



A Decade of Collaboration: Charting the Path Forward through Partnerships in M&E

THE 10th M&E NETWORK FORUM

29 November 2023 | Seda Vertis North, Quezon City

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Assessing the Impact of Port Operation Privatization of Philippine Ports Authority (PPA) Ports Under the Port Terminal Management Regulatory Framework

NRO Caraga and Caraga State University



PRESENTATION OUTLINE



BACKGROUND OF THE STUDY

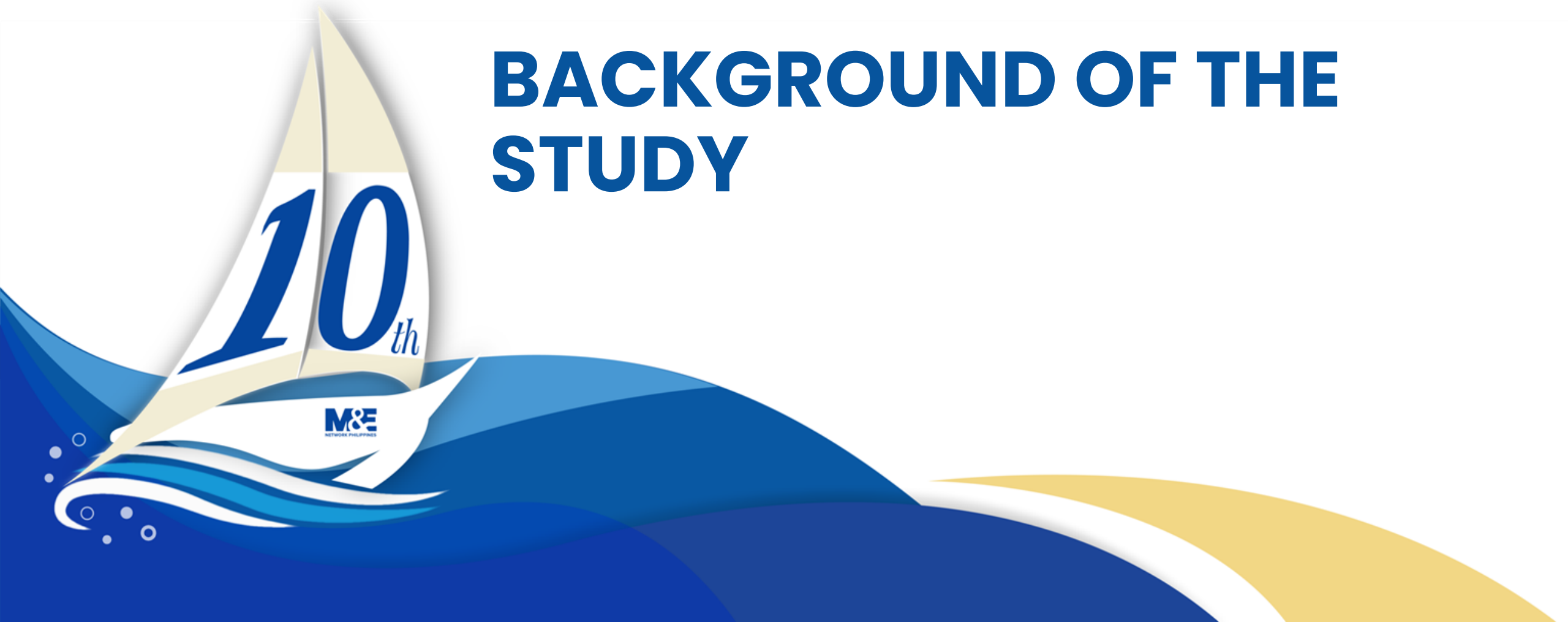
EVALUATION FRAMEWORK

PRELIMINARY RESULTS

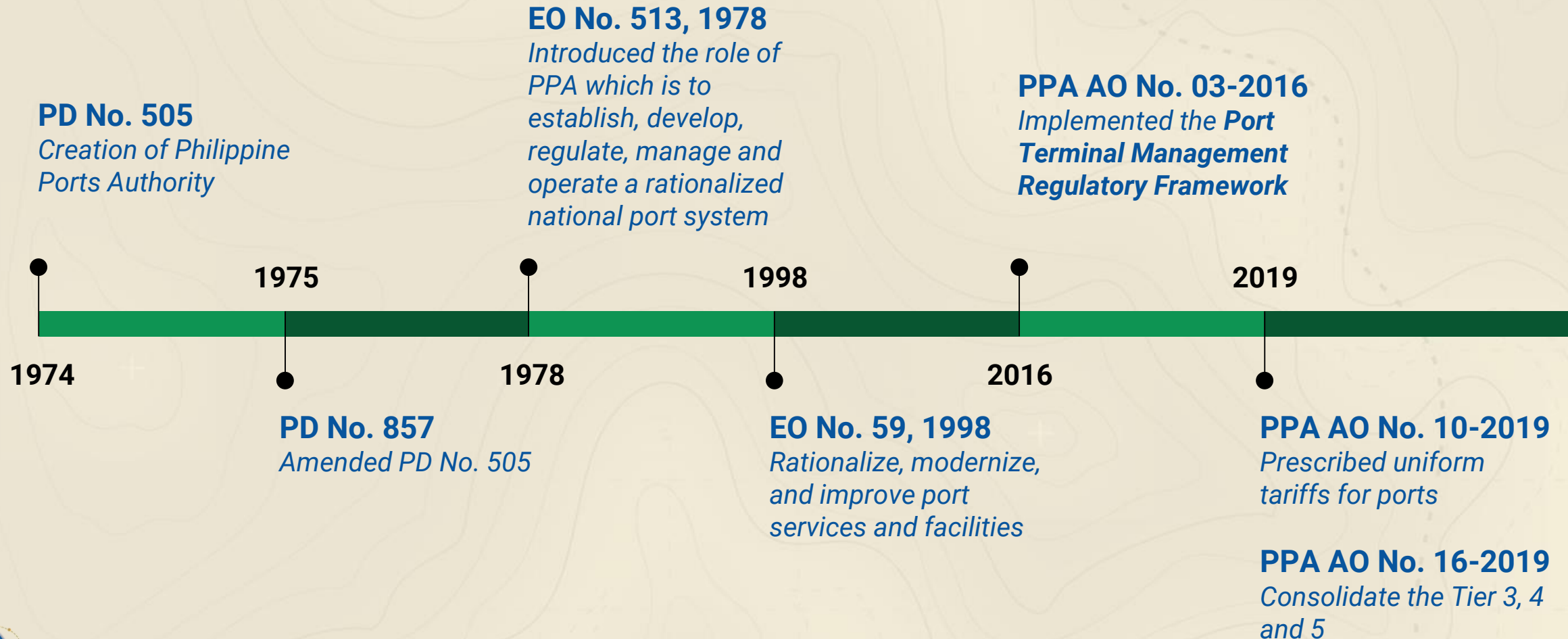
WAYS FORWARD



BACKGROUND OF THE STUDY



Background



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Period of Policy Adoption

2016

PPA AO No. 03-2016

Implemented the Port Terminal Management Regulatory Framework (PTMRF)

2021

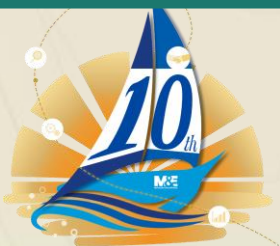
Privatized Ports

1. Ormoc Port, Leyte
2. Legazpi Port, Albay
3. Tabaco Port, Albay
4. Zamboanga Port, Zamboanga del Sur
5. Iligan Port, Lanao del Norte
6. Ozamiz Port, Misamis Occidental
7. Calapan Port, Oriental Mindoro
8. Tacloban Port, Leyte

2022

Additional Privatized Ports

9. Matnog Port, Sorsogon
10. Nasipit Port, Agusan del Norte
11. Surigao Port, Surigao del Norte
12. Pulpandan Port, Negros Occidental
13. Tagbilaran Port, Bohol
14. Masao Port, Agusan del Norte
15. Pagadian Port, Zamboanga del Sur
16. Sasa Wharf, Davao del Sur
17. Puerto Princesa Port, Palawan



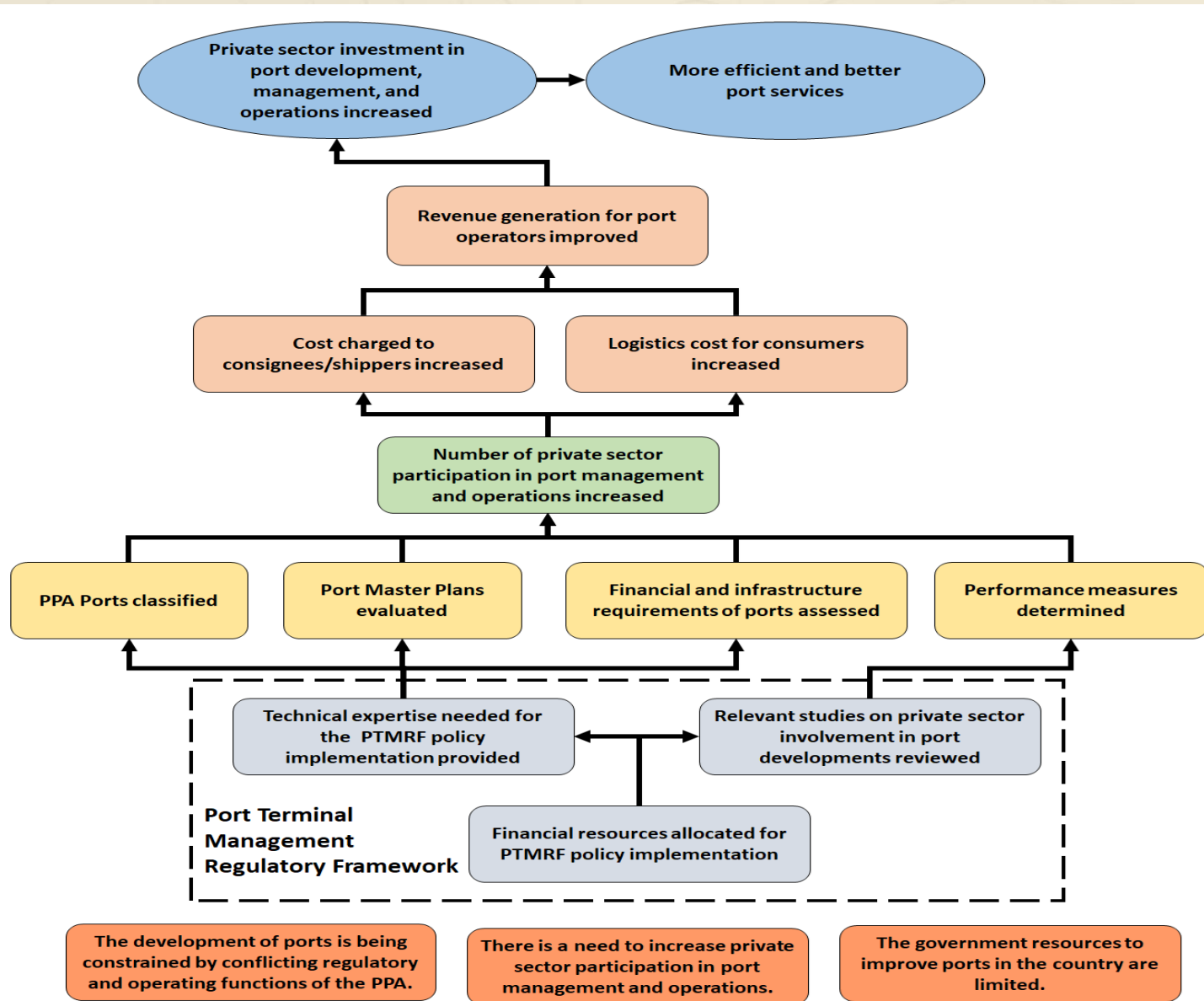
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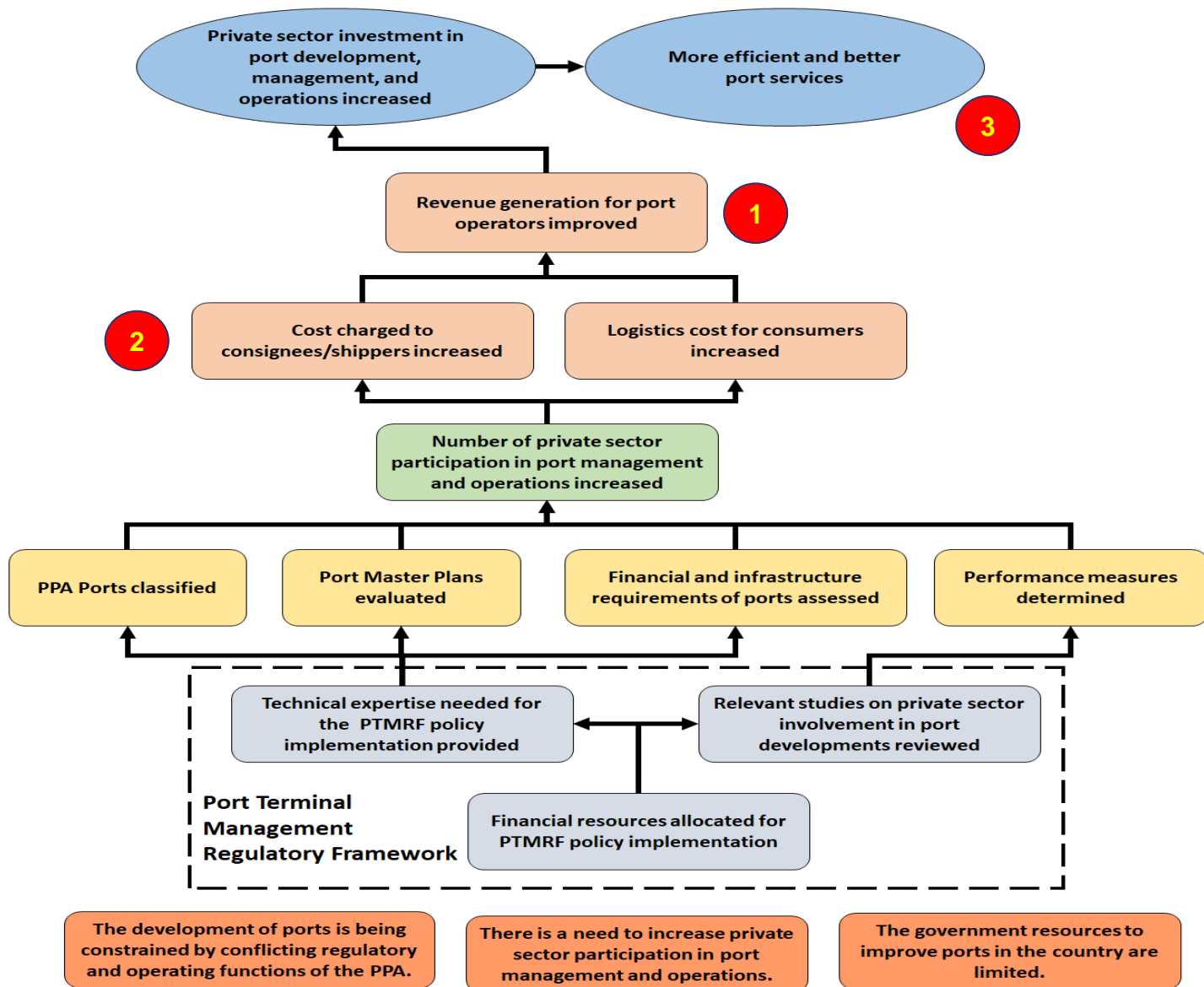
Theory of Change



Objectives

1. Describe the trends of PTMRF on port services fees and port operators' revenue
2. Assess the effects of the PTMRF on the quality of PPA port services and the welfare of port users

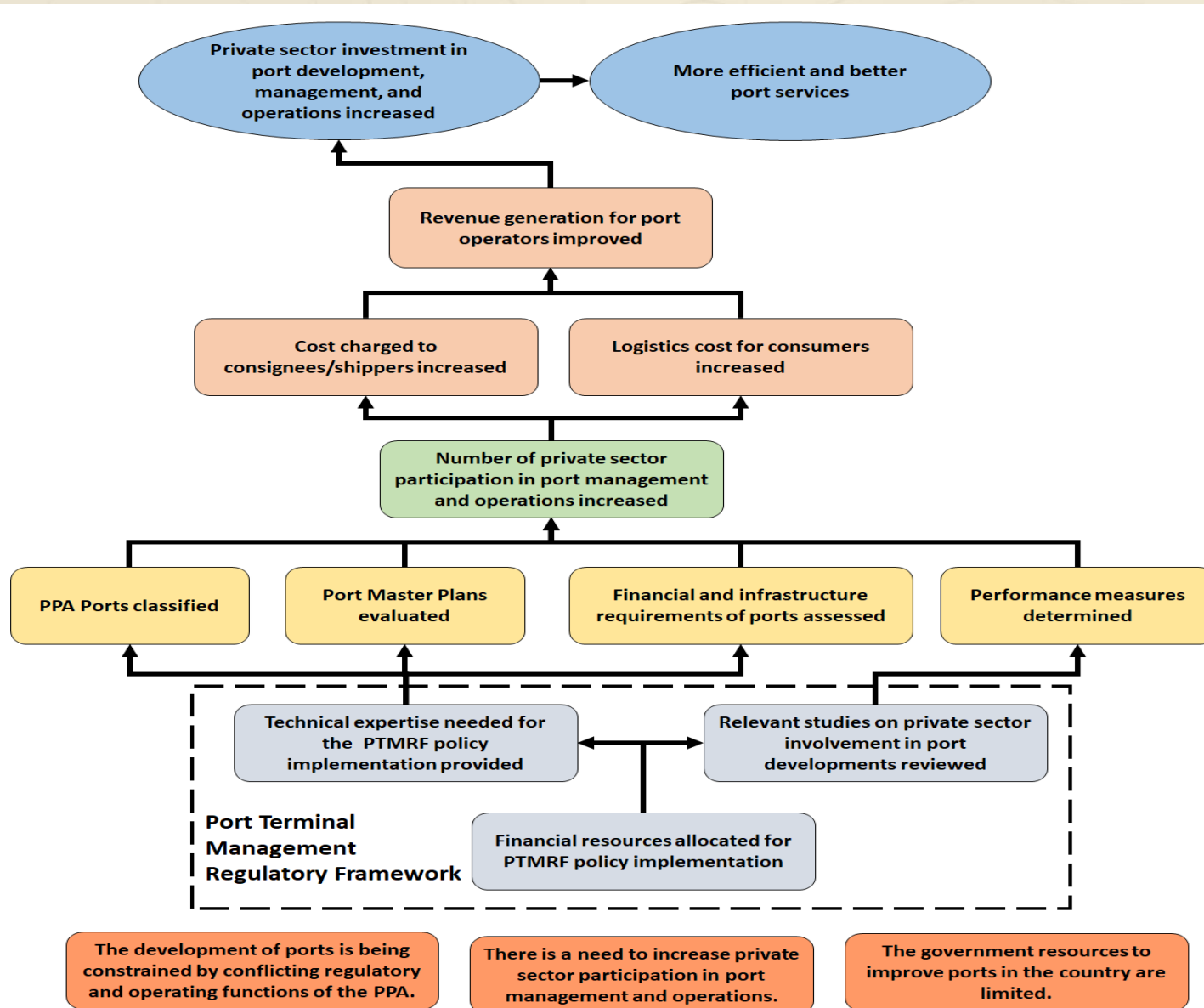
Theory of Change



Evaluation Questions

1. What is the impact of PTMRF on the average domestic and foreign cargo volume shipped/consigned?
2. What is the impact of PTMRF on the number of passengers embarked/diseembarked)?
3. What is the impact of PTMRF on the service and waiting time for domestic and foreign route vessels?

Theory of Change



Key Indicators

Service efficiency:

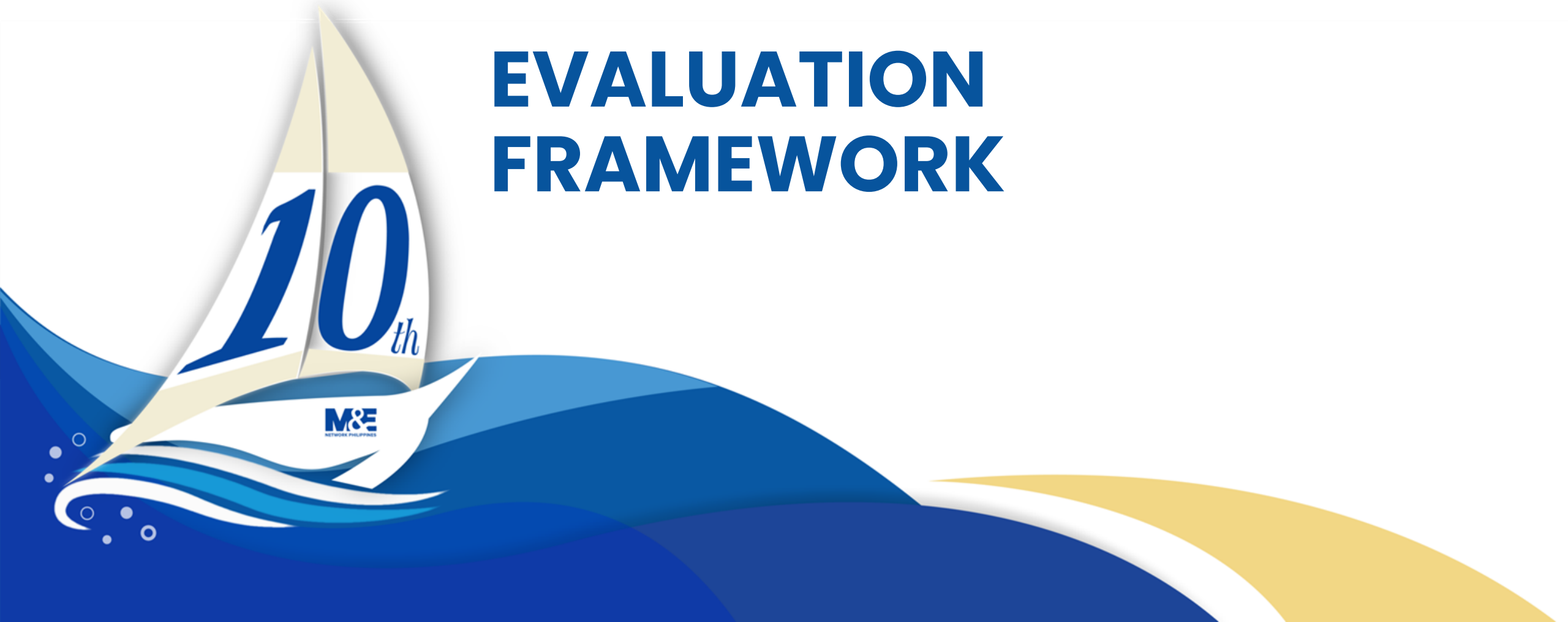
- Service time (foreign, domestic)
- Waiting time (foreign, domestic)

Demand:

- Average domestic cargo volume shipped/consigned (input, output)
- Average foreign cargo volume shipped/consigned (input, output)
- Number of passengers (embarked, disembarked)



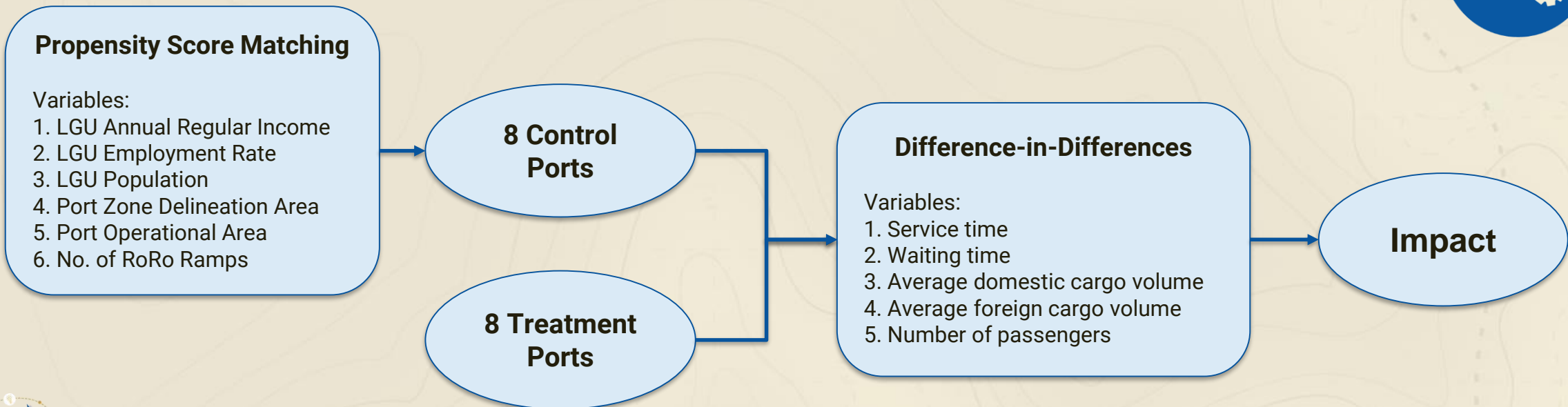
EVALUATION FRAMEWORK



EVALUATION FRAMEWORK



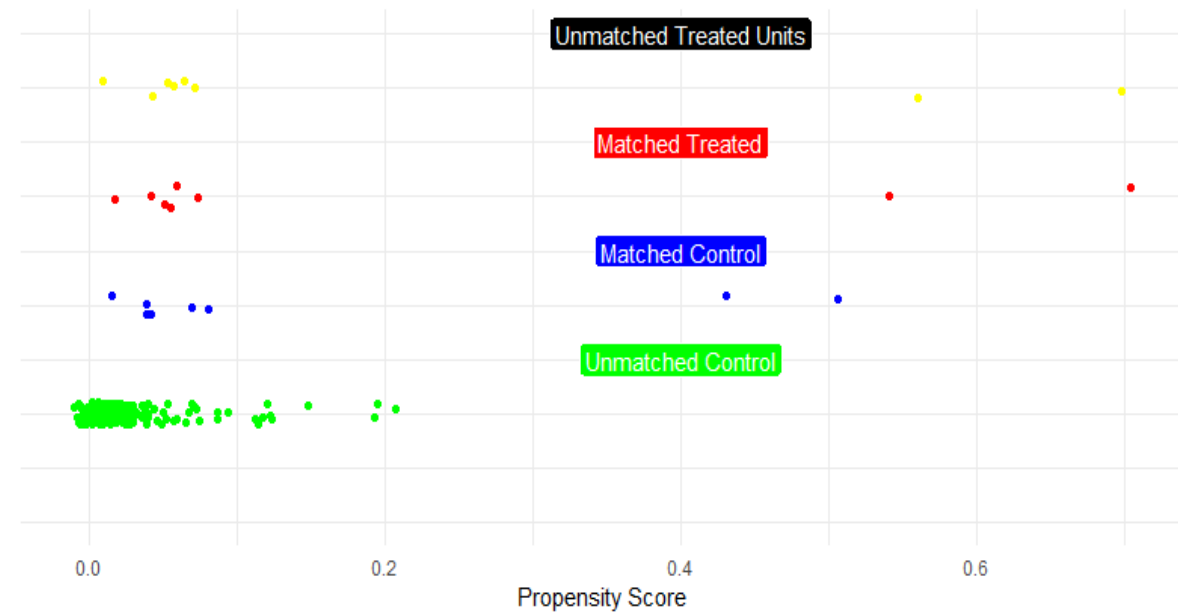
Intervention	Unit of Assignment	Unit of Treatment	Unit of Analysis
Port Terminal Management Regulatory Framework	Philippines	PPA Ports	PPA Ports



PROPENSITY SCORE MATCHING

Covariates	Means		Std. Mean Difference	t-test (1) - (2)	p-value $\alpha = 0.05$
	Treatment (1)	Control (2)			
Log of Annual Regular Income (PhP)	20.507	20.529	-0.037	-0.035	0.973
Log of Host LGU Population	12.344	12.237	0.170	0.192	0.853
Employment Rate (%)	57.386	57.745	-0.143	-0.308	0.767
No. of Roro Ramps	3.625	3.375	-0.556	-0.215	0.836
Port Zone Delineation Area (sq. m.)	362,298.113	696,175.250	-0.046	-0.542	0.604

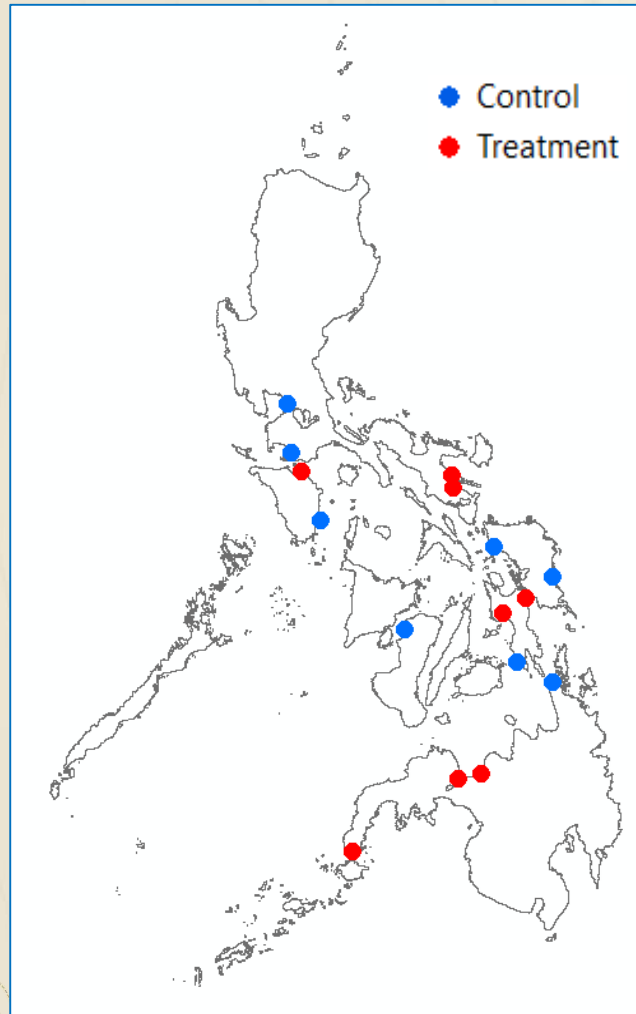
Propensity Scores
By Treatment and Matched Groups



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PROPENSITY SCORE MATCHING



Treatment Ports

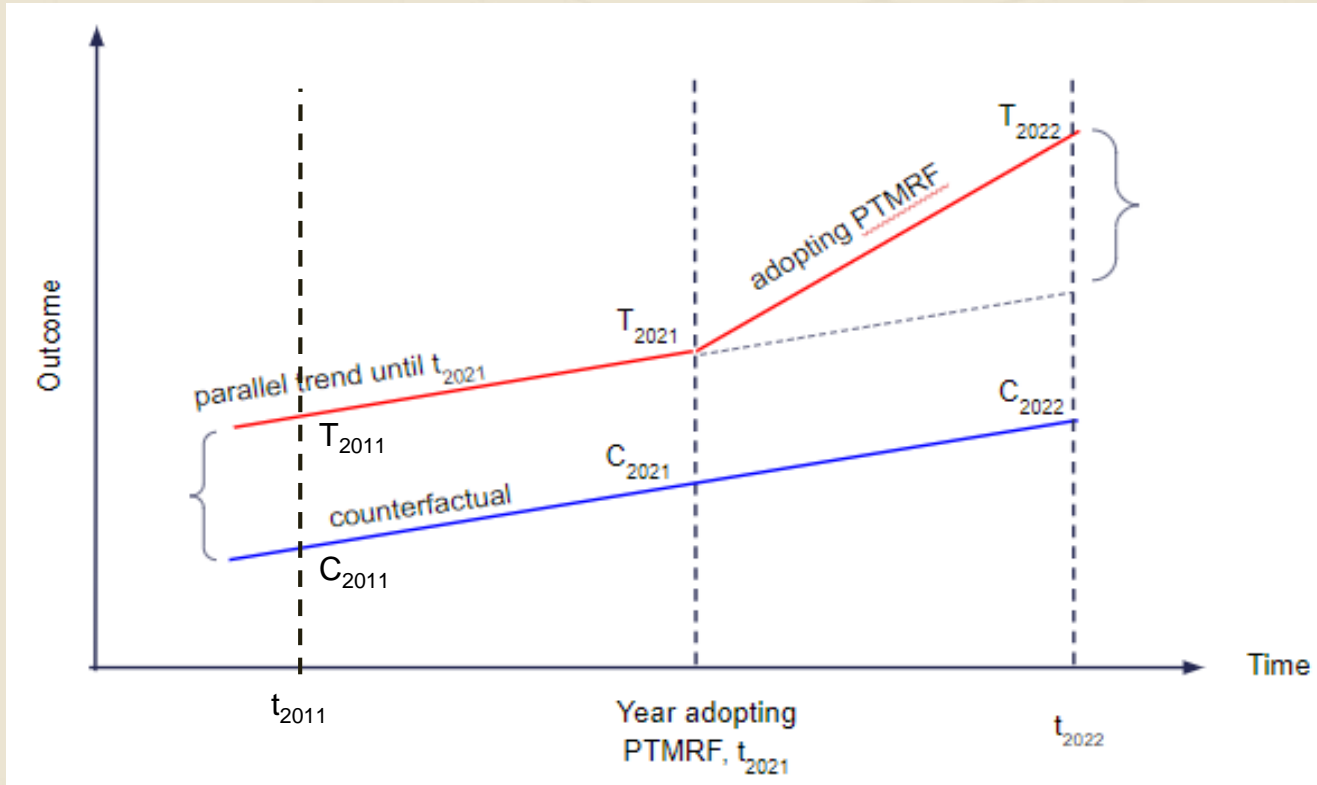
1. Ormoc Port, Leyte
2. Legazpi Port, Albay
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4. Zamboanga Port, Zamboanga del Sur
5. Iligan Port, Lanao del Norte
6. Ozamiz Port, Misamis Occidental
7. Calapan Port, Oriental Mindoro
8. Tacloban Port, Leyte

Control Ports

1. Borongan Port, Eastern Samar
2. Banago Port, Negros Occidental
3. Batangas Port, Batangas
4. Manguino-o Port, Samar
5. Maasin Port, Southern Leyte
6. Dangay-Roxas Port, Oriental Mindoro
7. NCR North Pier 2, Metro Manila
8. Lipata Port, Surigao City

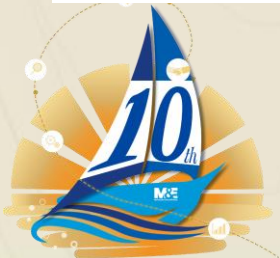
DIFFERENCE-IN-DIFFERENCES

$$y_{p,t} = \beta_0 + \beta_1(\text{year}_t) + \beta_2(\text{treatment}_{p,2021}) + \beta_3(\text{year}_t * \text{treatment}_{p,2021}) + \varepsilon$$



$$IMPACT = (T_{2022} - T_{2011}) - (C_{2022} - C_{2011})$$

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PRELIMINARY RESULTS



RESULTS

Table 1. Basic DID Model on the Impact of PTMRF on Service Efficiency Parameters

Outcome	Year (β_1)	Treatment (β_2)	DID estimator (β_3)	p-value	R-squared
Service Time (Domestic, hours)	-862.750*	-6,855,458.000**	3,389.934**	0.01911	0.011
Service Time (Foreign, hours)	-3.293	5,525,156.000***	-2,731.198***	< 2.2e-16***	0.330
Waiting Time (Domestic, hours)	175.26	85844.61	-42.96	0.4899	0.003
Waiting Time (Foreign, hours)	17.41	3,367,813.000***	-1,664.916***	< 2.2e-16***	0.183

*** Significant difference @ 1%, ** Significant difference @ 5%, Significant difference @ 10%



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KEY FINDINGS #1

What is the impact of PTMRF on port fees to port service efficiency?



The policy has a **significant impact** on the port service efficiency of **FOREIGN bound vessels** in terms of the following:

1.1 **Service time** in treated ports **decreased by 2,731.198 hrs/year (7.48 hrs/day)** with the treatment accounting for **33%** of this change.

1.2 **Waiting time** in treated ports **decreased by 1,664.916 hrs/year (4.56 hrs/day)** with the treatment accounting for **18.3%** of this change.

The policy has a **minimal impact** on the port service efficiency of **DOMESTIC bound vessels** in terms of the following:

1.3 **Service time** in treated ports **increased by 3,389.934 hrs/year (+9.29 hrs/day)** with the treatment accounting for **1.1%** of this change.

1.4 **Waiting time** in treated ports **decreased by 42.96 hrs/year (0.12 hrs/day)** with the treatment accounting for **0.3%** of this change.

Service time – also called Berthing time, is the number of hours a vessel spent from the time of completing the berthing process to the time of completion of the un-berthing process on final departure.

Waiting time – The number of hours spent by a vessel from the time of first reporting at the port to the time of completion of the berthing process before working.

RESULTS

Table 2. Basic DID Model on the Impact of PTMRF on Service Demand Parameters

Outcome	Year (β_1)	Treatment (β_2)	DID estimator (β_3)	p-value	R-squared
Total Cargo Throughput (TCT) Domestic-Inbound	-3,399.785	-40,261,688.000*	19,958.370*	0.1323	0.006
TCT Domestic-Outbound	-6,439.140***	17,402,774.000	-8,603.928***	0.001078	0.018
TCT Foreign - Import	3,381.427	1,737,482,523.000**	-858,937.000***	< 2.2e-16	0.306
TCT Foreign - Export	-28.338	682,089,083.000***	-337,290.000***	< 2.2e-16	0.361
Total Disembarking Passengers	-13,422.150***	-56,987,295.000**	28,169.570**	9.509e-05	0.026
Total Embarking Passengers	-11,313.390***	-50,377,343.000*	24,896.090*	0.0001807	0.024

*** Significant difference @ 1%, ** Significant difference @ 5%, Significant difference @ 10%



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KEY FINDINGS #2

What is the impact of PTMRF on consignees and shippers' demand for port services?



The policy has a **significant impact** on the demand for **FOREIGN shipping and/or consignment** in terms of the following:

- 1.1 **Total Cargo Throughput (TCT) on Imports** in treated ports **decreased by 858,937 Metric Tons (MT)/year** with the treatment accounting for **30.6%** of this change.
- 1.2 **TCT on Exports** in treated ports **decreased by 337,290 MT/year** with the treatment accounting for **36.1%** of this change.

The policy has an **insignificant impact** on the demand for **DOMESTIC shipping and/or consignment** in terms of the following:

- 1.3 **Inbound TCT** in treated ports **increased by 19,958.37 MT/year** with the treatment accounting for **0.6%** of this change.
- 1.4 **Outbound TCT** in treated ports **decreased by 8,603.928 MT/year** with the treatment accounting for **1.8%** of this change.



KEY FINDINGS #3

What is the impact of PTMRF on consignees and shippers' demand for port services?



The policy has an **insignificant impact** on the port service demand in terms of the following:

- 2.1 **Total Disembarking Passengers** in the treated ports **increased by 28,169.570 pax/year** with the treatment attributed for **2.6%** of this change.
- 2.2 **Total Embarking Passengers** in the treated ports **increased by 24,896.090 pax/year** with the treatment attributed for **2.4 %** of this change.





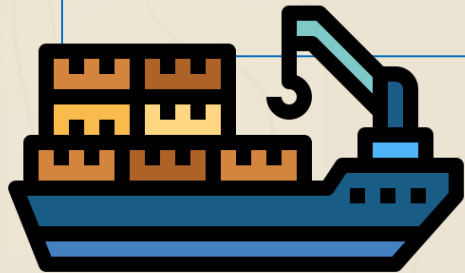
WAYS FORWARD



Ways Forward



1. The study team shall coordinate with and consult the PPA Head Office to discuss the results of the study and how to address the issues and concerns; and
2. Test the outcome indicators with additional confounding variables to validate the accuracy of the results.





THANK YOU!

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