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The potential of foreign direct investment (FDI) as a means of developing ports: Evidence from Oman

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Abstract
This article examines the potential of foreign direct investment (FDI) in developing the port sector in Oman. Data was collected through an administered questionnaire with a sample of 110 respondents selected randomly from three ports: Sohar, Salalah and Sultan Qaboos. The study used SWOT analysis, Chi-square and t-test to establish that the strategic location of the country, social and political stability, easy access to skilled manpower from neighbouring countries and good infrastructure are the main factors that attract FDI to Oman's port sector. The benefits of FDI to Omani ports include providing access to capital, bringing new organizational and managerial practices, creating more jobs, supplementing domestic investment and transferring advanced technology.

Keywords
FDI, economic diversification, SWOT, ports sector, Oman

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Introduction

Global maritime trade witnessed its fastest growth in five years in 2017, expanding by 4 per cent, with a total trade volume of 10.7 billion tons. Global containerized trade increased by 6.4 per cent, and dry bulk cargo by 4 per cent. While growth in crude oil shipments from Organization of the Petroleum Exporting Countries (OPEC) decelerated by 2.4 per cent, this decline was offset by increased trade flows from Asian countries. Seaborne trade is expected to grow by a compound annual growth rate (CAGR) of 3.8 per cent between 2018 and 2023.[1] Maritime transportation has a direct effect on the export competitiveness of a country and its economic development.[2] Its contributions include connecting countries with international markets, generating employment opportunities, providing foreign currency and securing imports of raw materials, consumer and capital goods.

With increasing competition in ports, the deployment of larger high-tech vessels and pressing needs for quality shipping services, the port sector regularly has to be upgraded and modernized. This requires huge capital resources and sophisticated technology, which is often beyond the capacity of many developing countries with maritime ports. Foreign direct investment is one policy option for countries seeking to compete effectively in this market.[3]

The port sector plays a key role in facilitating the Sultanate of Oman's foreign trade, sustaining economic growth, diversifying the national economy and reducing its heavy reliance on oil. According to a report published by the Ministry of Transport and Communications in 2018, the logistics sector, in which ports have the lion's share, contributed 3.8 per cent to the country's GDP in 2018, with more than 80 per cent of freight in Oman handled by the ports of Sohar and Salalah.[4]

The contribution of the port sector has been reflected in the expansion of Oman's foreign trade in recent years. Merchandise imports, for example, showed an increase from RO (Omani Rial) 7,679.5 million in 2010 to RO 10,589.5 million in 2017, with a compound annual growth rate of 4.69 per cent, while the value of re-exports increased

1. UNCTAD, *Review of Maritime Transport 2018* (New York and Geneva, 2018).
2. L. Berköz, *The Role of Ports in the Economic Development of Turkey* (Dublin, 1999); C. Ferrari, *Ports and Regional Economic Development: Global Ports and Urban Development: Challenges and Opportunities* (Paris, 2011); U. Kowalczyk, *Towards an Integrated Transport System in the Baltic Sea Region: Case Study on Hub-And-Hinterland Development in the Baltic Sea Region, Trans Baltic Project, Gdansk* (Poland, 2012).
3. L. Goldberg, 'Financial Sector FDI and Host Countries: New and Old Lessons', *Economic Policy Review*, 13 (2007), 1–17; S. Lall, *FDI and Development: Research Issues in the Emerging Context: Policy Discussion Paper 20* (Adelaide, 2000); S.T. Ok, 'What Drives Foreign Direct Investment into Emerging Markets? Evidence from Turkey', *Emerging Markets Finance and Trade*, 40 (2004), 101–14; Y. Wang and M. Blomström, 'Foreign Investment and Technology Transfer: A Simple Model', *European Economic Review*, 36 (1992), 137–55.
4. Ministry of Transport and Communications, *Annual Report 2018*, https://www.motc.gov.om/Ann/2018En/MOTC-Annual%20Report%202018-English.pdf (accessed 15 June 2019).

from 1,921.7 million to 2,109.0 during the same period, with a CAGR of 1.34 per cent. On the other hand, merchandise exports witnessed a decline from RO 14,073.2 million in 2010 to RO 12,651.5 million in 2017, with a CAGR of 1.51 per cent.[5] This decline was attributed to the drop in oil prices. The port sector has responded positively to accommodate the development in the volume of Oman's trade. Ship movements witnessed an increase from 7,774 in 2017 to 8,096 in 2018; the quantity of goods handled increased from 43.2 million to 49.9 million metric tons; incoming tourists increased from 353,096 to 556,149, while the number of containers declined from 11.8 million to 4.7 million during the same period. The report also indicated that the share of vehicle traffic at Sohar experienced an increase from 35.95 per cent in 2016 to 51.9 per cent in 2018, achieving a six-hour rate for clearance of goods, which compares favourably with international standards.[6] In terms of infrastructure, Oman ranked eighteenth in terms of the sea connectivity and efficiency of ports.[7]

Despite the huge investments undertaken in the contexts of the seventh and eighth five-year plans (2006–2010, and 2011–2015), the port sector in Oman needs to overcome numerous bottlenecks in order to respond effectively to the needs of the fast-growing cargo traffic. FDI has the potential to effect the changes that are necessary.

Although the impact of FDI on Oman's macro economy is adequately assessed in the literature, little has been written about its impact on the port sector. This article examines the potential of the FDI in the development of the port sector in Oman. It aims to identify the factors influencing FDI flows to the Sultanate's ports, appraising the weaknesses and strengths associated with this strategic sector and highlighting the ways in which FDI can contribute to enhancing it. The study is structured as follows: a literature review on the role of FDI in Oman's port sector is followed by discussions of the methodology adopted in the study, the performance of Oman's ports and a concluding section on the impact that FDI might have in enhancing the port sector in the Sultanate.

Literature review

Maritime transportation represents the most effective way of shipping goods between countries in an expanding world economy. An efficient port sector promotes economic growth and development by lowering transaction costs, boosting exports, attracting more investments, generating new jobs and sustaining economic growth. Sánchez-Martin et al. have measured the relationship between efficiency in seaports and lowering freight costs, after controlling for distance, type of product, liner services availability and insurance costs. According to their study, an improvement of

5. National Centre for Statistics and Information (NCSI), *Statistical Year Book 2018*, Issue 46, https://ncsi.gov.om/Elibrary/LibraryContentDoc/bar_Statistical%20Year%20Book%20 2018_a8b32d59-cdc9-4987-ba29-1e7ce78d5cca.pdf (accessed 16 May 2019).
6. Ministry of Transport and Communications, *Annual Report 2018*.
7. World Economic Forum, *Global Economic Competitiveness Report 2017–2018*, http://www3.weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf (accessed 8 June 2019).

one efficiency factor by 25 per cent will reduce the total maritime transport cost by almost 2 per cent. The efficiency factors involved in the study included the container hourly loading rate, the annual average number of containers loaded per vessel and waiting times.[8]

Berköz examined the impact of ports on a nation's development as a part of transportation services, with gross national income regressed on the size of the port, total traffic figures, imports and exports, ship visits, number of workers and storage/warehousing. The results indicated that total exports and imports and ship visits are highly correlated with the gross national incomes of the cities involved.[9] Also, according to Guoqiang et al., the GDP of Guangdong province in China increased from 573.4 billion Yuan in the initial reform year of 1979, to 1362.6 billion Yuan in 2003; and in the same period annual growth rate of GDP per capita reached 11.4 per cent due to the port sector.[10] Ferrari's study indicates that the port sector has a positive impact on employment, and there is a positive relationship between port throughput and local development, with an elasticity of less than 0.05, which is higher than other transport infrastructures, such as airports.[11] Kowalczyk demonstrated that in the era of third and fourth generation ports, the number of calls and total costs of cargo handling in port can be substantially decreased and the total time required for port operations can be significantly shortened.[12]

As stated in Oxford Economics, the port sector contributed £7.9 billion, or 0.5 per cent, to UK's GDP in 2013. This was a larger contribution than that made by the aerospace and hotel accommodation sectors. Moreover, in 2011, the port sector directly employed 117,200 people, which accounts for 0.4 per cent of total employment in the UK, or 1 in every 270 jobs.[13] Similarly, Rijkure and Sare highlighted the contribution of the port sector to the Latvian economy. Here, the nation's ports handle on average 60 million tons per year. The transportation and storage sector accounted for 13 per cent of Latvia's GDP, and the total revenue from transit cargoes amounted to approximately 4.4 per cent of GDP, which is equal to 27.7 per cent of the total volume of the export of services in 2013.[14]

Given the importance of port industries in the economic growth and development of nations, policy makers strive to develop and modernize this sector to keep up with international standards. However, the cost of modernization can exceed the capacity of many countries, and hence one policy option is to capitalize on foreign direct

8. A. Sánchez-Martin, E. Rafae and E. Gonzalo, 'Do Changes in the Rules of the Game Affect FDI Flows in Latin America? A Look at the Macroeconomic, Institutional and Regional Integration Determinants of FDI', *European Journal of Political Economy*, 34 (2014), 279–99.
9. Berköz, *The Role of Ports*.
10. Guoqiang Z. et al., *Container Ports Development and Regional Economic Growth*.
11. Ferrari, *Ports and Regional Economic Development.*
12. Kowalczyk, *Towards an Integrated Transport System.*
13. Oxford Economics, *The Economic Impact of the UK Maritime Services Sector.*
14. A. Rijkure and I. Sare, 'The Role of Latvian Ports within the Baltic Sea Region', *European Integration Studies*, 7 (2013), 110–7.

investment. The positive contributory role of FDI on the port sector has been widely documented.[15] The key questions are how to attract FDI to this strategic sector and what are its determining or motivating factors. Understanding these factors is essential for policy makers in Oman in their efforts to develop the port sector.

There is a growing body of empirical literature on the determinants of FDI. The literature on this issue can be divided into two strands. One strand has focused on traditional factors, such as market size, natural resource intensity, comparative labour cost, human capital, population size, degree of openness, return on investment and political factors.[16] Nachum et al., for instance, have argued that FDI decisions are influenced by the harmonization of the motives of multi-national enterprises (MNEs) and the location advantages of the host country.[17]

The second strand of the literature has increasingly emphasized the role of infrastructure as the main driver for FDI, claiming that the benefits gained from such traditional factors will not be fully realized by investors due to the high cost associated with the weak and inefficient infrastructure of host countries. Hence, it is argued that a robust infrastructure is a necessary pre-condition for investors to operate successfully.[18] The

15. C. Hyuksoo and H. Gyeongseok, 'Determinants of FDI Inflow in Regional Port with Resource-Based View and Institutional Theory: A Case of Pohang-Yeongil Port', *The Asian Journal of Shipping and logistics*, 252 (2009), 306–31; E. Lechman and H. Kaur, 'Economic Growth and Female Labor Force Participation – Verifying the U-feminization Hypothesis. New Evidence for 162 Countries Over the Period 1990–2012', *Economics & Sociology*, 8 (2015), 246–57.
16. E. Asiedu, 'On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?' *World Development*, 30 (2002), 107–18; F. Z. Jaspersen, A. H. Aylward and A. D. Knox, 'The Effects of Risk on Private Investment: Africa Compared with Other Developing Areas', in P. Collier and C. Patillo (eds.), *Investment in Risk in Africa* (New York, 2000), 206–17; A. M. Khondoker and K. Kalirajan, 'Determinants of Foreign Direct Investment in Developing Countries: A Comparative Analysis'. *ASARC Working Paper 2010/13*, http://www.crawford.anu.edu.au/acde/asarc/pdf/papers/2010/WP2010_13.pdf (accessed 20 March 2017); X. Liu, H. Song, Y. Wei, and P. Romilly, 'Country Characteristics and Foreign Direct Investment in China: A Panel Data Analysis'. *Weltwirschaftliches Archives*, 133 (1997), 313–29; S. Omanwa, 'Determinants of FDI in Kenya: An Empirical Study'. *Vilakshan: XIMB Journal of Management*, 10 (2013), 47–66; A. Sánchez-Martin, E. Rafae and E. Gonzalo, 'Do Changes in the Rules of the Game'; F. Schneider and B. Frey, 'Economic and Political Determinants of Foreign Direct Investment', *World Development*, 13 (1985), 161–75; N. J. Swain and Z. Wang, 'Determinants of Inflow of Foreign Direct Investment in Hungary and China: Time-series Approach', *Journal of International Development*, 9 (1997), 695–726; P. Tsai, 'Determinants of Foreign Direct Investment and its Impact on Economic Growth', *Journal of Economic Development*, 19 (1994), 137–63.
17. L. Nachum, J. H. Dunning and G. G. Jones, 'UK FDI and the Comparative Advantage of the UK', *The World Economy*, 23 (2000), 701–20.
18. Asiedu, 'On the Determinants of Foreign Direct Investment'; D. W. Loree and S. E. Guisinger, 'Policy and Non-policy Determinants of U.S. Equity Foreign Direct Investment', *Journal of International Business Studies*, 26 (1995), 281–99; K. Sekkat and M. Veganzones-Varoudakis, *Trade and Foreign Exchange Liberalization, Investment Climate and FDI in the MENA Countries. Working Papers DULBEA* (Brussels, 2004); C. Wekesa, W. Teresa, H. Nelson

contribution of FDI to the rapid expansion of private infrastructure in the 1990s has been well recognized. According to Sun, the statistics show that foreign equity investors participated in over 80 per cent of all projects, whether measured by the number of transactions or total project costs. The share of foreign direct investment in the transport sector amounted to 61.8 per cent, with airports leading the way with 100 per cent, followed by seaports at 73.1 per cent, railways at 74.4 per cent and roads at 42.4 per cent.[19]

Increasingly, infrastructure has become a noticeable factor attracting FDI. As Wei et al. indicated, a location with good infrastructure is more attractive than other factors. Economic infrastructure such as roads, railways, ports, airways and telecommunication networks improve the climate of the investment by facilitating production and distribution of goods and services, reducing transaction costs and thereby increasing returns on investment.[20] Also, economic infrastructure has positive externalities with other sectors, which induces FDI.

To capture the uni-directional or bi-directional causality effects between FDI and infrastructure, different proxies to measure infrastructure have been employed. Some scholars have used the length of paved road per square kilometre of area,[21] while others have used the number of telephones available per 1,000 people.[22] One of the studies that focused on assessing the impact of port infrastructures on FDI was that of Loree and Guisinger.[23] It showed that the flow of US direct investment has been influenced by port infrastructure in addition to highways, communication and airports. The study used a factor analysis approach to explore that linkage. In 2011, UNCTAD cited the successful story of Nigeria in utilizing FDI to improve its port infrastructure. According to the study, Nigeria adopted the landlord model (mixed public-private orientation) and by 2006 had made concessions to private investors relating to 25 port terminals across the country.[24] Operations were mostly funded by foreign investors, and the role of the

and G. Kosimbei, 'Effects of Infrastructure Development on Foreign Direct Investment in Kenya', *Journal of Infrastructure Development*, 8 (2017), 93–110; D. Wheeler and A. Mody, 'International Investment Location Decisions: The Case of U.S. Firms', *Journal of International Economics*, 33 (1992), 57–76.

19. X. Sun, *How to Promote FDI? The Regulatory and Institutional Environment for Attracting FDI*. Prepared by the Foreign Investment Advisory Service for the Capacity Development Workshops and Global Forum on Reinventing Government on Globalization, Role of the State and Enabling Environment. Sponsored by the United Nations. Marrakech, Morocco, 10–13 December 2002.
20. S. Wei, 'How Taxing is Corruption on International Investors?' *Review of Economics and Statistics*, 82 (2000), 1–11.
21. D. Canning and E. Bennathan, *The Social Rate of Return on Infrastructure Investments*. Policy Research Working Paper, no 2390 (Geneva, 2000), http://documents.worldbank.org/curated/en/261281468766808543/pdf/multi-page.pdf (accessed 12 July 2017).
22. Asiedu, 'On the Determinants of Foreign Direct Investment'; Loree and Guisinger, 'Policy and Non-policy Determinants'.
23. Loree and Guisinger, 'Policy and Non-policy Determinants'.
24. UNCTAD, *How to Utilize FDI to Improve Transport Infrastructure - Ports; Lessons from Nigeria* (New York and Geneva, 2011).

government was only regulatory in respect of specific elements of the port industry. In 2007, the World Bank published a comprehensive study of port reform toolkits, which emphasized the increasing role of the private sector in port finance and operations. The study provided a framework for alternative port management structures and ownership models, whereby each task and responsibility of the public and private sectors in port management are identified in an efficient and complementary manner.[25]

Hyuksoo and Gyeongseok, while emphasizing the important role of FDI in Korea's maritime sector, contended that free trade zones, industry clusters and ICT infrastructures were the major determinants of FDI in the Pohang-Yeongil port hinterland.[26] To encourage economic development in the Emirate of Abu Dhabi, a high-level investment forum conducted in Seoul in 2017 – involving the Abu Dhabi and Korean Chambers of Commerce and Industry – focused on making Khalifa Port Free Trade Zone a destination for future foreign direct investment. The forum considered incentives to foreign direct investors, including competitive rental rates, low business costs, full tax exemptions, granting foreign investors full ownership of their projects and full repatriation of their capital and profits, including the possibility of shipping goods at competitive prices, smooth customs procedures and other centralised processing benefits.[27] Elbayoumi and Dawood analysed 24 port terminals in the Middle East and found that only five terminals were growing constantly while the rest were inefficient. These expanding terminals were Dubai, Jebel Ali, Suez Canal C terminal, Ambarli Salalah and Jeddah.[28] A report by the Bureau of Economic and Business Affairs on climate investment in Oman recommended that geographic location, the country's infrastructure, including manufacturing free zones, seaports, airports, rail and roads, as well as health care, educational systems and facilities, and easy access to skilled manpower from neighbouring countries, were the positive factors that made Oman attractive to investors.[29]

Methodology

A quantitative approach was adopted to assess the extent to which, and why, FDI might contribute to port development in Oman. This entailed a survey of the views of individuals who work in Oman's seven major ports: Sultan Qaboos, Salalah, Sohar, Khasab, Shinas, Duqm and Mina Al Fahal.

The survey was conducted through a self-administered questionnaire distributed in three of the Sultanate's ports – Sohar, Salalah and Sultan Qaboos. Although 150

25. World Bank, *Port Reform Toolkit: Alternative Port Management Structures and Ownership Models, Module 3, second edition* (Washington DC, 2007), http://www.ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Portoolkit/Toolkit/pdf/modules/03_TOOLKIT_Module3.pdf (accessed 12 February 2016).
26. Hyuksoo and Gyeongseok, 'Determinants of FDI Inflow in Regional Port'.
27. Emirates News Agency (2017), *Abu Dhabi Ports Presents FDI Opportunities at Seoul Investment Forum*, http://wam.ae/en/details/1395302613126 (accessed 12 May 2018).
28. O. F. Elbayoumi and A. Dawood, 'Analysis of the Competition of Ports in the Middle East Container Ports Using HHI', *Journal of Shipping and Ocean Engineering*, 6(2016), 339–347.
29. Department of State, Oman Investment Climate Statement 2015, https://www.state.gov/documents/organization/241903.pdf (accessed 15 March 2016).

questionnaires were issued, only 110 were returned, a response rate of 73 per cent. The questionnaire was subject to validity and reliability tests, using Alpha Kronbach, and showed a strong internal consistency reliability of 86.6 per cent. A five-point Likert scale was used in the questionnaire to measure respondents' views on FDI as a causal factor in the port sector. Responses were classified as 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree', and coded 1, 2, 3, 4 and 5 respectively.

A chi-square test was used to assess the pattern of responses. One sample t-test was also used to investigate whether there is a significant difference between the average views and a tested value of 3 in the statements regarding the determinants of FDI, and its benefits to the port sector in Oman. The value 3 (neutral) was taken as a benchmark to validate the study's hypotheses, as follows:

$H_0 : \mu = 3$ FDI has no impact on the port sector in Oman

$H_1 : \mu > 3$ FDI has an impact

If the average of the views regarding the statements is significantly greater than 3, this indicates that respondents agree or strongly agree with the given statements; that is, FDI has an impact. If the average response is less than 3, this indicates that respondents disagree or strongly disagree with the given statements; that is, FDI has no impact.

Oman's port sector

The port sector plays a vital role in sustaining growth in a country's trade and commerce. Statistics indicate that about 70 per cent of the volume, and 57 per cent of the value, of Oman's imports in 2017, were conveyed by sea.[30] Oil exports, the backbone of the country's economy, are handled exclusively through Mina Al-Fahal. Oman's seven major ports are shown in Table 1. In terms of coastline length, Oman ranks fourth among Arab countries and 65th among global maritime countries, with a coastline of about 2,092km.

Table 1 indicates that the largest port in terms of area is the newly established Duqm port, of 135.0km². This port is also equipped with a ship repair yard and dry-dock facility, the first of its kind in Oman. Duqm is considered the largest port in the Middle East and North African region and ranks among the largest in the world with a land area of 2,000km² and 70km of coastline along the Arabian Sea.[31] The second largest port is Sultan Qaboos, with a total area of 26.7km². Since 2014, this has been the country's main cruise ship terminal, with all of its commercial activities transferred to Sohar. Shinas is the smallest port, with an area of 487,000m², its main activities being the import and export of foodstuff and livestock. Although all of Oman's ports handle cargo, Mina Al Fahal is the only one specialized in oil exports and the unloading of oil products, with a capacity 85,000 barrels per day.

30. NCSI, *Statistical Year Book 2018.*
31. Special Economic Zone Authority, Duqm, https://www.duqm.gov.om/sezad/about-us/profile (accessed 3 August 2019).

Table 1. Total area and capacity of Oman's ports.

Name of port	Total area	Capacity	
Sultan Qaboos	26.7km²	300,000 TEU	7 million FRT
Salalah	10.71km²	5 million+ TEU	10 million FRT
Sohar	4.50km²	5.3 million TEU	–
Khasab	1.6km²	–	1 million FRT
Shinas	487,000m²	–	–
Duqm	135.0km²	–	–
Mina Al Fahal		85,000 barrels/day	–

Note: 'Twenty-foot Equivalent Unit' (TEU) is the term used to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot-long (6.1 m) container. FRT = freight tons.
Source: Ministry of Transport and Communications (2018).

Table 2 shows the number of vessels and volume of cargo handled by Sultan Qaboos, Salalah, Sohar and Mina Al-Fahal. It indicates that the number of vessels entering Sultan Qaboos during 2012–2017 declined from 4,007 to 1,208, with a CAGR of 21.3 per cent during the period. The ports of Salalah and Mina Al Fahal also experienced contractions during these years, amounting to 5.3 per cent and 5.0 per cent respectively. On the other hand, imports via Sultan Qaboos showed a decrease of 26.2 per cent from 4,228.3 MT to 923.9 MT between 2012 and 2017. This was due to the transfer of most commercial cargo activities to Sohar, which experienced an increase of 25.4 per cent during the same period. Most of the imports were foodstuffs (81.1 per cent) and construction materials (8.1 per cent).[32] In Salalah, exports and imports grew by 13.9 per cet and 10.4 per cent respectively, largely because the port, which is the central hub for the distribution and transport of containers in the transit zone between East and West, enjoys a favourable location on the international shipping lanes to the Indian Ocean. Mina Al-Fahal is the key port for Oman's petroleum operations. During 2012–2017, oil loaded and unloaded showed CAGRs of 51 per cent and 7.6 per cent. Oil shipped outwards increased from 37,331,000 BBL in 2012 to 293,609,000 BBL in 2017, while oil unloaded increased from 1,515,000 BBL to 2,184,000 BBL during the same period.

These statistics show the importance of the port sector to Oman, as it handles oil exports, the backbone of Oman's economy, foodstuff imports to sustain the food security of the country, and construction materials for development projects.

The role of FDI in Oman's port sector

To attract FDI to contribute to its port sector, Oman has devised numerous initiatives, as reflected in its *Strategy 2020* document, which was published in 1996. Two pillars of that strategy are the diversification of the economy and the promotion of private and foreign investment. For example, the Law of Foreign Capital Investment, which was passed in 1994, and its subsequent amendments, has provided incentives to foreign investors,

32. NCSI, *Statistical Year Book 2018.*

Table 2. Cargo traffic handled by Oman's major ports, 2012–2017.

Ports	Indicators	2012	2013	2014	2015	2016	2017	CAGR (%)
Sultan Qaboos	No. of vessels	4,007	2,881	2,324	1,533	1,398	1,208	−21.3
	Imports (MT)	4,228.3	4,300.9	2,390.8	976.7	996.3	923.9	−26.2
Salalah	No. of vessels	3,139	2,972	2,691	1,981	2,924	2,396	−5.3
	Exports (MT)	6,066.5	6,779.9	8,985.5	11,124.9	10,941.3	11,632.3	13.9
	Imports (MT)	1,192.8	1,163.9	1,774.0	1,814.9	2,095.2	1954.38	10.4
Sohar	No. of vessels	1,788	1,800	1,918	2,354	2,322	3,075	11.5
	Imports (MT)	6,826.2	14,626.7	9,983.2	22,198.5	17,747.3	21,167.1	25.4
Mina Al Fahal	No. of vessels	382	378	379	312	329	295.0	−5.0
	Oil Loaded (000 BBL)	37,331	36,556	41,667	306,682	321,204	293,609	51.0
	Oil unloaded (000 BBL)	1,515	1,865	1,773	2,524	2,839	2,184	7.6

Note: MT = metric tonnes; BBL = oil barrels (42 US gallon); CAGR = compound annual growth rate.
Source: NCSI, 2018.

including tax holidays, removal of entry and ownership restrictions, free transfer of capital and profits, exemptions from custom duties for raw material and capital goods, subsidized electricity, water and fuel charges, granting of land at concessional leasing rates and soft government loans.[33] As well as investing heavily in modern infrastructure and port facilities in Duqm, Salalah and Sohar, the government has established four Free Trade zones with the specific aim of attracting FDI. These are situated in areas that are strategically located for sea transport: that is, in the northern industrial city of Sohar, the southern port of Salalah, the central coastal area around Duqm, and at Mazunah, close to the Yemen border.

The Ministry of Transport and Communications has signed several memoranda of understanding for mutual recognition of the certification of seafarers working aboard vessels registered in the Hashimyat Kingdom of Jordan, the Marshall Islands, the United Arab Emirates and the Kingdom of Bahrain. In 2018, moreover, the Sultanate's accreditation was renewed on the white list of the International Maritime Organization, which maintains standards for the qualification, training and licensing of seafarers.[34] These and other policy developments are expected to promote the performance of the port sector and assist in attracting more FDI.

In 2016, FDI flows into Oman amounted to RO 717.50 million,[35] although the data are not disaggregated by port, and are amalgamated with the transport, storage and communication sectors. The aggregate volume of FDI in these sectors increased from RO

33. Oman Chamber for Commerce and Industry (OCCI), *Investment Opportunities in the Sultanate of Oman* (Muscat, 2013).
34. Ministry of Transport and Communications, *Annual Report 2018.*
35. Trading Economics (2016), *Oman Foreign Direct Investment*; Ministry of Transport and Communications, *Annual Report 2018*, https://tradingeconomics.com/oman/foreign-direct-investment (accessed 20 January 2017).

167.5 million in 2010 to RO 181.1 million in 2011, reaching RO 256.9 million in 2015, with a CAGR of 11.3 per cent during the period 2010–2015.[36] FDI's most important input into the port sector is in respect of the international terminal operators (ITOs), whose investment gives them the right to manage a terminal over a defined period, and thereby capitalize on economies of scale and the deployment of the latest technology. The role of the government is very important in setting up the necessary legal and institutional framework, managing the bidding process, negotiating with ITOs, and providing fair and effective regulation throughout the life of the project.[37]

Empirical Results

Regarding the demographic profile of the respondents who participated in the study, the results indicate that of the 110 respondents, there were 76 (69.1 per cent) males and 34 (30.9 per cent) females. About 75 per cent of the respondents were Omani nationals, and 25 per cent were expatriates. Concerning their level of education, 40 per cent had a Bachelor's degree, 21.8 per cent had gained a Diploma, 20 per cent had secondary education, and 10.9 per cent were postgraduates. In terms of age, 71 per cent of the respondents were from 35 to 55 years old.

To identify the main factors influencing FDI inflow into Oman's port sector, the views of the respondents regarding various causal factors are shown in Table 3 in terms of percentages, Chi-square values and P-values.

As can be observed from Table 3, all the factors are shown to be significant per Chi-square test and the associated P-value (< 0.05). For example, 72.5 per cent of the respondents agree and strongly agree that easy access to skilled manpower from neighbouring countries has an influence on FDI inflows to Omani ports. The highest percentage of agreement occurred with strategic location (92.1 per cent), and the lowest with transaction costs (49 per cent).

Table 4 shows the factors attracting FDI to Omani ports sector ranked by mean, along with the standard deviation (StDev), coefficient of variation (CV), t-values and the P-value of each factor. The results presented in Table 4 and Figure 1 indicate that all 12 factors are influential, with some variations in terms of importance. Oman's strategic location ranked first, as the main factor influencing FDI inflow to the Sultanate, with a mean score of 4.510. This was followed by social and political stability, with a mean of 4.163, easy access to skilled manpower ranking third, with a mean score of 3.980, and government policy and regulations emerging as eighth, wit[38] h a mean score of 3.804. These results are consistent with analyses undertaken by Nachum and Tsai.Factors such as 'ease of doing business' were not highly rated, which was confirmed in 2018 by a global report, in which Oman ranked 71 globally in the index of the ease of doing business.[39] In that index, the

36. NCSI, *Foreign Investment* (Muscat, Oman, 2016). https://www.ncsi.gov.om/ (accessed 9 May 2017).
37. UNCTAD, '*How to Utilize FDI to Improve Transport Infrastructure – Ports'.*
38. Nachum L. et al., 'UK FDI and the Comparative Advantage of the UK'; Tsai, 'Determinants of Foreign Direct Investment'.
39. World Bank Group, *Doing business 2018* (Geneva, 2018).

Table 3. Factors influencing FDI flows to Omani ports.

	Factors	Extent of agreement					Chi²	P-value
		1	2	3	4	5		
		SD	D	N	A	SA		
1	Easy access to skilled manpower	–	3.9	23.5	43.1	29.4	16.22	0.001
2	Easy access to technology	–	7.8	19.6	49.0	23.5	18.41	0.000
3	Low transaction costs (e.g. import tariffs)	3.9	11.8	35.3	31.4	17.6	17.73	0.001
4	Competition from other sectors	2.1	14.6	27.1	33.3	22.9	14.08	0.007
5	Proximity to customer	–	5.9	29.4	43.1	21.6	14.80	0.002
6	Government policy & regulations	2.0	11.8	17.6	41.2	27.5	23.02	0.000
7	Ease of doing business	4.0	8.0	26.0	40.0	22.0	21.00	0.000
8	Access to finance	4.1	2.0	30.6	32.7	30.6	23.55	0.000
9	Social and political stability	2.0	10.2	2.0	40.8	44.9	43.96	0.000
10	Good infrastructure	2.0	6.0	18.0	42.0	32.0	28.8	0.000
11	Low level of corruption	2.0	8.0	36.0	24.0	30.0	21.00	0.000
12	Strategic location	–	–	7.8	33.3	58.8	19.88	0.000

Note: SD = strongly disagree; D = disagree; n = neutral; A = agree; SA = strongly agree.
Source: Authors' calculation from the questionnaire survey, 2019.

Sultanate was accorded even lower rankings of 124, 133 and 67 for protecting minority investors, getting credit and resolving insolvency cases, respectively.

To assess the impact of FDI inflows on Omani ports, the views of the respondents on FDI benefits in eight areas are summarized in Table 5, using percentages, Chi-square values and the P-value to assess the significance of each impact.

Table 5 indicates that the FDI has a significant impact on all the eight areas assessed, based on the results of the Chi-square test and the associated P-value (< 0.05). For instance, 78.4 per cent of the respondents agree and strongly agree that FDI will create new jobs for the Oman economy. The impact identified by most respondents (83.7 per cent) is that FDI provides better access to the capital that is much needed by Oman's port sector. This is followed by the importance of FDI in bringing new organizational and managerial practices, as cited by 81.6 per cent of the respondents.

Table 6 and Figure 2 show the impact of FDI inflows to Omani ports in eight areas ranked by average importance, along with the standard deviation (StDev), coefficient of variation (CV), t-values and the P-values. Eight areas of FDI contribution have been identified.

The respondents revealed that the potential benefits of FDI to Omani ports include providing better access to capital, which ranked first with a mean score of 4.082, followed by bringing new organizational and managerial practices, which ranked second with a mean score of 4.081. Creation of new jobs ranked third with a mean score of 4.078, while supplementing domestic investment in ports to increase port performance ranked fourth with a mean score of 3.895. All of these results are statistically significant with a P-value < 0.05 and are consistent with a range of other

Table 4. The mean rank of factors influencing FDI flows to Omani ports.

	FDI Factor	Mean	StDev	C.V %	T-value	P-value
1	Strategic location	4.510	0.644	14.279	16.739*	0.000
2	Social and political stability	4.163	1.033	24.814	7.924*	0.000
3	Easy access to skilled manpower	3.980	0.836	21.005	8.371*	0.000
4	Good infrastructure	3.960	0.968	24.444	7.012*	0.000
5	Easy access to technology	3.882	0.864	22.257	7.296*	0.000
6	Access to finance	3.837	1.034	26.948	5.699*	0.000
7	Proximity to customers	3.804	0.849	22.319	6.762*	0.000
8	Government policy & regulations	3.804	1.039	27.313	5.522*	0.000
9	Low level of corruption	3.720	1.051	28.253	4.846*	0.000
10	Ease of doing business	3.680	1.039	28.234	4.629*	0.000
11	Competition from other sectors	3.604	1.067	29.606	3.924*	0.000
12	Low transaction costs (e.g. import tariffs)	3.471	1.046	30.135	3.213*	0.002

Source: Authors' calculation from the questionnaire survey, 2019.

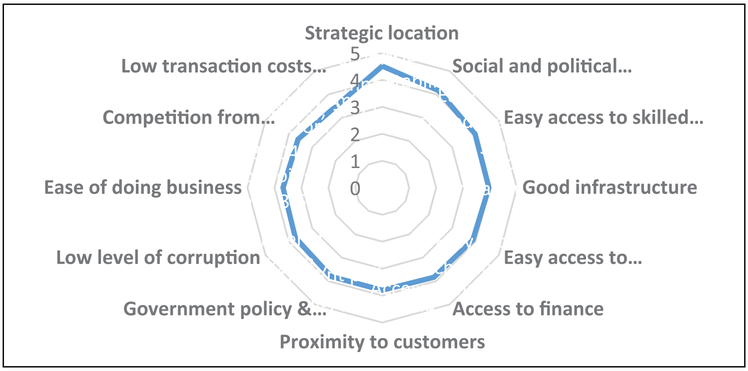

Figure 1. Mean ranks of factors influencing FDI flows to Omani ports.

studies.[40] Also, for Oman's port sector, FDI can contribute significantly in the transfer of technology (ranked fifth), particularly for the third and fourth generation category of ports, which are technology-dependent. The contribution of FDI in technology transfer has been well documented.[41]

40. Ferrari, *Ports and Regional Economic Development 2011*; Berköz, 'The Role of Ports'; Guoqiang et al., 'Container Ports Development and Regional Economic Growth'; Oxford Economics, *The Economic Impact of the UK Maritime Services Sector*.
41. Lall, *FDI and Development*; Goldberg, 'Financial Sector FDI and Host Countries'; Ok, 'What Drives Foreign Direct Investment into Emerging Markets?'; Wang and Blomström, 'Foreign Investment and Technology Transfer'.

Table 5. Impact of FDI inflows on Omani Ports.

	FDI benefits	Extent of agreement					Chi^2	P-value
		1	2	3	4	5		
		SD	D	N	A	SA		
1	FDI contributes to creation of new jobs	–	–	21.6	49.0	29.4	6.12	0.047
2	FDI inflows create spill over and demonstration effect on domestic firms	2.0	2.0	26.0	46.0	24.0	34.40	0.000
3	FDI supplements domestic investment to increase ports performance	–	–	20.0	54.0	26.0	9.88	0.007
4	Gives easier access to financial resources due to Multinational Enterprises (MNEs)	–	2.0	25.5	45.1	27.5	19.20	0.000
5	FDI results in knowledge transfer from MNEs to Omani Ports	–	3.9	21.6	52.9	21.6	25.47	0.002
6	Potential benefits of FDI to Omani ports include better access to capital	–	–	16.3	59.2	24.5	15.22	0.000
7	Provides new organizational and managerial practices	–	–	18.4	55.1	26.5	10.94	0.004
8	FDI brings to Omani ports advanced technology	–	2.0	19.6	54.9	23.5	29.71	0.000

Note: SD = strongly disagree; D = disagree; n = neutral; A = agree; SA = strongly agree.
Source: Authors' calculation from the questionnaire survey, 2019.

In answering the open question in the questionnaire about the constraints on investment in the port sector, the majority of respondents felt that complicated and bureaucratic shipping procedures, excessive workforce, lack of skilled workers and lack of modern bulk handling methods could impair FDI in the future. The survey suggested that the port sector needed to be modernized to international standards, which could be achieved through developing an effective maritime strategy that promotes the private sector and foreign direct investment, the adoption of a prudent macroeconomic policy by the government and the granting of favourable incentives to attract foreign investors.

Based on the literature review and the analysis of the primary and secondary data, a strength, weakness, opportunity and threat (SWOT) analysis of Oman's port sector was undertaken. Such analyses can be an extremely valuable means of informing business strategy, as they have the potential to identify untapped niches in the market, pinpoint hindrances that could hamper growth, and highlight new opportunities and external threats.[42] A SWOT analysis for Oman's port sector is presented in Table 7.

Conclusion

The Omani port sector has performed well over recent years, as demonstrated in the growth of ship movements and cargo traffic, and the remarkable global indicators in port

42. A. Coman and B. Ronen, 'Focused SWOT: Diagnosing Critical Strengths and Weaknesses', *International Journal of Production Research*, 40 (2009), 5677–89.

Table 6. The mean rank of the impact of FDI inflows on Omani ports.

	FDI Factor	Mean	StDev	C.V %	T-value	P-value
1	Potential benefits of FDI to Omani ports include better access to capital	4.082	0.640	15.67	11.827	0.000
2	Provides new organizational and managerial practices	4.081	0.672	16.46	11.268	0.000
3	FDI contributes to creation of new jobs	4.078	0.717	17.58	10.745	0.000
4	FDI inflows supplement domestic investment in ports to increase port performance	4.060	0.682	16.79	10.983	0.000
5	FDI brings to Omani ports advanced technology	4.000	0.721	18.02	9.903	0.000
6	Gives easier access to financial resources due to Multinational Enterprises (MNEs)	3.980	0.787	19.77	8.895	0.000
7	FDI results in knowledge transfer from MNEs to Omani Ports	3.922	0.771	19.65	8.541	0.000
8	FDI creates spill over and demonstration effect on domestic firms	3.880	0.872	22.47	7.134	0.000

Source: Authors' calculation from the questionnaire survey, 2019.

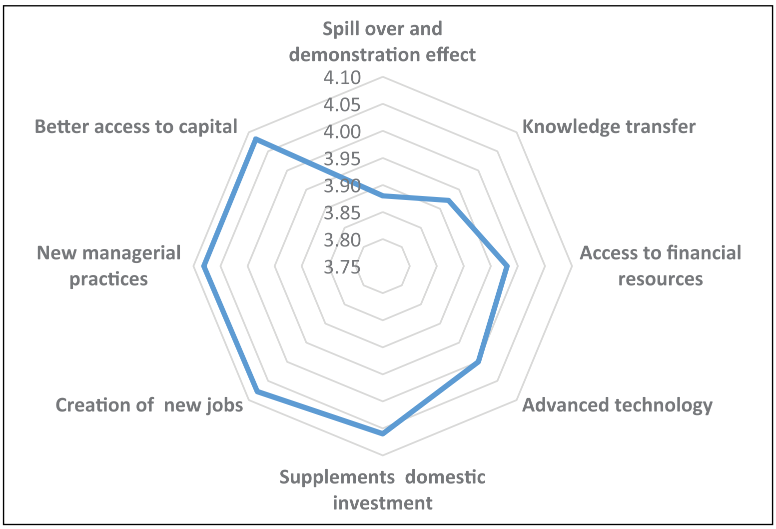

Figure 2. Mean ranks of impact of FDI inflows on Omani ports.

connectivity and port efficiency. The sector contributed positively to the Sultanate's sustained economic growth, competitiveness and diversification strategy.

Despite these achievements, the sector needs to be upgraded and modernized to meet the growing demand for high-quality, international-standard shipment services. There is

Table 7. SWOT analysis framework.

Area	Details	Implication
Strengths	- The strategic location of Oman as a global logistic hub with straits of Hormuz in the north and the Arabian sea in the east - Long coastline extending more than 2,000km - Social, economic and political stability - Good ports indicators: top 18 ports connectivity and 18 top ports efficiency - Well developed infrastructure and communications network	Launch promotional campaigns for Omani ports abroad to familiarize investors with Oman to attract more FDI and shipping lines to the sector
Weaknesses	- Lack of modern bulk handling methods - Excessive work force in the ports sector - Bureaucratic inefficiencies in shipping procedures - Lack of detailed performance indicators - Inadequate skilled labour and high dependence on foreign workers from neighboring countries.	Introducing an economic reform to address the inefficiencies in the sector particularly that related to procedures and human resources
Opportunities	- Need for efficient ports with international standards - Free Trade Agreements for the MENA region, GCC, and USA - MOUs with Hashimyat Kingdom of Jordan, the Marshall Islands, the United Arab Emirates, and the Kingdom of Bahrain - Free zone attracting more FDI - Commercialization of services	Creating strategic alliances with potential partners in marine industry to promote the efficiency of the ports sector in Oman
Threats	- Tough competition from neighboring ports - Regional stability in GCC and Iran - Global financial, maritime crises - Sensitivity of Oman economy to volatile oil prices - High dependence on external work force - Sustainability of economic and political stability	Improving the efficiency of the operations of the Group's companies, optimal utilization of resources and strengthening risk management units

Source: Developed by authors.

much potential for foreign direct investment to play a role in the development of Oman's port sector. FDI has the capacity to provide the sector with access to capital, advanced technology, strategic alliances and innovative organizational and managerial practices. To promote FDI in the port sector, the government should introduce economic reforms and formulate a national maritime development strategy to facilitate private investment, improve service quality and promote the sector's competitiveness. In implementing this strategy, the government should take the role of planner, facilitator, developer and regulator, while providing connectivity to the hinterland of the country. The private sector/FDI should function as service provider, operator and sometimes developer, motivated by strong port-tailored incentives. The government should exercise its regulatory role in an effective and efficient manner.

Although this study provides insights into the potential of FDI in the Omani port sector, it was constrained by a lack of data for FDI across the sector and could therefore only consider three ports. Perhaps, in the future, a comprehensive study of all the Sultanate's ports, with disaggregated data for FDI in each port, will allow a fuller assessment of the impact of FDI on the performance of the port sector in Oman.

Author biographies

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