateral ties between China and Saudi Arabia, culminating in the official establishment of diplomatic recognition in 1990. Over time, the occurrence of regular visits by highranking political officials and the establishment of extensive commercial ties have played a significant role in fostering strong and mutually beneficial relationships between the two nations. This aligns with a Chinese approach to fiscal diplomacy that prioritizes the promotion of commerce and investment while avoiding explicit connections between commercial objectives and political factors, [5]. Since the year 1990, the bilateral relationship between China and Saudi Arabia has evolved into a complex and diverse partnership, including several

Year of Diplomatic

aspects such as politics, economics, and growing diplomatic concerns. From the Chinese perspective, Saudi Arabia has three distinct characteristics that contribute to the backing of the Belt and Road Initiative (BRI): a significant geo-strategic position, its status as a prominent oil powerhouse, and its influence within the worldwide Islamic community.

From a geographical standpoint, Saudi Arabia has a favourable location that enables it to effectively leverage the aspirations of the BRI in terms of both sea and overland connections. Saudi Arabia's pivotal position in the Middle East adds to its geographic prominence since it borders eight states, more than any other Arab country. Saudi Arabia is an important stakeholder since is positioned to be at the center of various regional issues, [6]. China places significant importance on Saudi Arabia's status as a prominent oil-producing nation, particularly about energy matters. According to the Organisation of Petroleum Exporting Countries (OPEC), the proven resources of crude oil are estimated to be the second highest in the world, amounting to 267 billion barrels. These reserves constitute about 18% of the global oil reserves. According to OPEC, it has the distinction of being the top global producer of oil, with an average daily output of 10.317 million barrels in 2018.

Saudi Arabia continuously ranks among the primary suppliers of oil to China, alongside Russia. In 2019, Saudi Arabia contributed for little over 14% of China's total crude oil imports. The exports from Saudi Arabia to China had a significant increase from August 2018 to July 2019, almost doubling from 920 thousand barrels per day to 1.8 because of the barrels per day, reimplementation of U.S. sanctions on Iran. Despite the macroeconomic ramifications brought about by the coronavirus pandemic, the volume of Chinese petroleum imports from Saudi Arabia stayed consistently strong at 1.8 million barrels per day during 2020's first quarter, [7]. On the other side, Saudi Arabia's pursuit of stronger ties with China serves as a strategic response to both local and international challenges. China has significant importance as an economic collaborator for Saudi Arabia, both in terms of its domestic significance and its role as a long-term resource market. The below Table 1 is showing the establishment of diplomatic relations of Gulf countries with China.

Table 1. Gulf Countries Establishment of Diplomatic Relations with China

Relations (With China)	1
Iraq	1958
Kuwait	1971
Iran	1971
Oman	1978
United Arab Emirates	1984
Qatar	1988
Bahrain	1989
Saudi Arabia	1990

[4]

Gulf Country

According to [8], Saudi Aramco, expressed the company's approach towards China as a transition from a simple buyer-seller dynamic to a more substantial involvement via investments aimed at economic fostering China's expansion modernization. China and Saudi Arabia have a bilateral energy cooperation that benefits the former more than just its export market. China portrayed itself to be a useful ally that successfully tackles a wide range of the KSA's energy goals. Furthermore, the alignment between China's BRI and KSA's Vision 2030 is a significant factor that Saudi Arabian policymakers must consider, [9]. China proposed BRI in 2013 with the aim of promoting a more integrated regional market and more efficient use of economic resources through broader and deeper cooperation with the countries involved, The BRI primarily focuses on fostering connectivity throughout the Eurasian region, with Chinese capital and infrastructural development playing a pivotal role in its implementation. Saudi Vision 2030 is the most recent endeavour undertaken by the government of Riyadh to foster a more diversified economy.

In 2015, McKinsey released a report titled "Saudi Arabia beyond Oil: The Investment and Productivity Transformation," which proposed the allocation of investments across eight sectors to foster economic diversification in Saudi Arabia, [11]. These sectors included extraction and metals, petroleum-based products, production, consumer goods and wholesale trade, hospitality and travel, health care, financial services, and development. The desired outcome is the generation of six million more work opportunities by the year 2030, hence reducing the dependence on government-based job opportunities. The attainment of this formidable objective requires a major infusion of FDI and collaborative endeavours with worldwide corporations. In general, the increased inward flow of foreign direct investment leads to higher levels of economic growth, [12]. When foreign companies bring their operations into the host country, they bring with them advanced technology, knowledge, and resources which ultimately stimulate the economic health of the country, [13]. One of the main objectives of the developing countries is to attain the domestic innovated high-tech industries through FDI, [14]. Over the past few decades, the world has experienced a technological transition, as developing countries are aiming to become technologically advanced countries.

2 The Growing Cultural Exchanges between China and Saudi Arabia

Recently, there has been a notable growth in cultural interchanges between China and Saudi Arabia, driven by the strengthening economic and political ties between the two nations. This comprehensive interaction includes several domains, such as commerce, academia, travel, etc. The establishment trade relations has facilitated participation in infrastructure ventures in Saudi Arabia, whilst educational efforts have seen an increasing number of students actively engaged in cross-cultural learning opportunities. The Confucius Institutes established in Saudi Arabia serve as platforms for the promotion of Chinese language and culture, while reciprocally, cultural centers in China are devoted to the exhibition dissemination of Saudi history. The phenomenon of tourism has assumed a significant role, as seen by the growing trend of Chinese tourists engaging in activities inside Saudi travel Arabia. reciprocally, Saudi visitors venturing into China. Cultural engagement is further enhanced by cooperation in arts and entertainment, diplomatic visits, and gastronomic exchanges, which serve to cultivate mutual empathy and gratitude. The cultural interchanges between China and Saudi Arabia have been reinforced via the integration of traditional artistic endeavors, crafts, and culinary styles, therefore establishing a collective fabric of global connection.

The Confucius Institute established at King Abdul Aziz University in Jeddah is functioning as center for the promotion of Chinese language instruction and cultural immersion within the context of Saudi Arabia. Partnerships in the realm of cinema between Chinese and Saudi artists have yielded cooperative ventures that effectively exhibit a wide range of cultural tales to the audiences across both countries. Tourism efforts facilitate the mutual study of cultural monuments, whereby Chinese visitors engage in visits to Saudi Arabia, and

conversely, Saudi travelers are engaged in visiting China. Culinary contacts facilitate the convergence of the distinct and diverse flavors inherent in Chinese and Saudi food styles, therefore cultivating a mutual admiration for the culinary customs and practices of both cultures. The displays of conventional crafts and arts serve to highlight the profound cultural history, while also preserving and disseminating the expertise in calligraphy, weaving, and other related skills. The cultural understanding between China and Saudi Arabia is being further enhanced and the links of mutual respect are being strengthened via a range of various encounters.

President Xi Jinping has declared that China wants to increase the scope of cultural exchanges, youth exchange programs, and deepen ties of cooperation in the travelling, aviation industry, media, and publishing industries with the Arab countries. An agreement to increase cultural interaction and cooperation was struck between China and Saudi Arabia in 2016, [15]. In March of 2017, Beijing hosted the Saudi Cultural Heritage Exhibition and the inauguration ceremony for the King's Library at Peking University, which was generously funded by the Saudi government. The academicians from both nations feel these events help to foster better cross-cultural understanding. The Saudi ambassador to China recently noted the dire need for better communication understanding between the two countries. Therefore, it is important to promote cultural exchanges in addition to the expanding economic ties between China and Saudi Arabia, [16].

3 Flourishing Bilateral Trade Relations between China and Saudi Arabia

The economic cooperation between China and Saudi Arabia has increased exponentially over the last two decades. The two countries decided to transform the bilateral partnership into a strategic alliance. As the largest trading partner of Saudi Arabia, China overtook the United States in 2013, [17]. During his official visit to Saudi Arabia in January 2016, the President of China, Xi Jinping, established a comprehensive strategic alliance between China and Saudi Arabia. Later in 2017, King Salman bin Abdul Aziz paid a visit to China. Saudi Arabia's support for the Belt & Road Initiative (BRI) was much appreciated, and China looked forward to working with Saudi Arabia on the BRI project. In return, China said that it fully backs Saudia's dedication to the 2030 Vision and is ready to make contributions to the kingdom's efforts to diversify its economy. Saudi Arabia is actively engaged with China under the BRI project as part of its "Look East" strategy and to strengthen economic and political ties with China.

agree Economists in Saudi Arabia strengthening ties with China would benefit the country's economy and would augment the Saudi Vision 2030. The Chinese government has publicly acknowledged and endorsed Saudia's Vision 2030. During the visit of King Salam Bin Abdul Aziz in March 2017, Chinese President Xi emphasized China's support for Vision 2030, which was subsequently formalized in the "Joint Statement between China and Saudi Arabia". China and Saudi Arabia have joined together to advance financial integration as a key component of their alliance, [18]. In 2015, the Chinese Ministry of Finance made a public declaration stating that Saudi Arabia would be recognized as an official founding member of the AIIB. Later in June, the ICBC Bank from China inaugurated a branch in Riyadh, establishing the first ICBC branch inside the Middle Eastern region. To bolster the international standing of the Chinese Renminbi (RMB) and strengthen bilateral ties with other trading partners, China has begun discussions with Saudi Arabia about the potential for revising the clauses of their bilateral oil trade contract to allow for transactions to be conducted in RMB instead of the U.S. dollar, [19].

Over the years, the bilateral trade volume between China and Saudi Arabia has increased tremendously. Chinese businesses are engaged in different investment projects in Saudi Arabia, spanning various sectors such as petrochemicals, railroads, ports, power stations, and communications. Currently, Saudi Arabia is anticipated to emerge as China's second most significant provider of crude oil imports, ranking just behind Russia. Sinopec is a crucial trading partner for Saudi Aramco in the field of crude oil and serves as a significant contractor for onshore drilling operations. The two companies have a lengthy track record of collaborating on activities such as refining, petroleum commerce, and technological support. The establishment of the Yanbu Aramco Sinopec Refining Company in 2016 was a direct outcome of the collaborative efforts of the two corporations in the processing and biochemical integration industries in China's Fujian Province. Furthermore, the two countries are committed to bolstering the ties in areas such as renewable technology development and research, [20]. Figure 1 is showing the bilateral trade relations between China and Saudi Arabia.

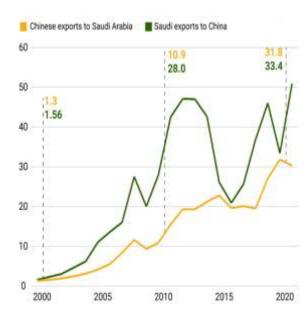


Fig. 1: Bilateral Trade Relations

4 Deepening Energy Cooperation between China and Saudi Arabia

In 1998, Aramco established the Saudi Petroleum Ltd. in Beijing to handle the international sales and marketing. Next year, Chinese President Jiang Zemin travelled to Saudi Arabia to declare the beginning of a "strategic oil partnership" when the country's crude oil imports reached 86,000 barrels per day. Under the terms of the deal, Saudi Arabia pledged to welcome Chinese investment in everything except upstream oil production and exploration in its domestic oil and gas industry. In return, China would welcome Saudi investment in its downstream sector, with a focus on modernizing its refineries. Aramco began talks with Sinopec in 2001 on a prospective \$5 billion joint equity venture to develop an aging refining and petrochemical facility in Quanzhou, Fujian. After lengthy negotiations with the government of Fujian province, Aramco, ExxonMobil, and Sinopec agreed in 2004 to form the Fujian Refining and Petrochemical Company Ltd. (FRPC), with Aramco, ExxonMobil, and Sinopec holding 25%, 25%, and 50% ownership stakes, respectively.

Aramco's investment of around \$750 million in the project aimed to enhance the capacity of the existing refinery thrice, enabling it to process Saudi heavy crude oil from 80 thousand barrels per day to 240 thousand barrels per day. Furthermore, the facility underwent integration of novel petrochemical facilities, including an ethylene steam cracker with a production capacity of 800,000 tons per year, a polyethylene unit capable of producing 650 thousand tons per year, a polypropylene unit

with a capacity of 0.4 million tons per year, and an aromatics unit capable of producing 01 million tons per year, [21]. Solar energy is another promising area for collaboration, Saudi Arabia has embarked on a \$100 billion initiative to convert the kingdom into a solar powerhouse. The Saudi solar power venture will not only help the country reduce its reliance on foreign oil and improve energy security, but it will also create new business opportunities for China, which has a significant cost advantage in the wafer production and polysilicon conversion processes required for solar power generation. There is a high probability that the bulk of the [Saudi] plant's production will be exported to China and Taiwan, where most of the wafer manufacturing takes place, due to the worldwide nature of the solar industry's trade flow, [22].

5 Alignment between Chinese BRI and Saudi Vision 2030

In this fast-changing world the political dynamics and the nature of inter-state relations is everevolving, [23]. Since Saudi Arabia serves as a vital connection between China and the Eurasian hinterland and as a major hub linking China to the huge African market, the two countries make natural and ideal cooperation partners in constructing BRI. Further, the alignment between Chinese BRI and Saudi Vision 2030 has paved a way for broader cooperation and collaboration between China and Saudi Arabia. High-level meetings have and the State visits by Chinese leaders and the Saudi leaders have further augmented the relationship between two countries. King Salman bin Abdul Aziz visited China in 2017 and thus became the second Saudi ruler to do so after King Abdullah bin Abdul Aziz, [24]. During King Salman's state visit in March 2017, in total 21 accords worth up to \$65 billion were inked, comprising investments in oil and petrochemical facilities, renewable sources of energy, and e-commerce. For Beijing to consider a state as a thorough strategic collaborate, the state must have a substantial political and economic influence on the global stage. Additionally, the bilateral connection should already possess a strong level of political trust, close economic connections, and well-established relationships in other areas of mutual concern, [25]. Normally, for the highest degree of diplomatic ties with China, governments must agree to "full pursuit of development and cooperation on both regional and international affairs", [26].

BRI urges the partner governments to expand their trading territories, enhance trade structure, seek untapped areas of trade, and foster trade equilibrium. While bilateral commerce between the two countries is well-established, Saudi Arabia's economy remains mostly reliant on a single commodity, oil, and oil-related products, accounting for roughly 90% of the country's exports to China. China has consistently been Saudi Arabia's primary commercial ally in the Arabian Peninsula since 2014, and reciprocally, Saudi Arabia has been China's most significant trading associate in the region. Partnerships with energy importers are vital to Saudi Arabia's economy since oil exports provide for around 87% of budget income and 90% of export profits, [27]. In 2016, China's investments in the Middle East as part of the BRI made it the biggest external provider of FDI in the area. Saudi Arabia, in particular, has been actively capitalizing on the rise in Chinese procurement and investing opportunities, [28]. Jazan's strategic location between the Arabian and Mediterranean seas suggests this might be a major area of collaboration under the infrastructure's connectivity agenda, [29]. As far as a partnership with financial institutions is concerned, Saudi Arabia lags behind its neighbours the United Arab Emirates and Qatar, although it is expanding in the direction that one would assume given the extent of bilateral trade and investment. The single ICBC office in Saudi Arabia is in the capital of Riyadh, despite the country's heavy reliance on Chinese commerce and investment, [30].

6 Conclusion

The Sino-Saudi Arabia relationship is typically simplified by using an oil-for-goods framework, which overlooks the diverse and strong nature of the partnership, primarily driven by energy commerce. However great progress has been made in various fields since the establishment of diplomatic relations between China and Saudi Arabia in 1990. The simultaneous implementation of China's BRI and Saudi Vision 2030 is a significant aspect of the relationship between the two countries. Both countries are busy in cementing their relations upon the synergy of their two signature programs i.e. China's BRI and Saudi Vision 2030. Beijing and Riyadh are strategically chosen because they have plenty to offer one another in terms of economic connections. The macroeconomic and security conditions of the Middle East will continue to be shaped by China's expanding influence and interests in the area. In March 2023, China brokered an agreement between Iran and Saudi Arabia to reestablish diplomatic relations, clearly showing China's willingness and capacity to engage politically in the Middle East. Over the years, the bilateral trade volume between China and Saudi Arabia has increased tremendously. Chinese businesses are engaged in different investment projects in Saudi Arabia, spanning various sectors such as petrochemicals, railroads, ports, power stations, and communications. This initiative is an essential part of China's real presence in the Middle East, and it is predicted that it will get significant political and economic backing in the coming years.

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References:

- [1] Fulton, J. (2020b). Situating Saudi Arabia in China's belt and road initiative. Asian Politics & Policy, 12(3), 362-383.
- [2] Jiang, X. (2023). The Diplomatic Relations of the Soviet Union during Cold War. Journal of Education, Humanities and Social Sciences, 8, 505-509.
- [3] Ogden, C. (2022). The double-edged sword: Reviewing India—China relations. India Quarterly, 78(2), 210-228.
- [4] Fulton, J. (2020). Strangers to Strategic Partners: Thirty Years of Sino-Saudi Relations. Atlantic Council.
- [5] Fulton, J. (2020a). China-Saudi Arabia Relations through the '1+ 2+ 3'Cooperation Pattern. Asian Journal of Middle Eastern and Islamic Studies, 14(4), 516-527.
- [6] Al-Tokhais, A., & Thapa, B. (2019). Stakeholder perspectives towards national parks and protected areas in Saudi Arabia. Sustainability, 11(8), 2323.
- [7] Rahman, Z. U. (2022). A comprehensive overview of China's belt and road initiative and its implication for the region and beyond. Journal of Public Affairs, 22(1), e2298.
- [8] Nyamrunda, F. C., & Freeman, S. (2021). Strategic agility, dynamic relational capability and trust among SMEs in transitional economies. Journal of World Business, 56(3), 101175.
- [9] Cengiz, S. (2020). Saudi foreign policy towards China in the Post-Arab uprisings era: a neo-classical realist approach. Asian

- Journal of Middle Eastern and Islamic Studies, 14(1), 51-67.
- [10] Chen, D., & Han, W. (2019). Deepening Cooperation between Saudi Arabia and China. King Abdullah Petroleum Studies and Research Center.
- [11] Soummane, S., Ghersi, F., & Lecocq, F. (2022). Structural transformation options of the Saudi economy under constraint of depressed world oil prices. Energy Journal, 43(3), 181-200.
- [12] Kayani, F.N & M. Ganic. (2021). The impact of Governance upon Chinese Inward FDI: The Generalized Method of Moments Technique. Humanities and Social Sciences Letters, 9(2), 175-184.
- [13] Kayani, F. N., Al-Ammary, O. M., & Sadiq, M. (2021). Inward FDI and economic growth nexus: A case of emerging Brazil from Latin America. Scientific Papers of the University of Pardubice. Series D, Faculty of Economics & Administration, 29(3), p. 1344.
- [14] Kayani, F. N. (2017). A comparative study upon Chinese and Turkish inward foreign direct Investment. Eurasian Journal of Economics and Finance, 5(3), pp. 1-16.
- [15] Alsudairi, M., Hai, S. J., & Alahmad, K. (2023). How Saudi Arabia Bent China to Its Technoscientific Ambitions, Lau China Institite.
- [16] Sevilla Jr, H. A. (2020). Middle East Geopolitics and China-India Strategic Interaction in the New Era. Asian Journal of Middle Eastern and Islamic Studies, 14(2), 179-193.
- [17] Dorraj, M. (2023). The Belt and Road Initiative and China's Expanding Ties with West Asia and North Africa. Routledge Companion to China and the Middle East and North Africa, 1789.
- [18] Chaziza, M. (2020). China's Middle East diplomacy: the belt and road strategic partnership. Liverpool University Press.
- [19] Chen, J., Yang, X., Wang, M., & Su, M. (2023). Evolution of China's interaction with Middle Eastern countries under the Belt and Road Initiative. Plos one, 18(11), e0293426.
- [20] Guzansky, Y., & Lavi, G. (2020). Saudi Arabia-China relations: A brave friendship or useful leverage? Strategic Assessment, 23(2), 109-114.
- [21] Mahdi, A. S. (2020). Saudi neomercantilism in the oil price war. review of economics and political science, 5(1), 2-20.

- [22] Jäger-Waldau, A. (2019). PV status report 2019. Publications Office of the European Union: Luxembourg, 7-94.
- [23] Nawaz, F. & K. Abu Saleem. (2024). The Prospering Relations of China and Switzerland: A Review after 10 Years of Signing Sino-Swiss Free Trade Agreement. Kurdish Studies, 12(2), 5119-5126.
- [24] Creutz, K. (2023). Multilateral Development Banks as Agents of Connectivity: the Asian Development Bank (ADB) and the Asian Infrastructure Investment Bank (AIIB). East Asia, 1-22.
- [25] Müller, M. (2023). The 'new geopolitics' of mineral supply chains: A window of opportunity for African countries. South African Journal of International Affairs, 30(2), 177-203.
- [26] Dave, B. (2022). Quest for Energy, Connectivity, and Security. Forging New Partnerships, Breaching New Frontiers: India's Diplomacy during the UPA Rule 2004-14, 265.
- [27] Sun, D. (2021). China's partnership diplomacy in the Middle East. In Routledge Handbook on China–Middle East Relations (pp. 299-311). Routledge.
- [28] Yannan, D., Ahmed, A., Al, A., Kuo, T.-H., Malik, H. A., Nassani, A. A., Haffar, M., Suksatan, W., Iramofu, F., & Patrick, D. (2022). Impact of CSR, innovation, and green investment on sales growth: new evidence from manufacturing industries of China and Saudi Arabia. Economic research-Ekonomska istraživanja, 35(1), 4537-4556.
- [29] Harutyunyan, A. (2021). Chinese Belt and Road Initiative in the Countries of the Gulf Cooperation Council, Institue of Oriental Studies, 1, 2.
- [30] Ramady, M. A. (2021). Financial Regulation and Liberation: Saudi Arabia's Path towards True Global Partnership. Springer Nature.

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Conflict of Interest

The authors have no conflicts of interest to declare.

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