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A Suez Canal Logistics Hub Role in the Global Shipping Network: A Case Study of a Stainless-Steel Product

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1. Introduction

- Maritime Seaborne Trade.
- Maritime Routes.
- Suez Canal Geopolitical Importance.
- Trade Efficiency and Competitiveness.
- Logistics Hub = Suez Canal.

2. Research Question and Objectives

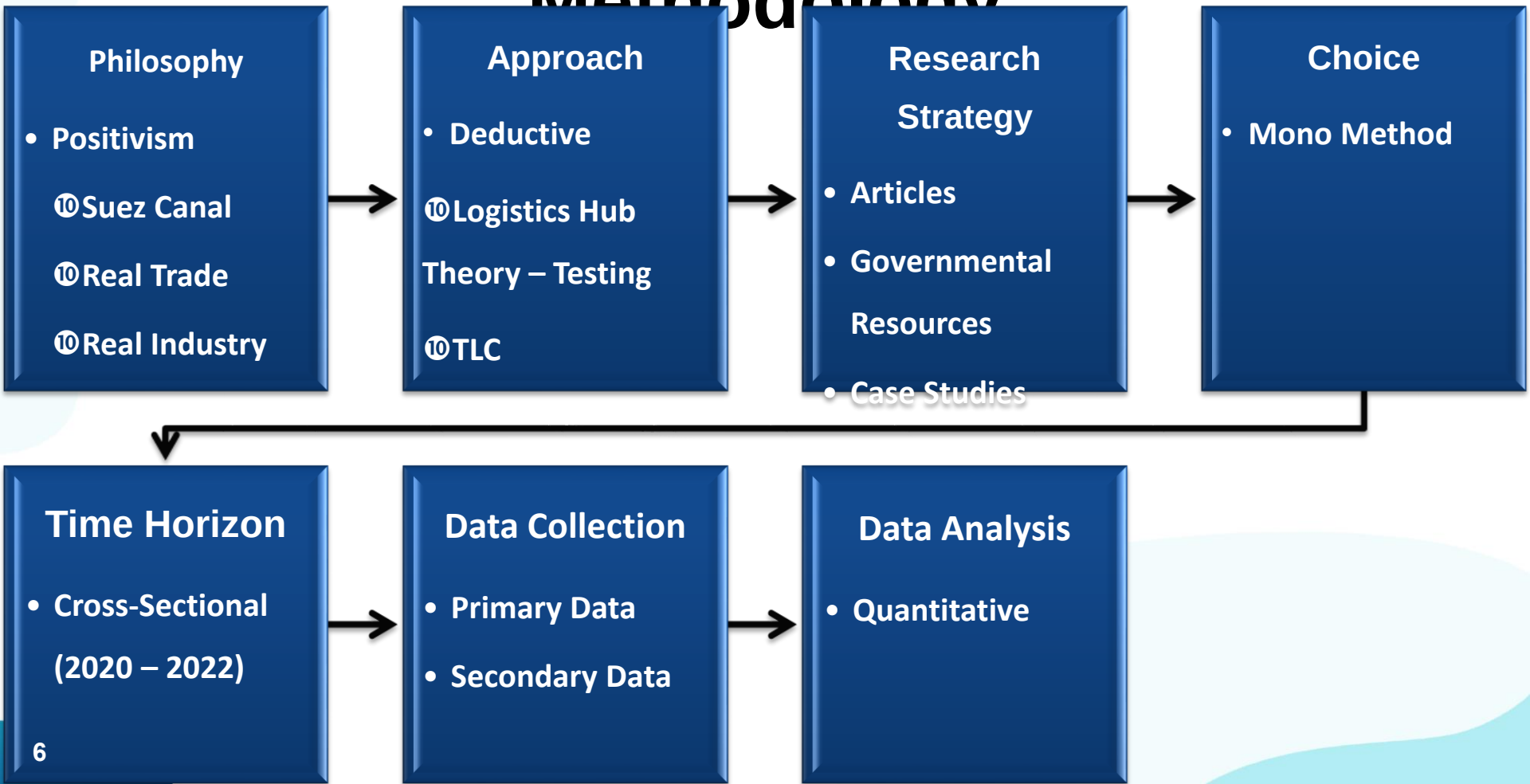
Research Question:

- How will developing the Suez Canal Logistics Hub affect the international maritime network?

Objectives:

- To enhance the international maritime networks by developing the Suez Canal Logistics Hub.
- To calculate the Total Landed Cost (TLC) when passing through Suez Canal which are applied on 3 specific routes.
- To develop the logistics performance indicator (LPI) of Egypt.

3. Research Methodology



4. Total Landed Cost (TLC)

Unit Cost of a Product + Freight Cost + Handling Fees + Customs + Overhead Expenses

Given and Assumptions

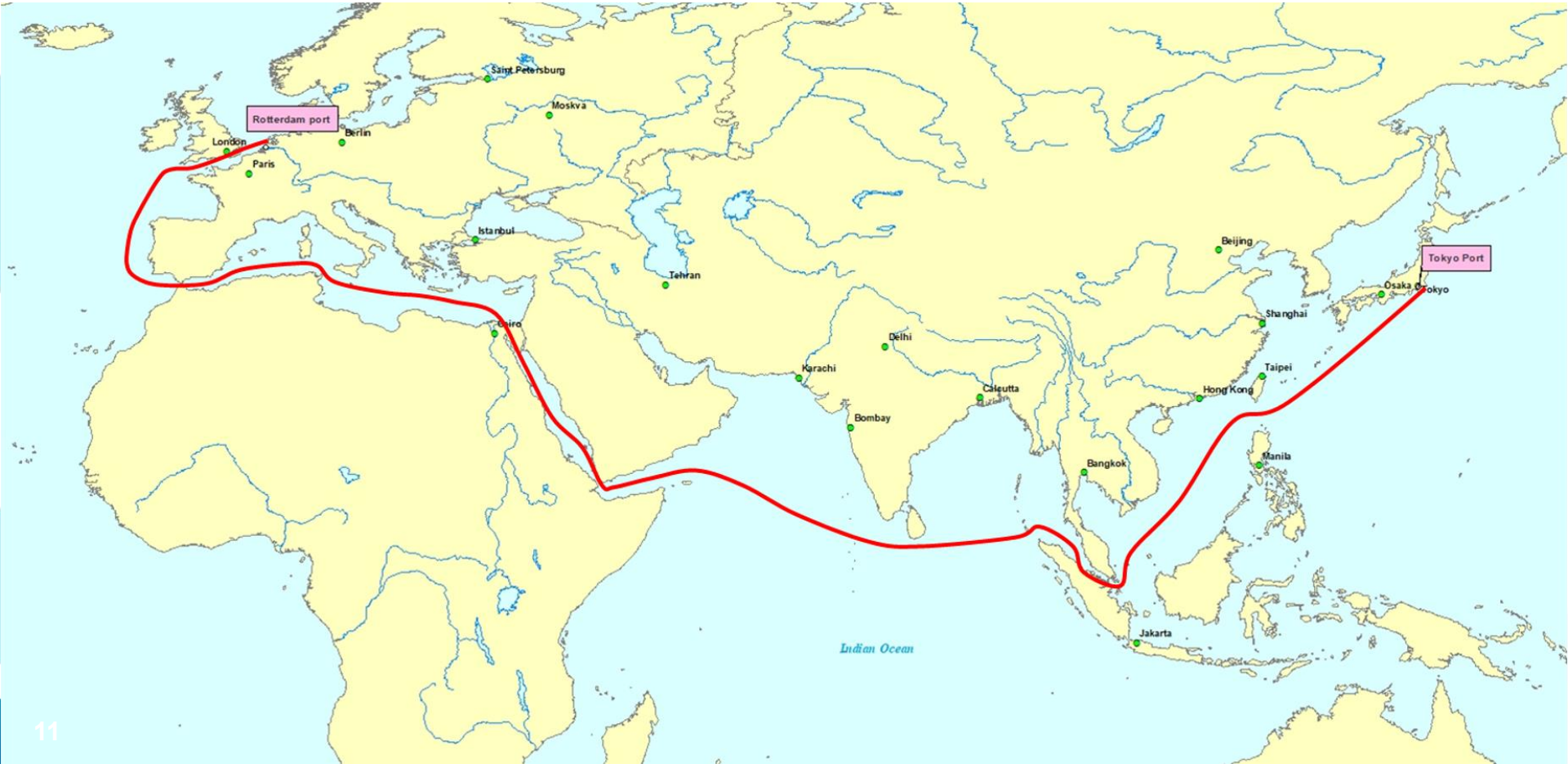
- **Scenario A:** Tokyo Port to Rotterdam Port.
- **Scenario B:** Jebel Ali Port to Rotterdam Port.
- **Scenario C:** Port Said Port to Rotterdam Port.
- Compare between Scenario A and C.
- Compare between Scenario B and C.
- Distance for Manufacturers.
- Cost of Production for each Manufacturer.
- Transportation Cost for each Manufacturer.

5. Maritime Network Scenarios (Direct and Transshipment)

Scenario A and C

- **Distance from Manufacturer (A)** in Port of Tokyo, Japan to Port of Rotterdam is **12,796.08 miles**.
- **Distance from Manufacturer (C)** in Port Said Port, Egypt to Port of Rotterdam is **3,736.66 miles**.
- **Production cost of Manufacturer (A)** in Tokyo, Japan is **$63.10** per unit.
- **Transportation cost for Manufacturer (A)** in Tokyo, Japan is **$13.53** per unit/mile.
- **Production cost of Manufacturer (C)** in Port Said, Egypt is **$50** per unit.
- **Transportation cost for Manufacturer (C)** in Port Said is **$4.52** per unit/mile.
- **Distance between the two manufacturers** is 12,796.08 miles - 3,736.66 miles = **9,059.42** miles.

Tokyo Port to Rotterdam Port (Scenario A and C)



6. Calculations – Scenario A and C

Landed Cost of Manufacturer (A) = Landed Cost of Manufacturer (C)

Landed Cost (A) = Landed Cost (C)

Cost of Production of (A) + Transportation cost of (A) = Cost of Production (C) + Transportation cost of (C)

$63.10 + 13.53 (X) = $50 + $4.52 (9,059.42 -X)

63.1+13.53X=50+4.52(9,059.42-X)

63.1+13.53X=-4.52X+40,998.5784

13.53X=-4.52X+40,935.4784

18.05X=40,935.4784

X =2,267.89 Miles

Manufacturer (A) in Tokyo, Japan can cover **2,267.89** Miles.

Manufacturer (C) in Port Said, Egypt = (9,059.42 – 2,267.89) = **6,791.53** Miles.

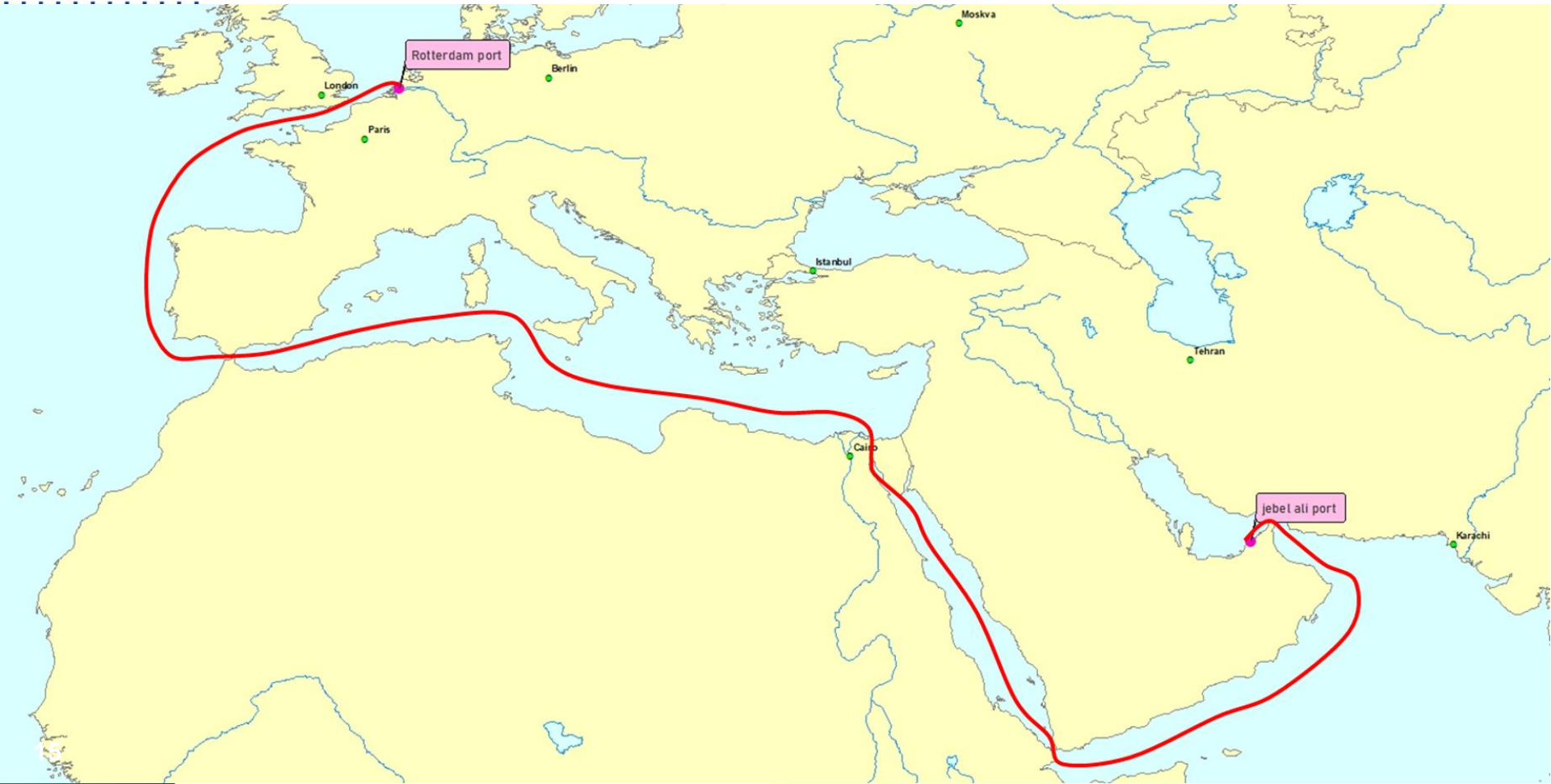
Findings – Scenario A and C

- Manufacturer **(A)** in Tokyo, Japan can cover **2,267.89** Miles.
- Manufacturer **(C)** in Port Said, Egypt can cover **6,791.53** Miles.
- Achieving less landed cost will enable **Manufacturer (C)** to take advantage in the market over the competitor **Manufacturer (A)**.
- TLC for Scenario A= $63.10 + $13.53 + $21.25 = **$97.88**
- TLC for Scenario C= $50 + $4.52 + $19.58 = **$74.10**

Scenario B and C

- **Distance from Manufacturer (B)** in Port of Jebel Ali, UAE to Port of Rotterdam is **7,018.03 miles**.
- **Distance from Manufacturer (C)** in Port Said Port, Egypt to Port of Rotterdam is **3,736.66 miles**.
- **Production cost of Manufacturer (B)** in Tokyo, Japan is **$55.83** per unit.
- **Transportation cost for Manufacturer (B)** in Tokyo, Japan is **$14.28** per unit/mile.
- **Production cost of Manufacturer (C)** in Port Said, Egypt is **$50** per unit.
- **Transportation cost for Manufacturer (C)** in Port Said is **$4.52** per unit/mile.
- **Distance between the two manufacturers** is 7,018.03 miles - 3,736.66 miles = **3,281.37** miles.

Jebel Ali Port to Rotterdam Port (Scenario B and C)



Calculations – Scenario B and C

Landed Cost of Manufacturer (B) = Landed Cost of Manufacturer (C)

Landed Cost (B) = Landed Cost (C)

Cost of Production of (B) + Transportation cost of (B) = Cost of Production (C) + Transportation cost of (C)

$55.83 + 14.28 (X) = $50 + $4.52 (3,281.37 -X)

55.83+14.28X=50+4.52(3,281.37-X)

55.83+14.28X=-4.52X+14,881.7924

14.28X=-4.52X+14,825.9624

18.8X=14,825.9624

X = 788.62 miles

Manufacturer (B) in Jebel Ali, UAE can cover **788.62** miles.

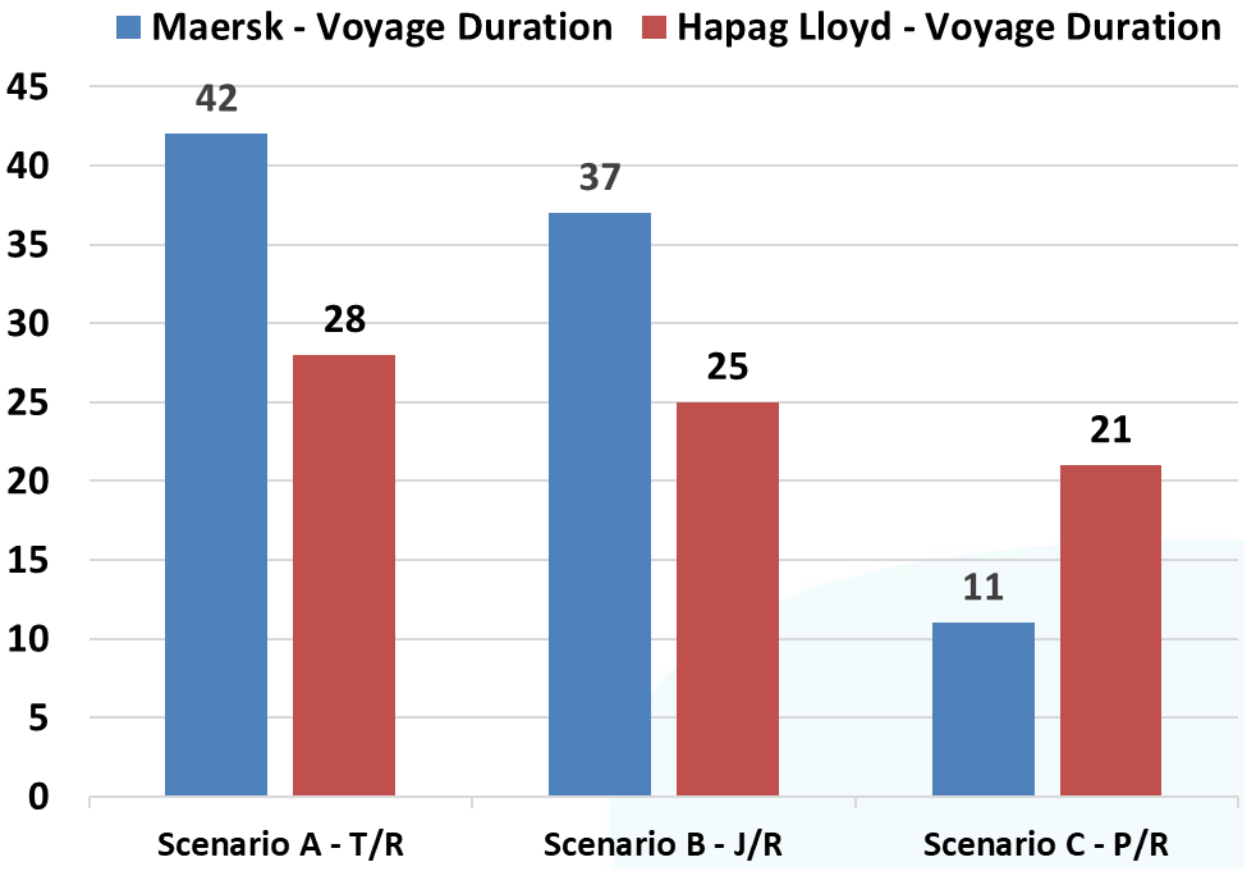
Manufacturer (C) in Port Said, Egypt = (3,281.37 – 788.62) = **2,492.75** miles.

Findings – Scenario B and C

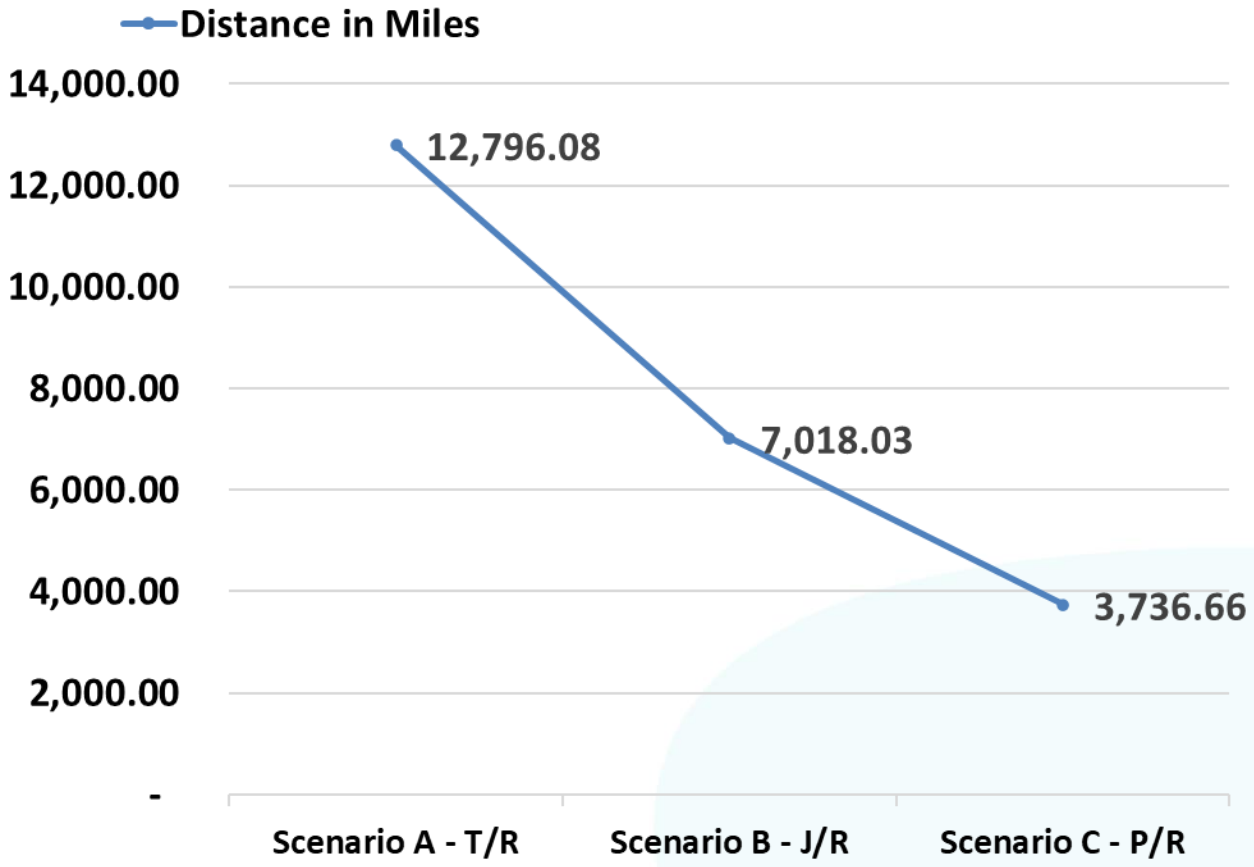
- **Manufacturer (B)** in Jebel Ali, UAE can cover **788.62** miles.
- **Manufacturer (C)** in Port Said, Egypt can cover **2,492.75** miles.
- Achieving less landed cost will enable **Manufacturer (C)** to take advantage in the market over the competitor **Manufacturer (B)**.
- **TLC for Scenario B**= $55.83 + 14.28 + $21.25 = **$91.36**
- **TLC for Scenario C**= $50 + $4.52 + $19.58 = **$74.10**

7. Final Results

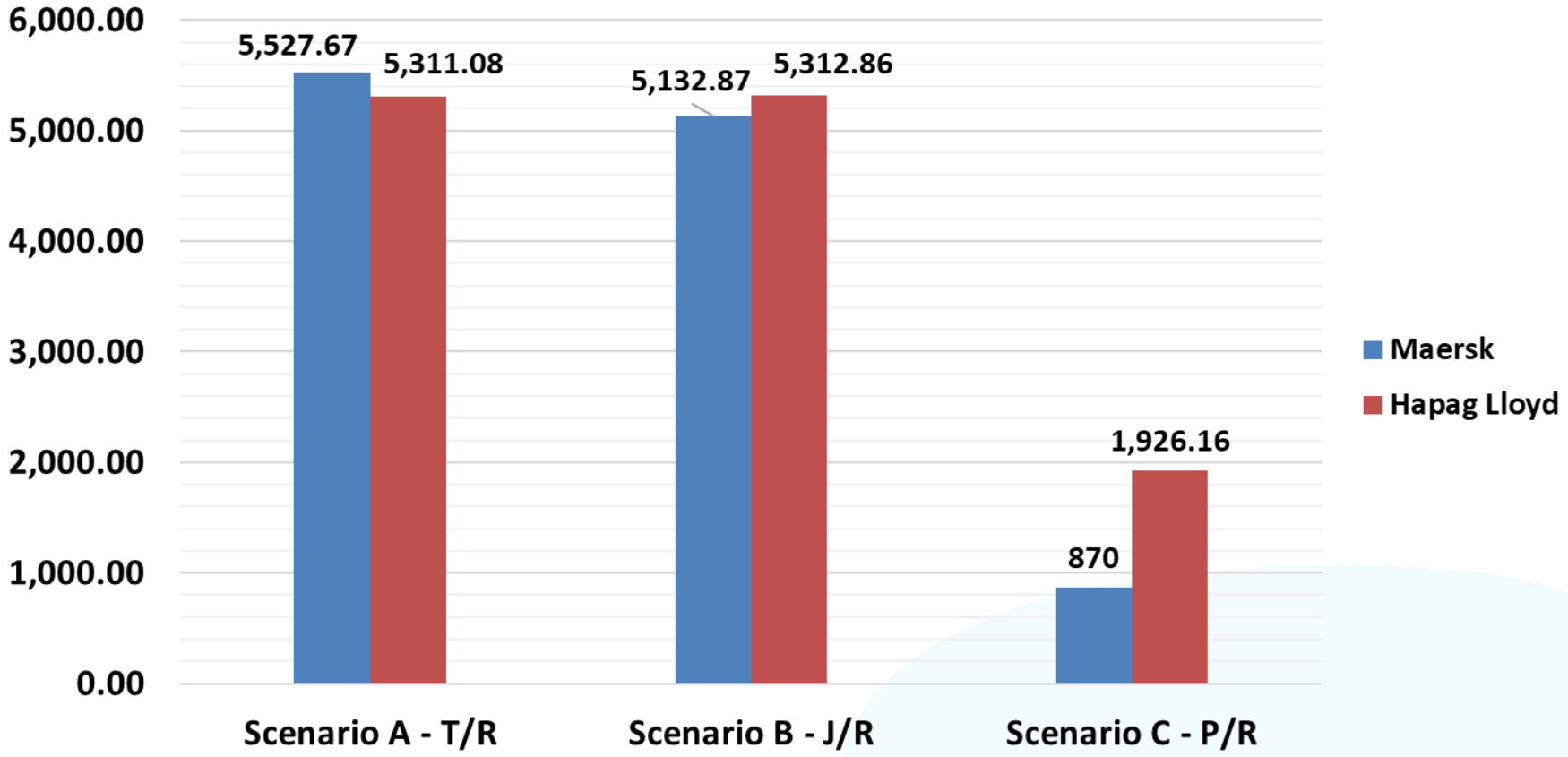
Results


Maersk - Voyage Duration
Hapag Lloyd - Voyage Duration
45
40
35
30
25
20
15
10
5
0
42
28
37
25
11
21
Scenario A - T/R
Scenario B - J/R
Scenario C - P/R

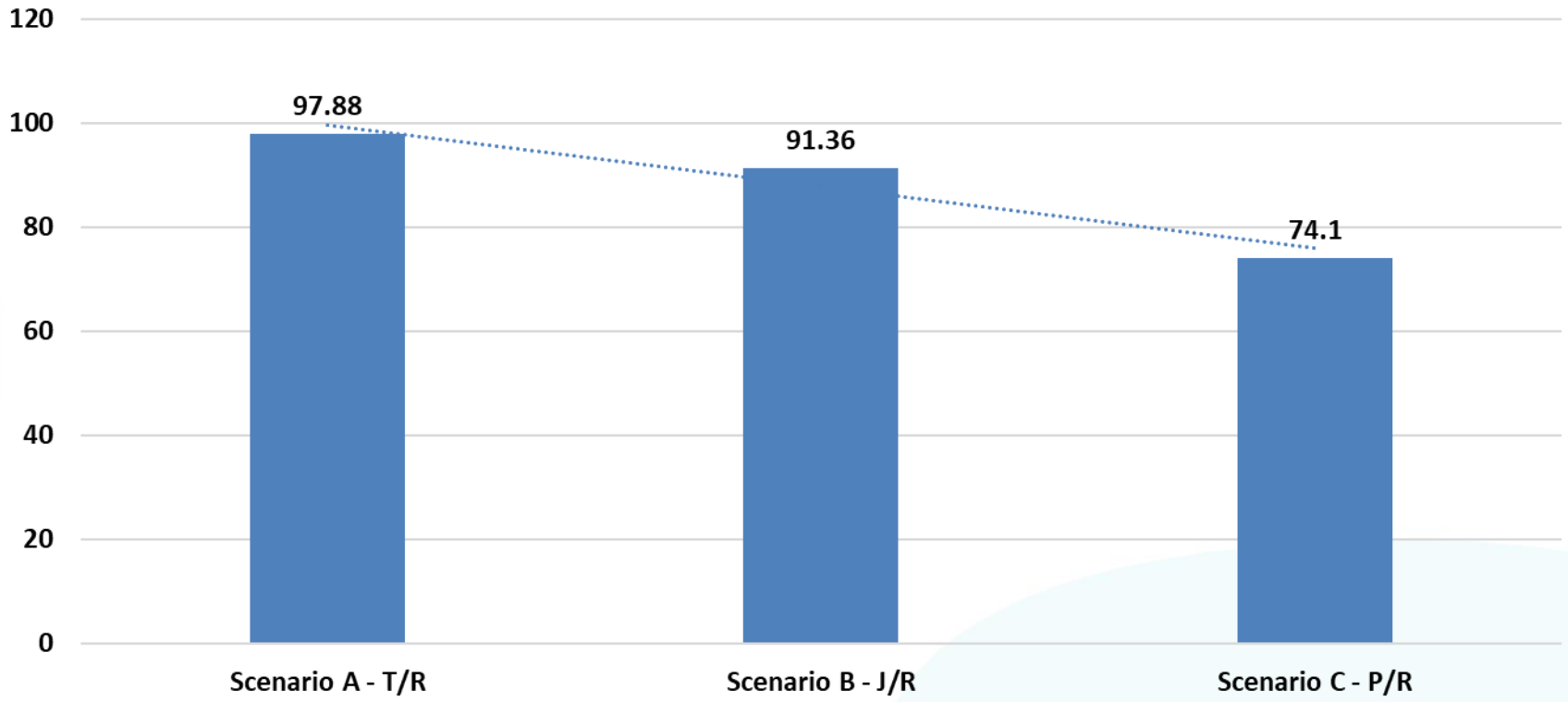
Results


Distance in Miles
14,000.00
12,000.00
10,000.00
8,000.00
6,000.00
4,000.00
2,000.00
-
12,796.08
7,018.03
3,736.66
Scenario A - T/R
Scenario B - J/R
Scenario C - P/R

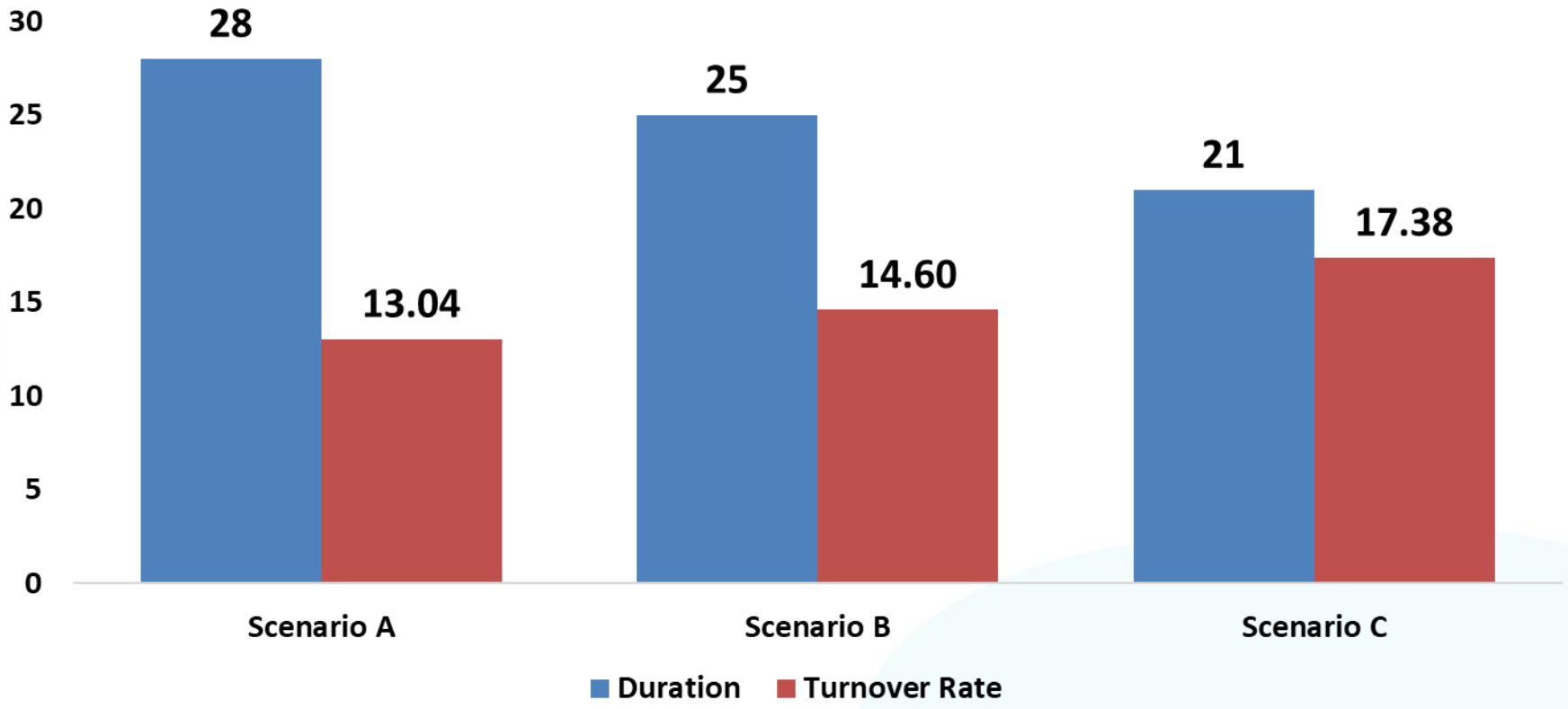
Rates Analysis



TLC Results


120
100
80
60
40
20
0
97.88
91.36
74.1
Scenario A - T/R
Scenario B - J/R
Scenario C - P/R

Capital Cycle Turnover Rate



Results

P.O.C	Distance	Maersk Voyage Duration	Hapag Lloyd Voyage Duration	TLC
Scenario A	12,796.08 miles	42 Days	28 Days	$97.88
Scenario B	7,018.03 miles	37 Days	25 Days	$91.36
Scenario C	3,736.66 miles	11 Days	21 Days	$74.10

8. Conclusion

TLC is lower when goods pass through the Suez Canal Logistics Hub than other potential hubs.

Suez Canal Logistics Hub facilitates highly efficient direct shipping or transshipment activities.

9. Recommendations

- Suez Canal Authority to use the TLC as KPI's their clients and also to be able to measure
- Shipping lines take advantage of the Suez Hub as it provides less TLC.
- Egyptian government to keep working on Suez Canal Logistics Hub.

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Thank You