Study on Timeline for Export and Import of Containers at Jawaharlal Nehru Port Trust, Chennai Port Trust and APSEZ Mundra

APRIL 2018

Highlights of the April Report

- The port dwell time for import was highest at Mundra in the month of April i.e., 99:08 hours.
- The port dwell time for exports at JNP and Mundra decreased in April, from (80:20 to 74:07) hours and (112:27 to 106:58) hours respectively.
- Share of DPD containers increased at Chennai from (17% to 19%) and decreased from (35% to 34%) at JNP
- Share of DPE containers remained same in the month of April in case JNP and Mundra i.e., (57% and 73%) respectively.
- Import Custom release time was lowest at ICD TKD in the month April – 21:30 hours, and highest at JNP - 34:59 hours.
- CFS Dwell time for import at Mundra decreased from (109:11 to 98:50 hours) in April. At JNP CFS dwell time increased from (109:12 to 111:21 hours).
- CFS Dwell time for export at Mundra decreased from (232:49 to 219:06) in April.
- ICD TKD dwell time for import and export increased in April, from (116:18 to 119:55) and (82:22 to 90:50) respectively.
- Rake handling time was highest at Chennai in the month of April -10:38 hours and lowest in case of JNP - 5:28 hours
- Chennai recorded the highest rake turnaround time of 23:39 hours which was almost 3 hours more than last month figures. At the JNP, the turnaround time for the rake decreased from 13:00 hours in March to 11:59 hours in April.
- JNP-TKD rail transit time for import decreased in the month of April from (63:13 to 60:57), however the transit time increased in case of export from (65:16 to 69:42)

Contents

1. Introduction

India's rank in World Bank's Report, Doing Business 2018: Reforming to Create Jobs, has moved up to 100 as compared to 130 in the previous year. This massive jump in the ranking – highest ever recorded – is the result of reforms undertaken in the last four years in nearly thirty seven area covered under the indicators of starting a business, dealing with construction permits, getting credit, protecting minority investors, paying taxes, enforcing contracts and resolving insolvency. India has also been categorized among the top 10 improvers of 2018.

Table 1: India's Ease of Doing Business Ranking

Parameter/Year	2015	2016	2017	2018
Overall ranking	134	131	130	100
Trading Across Borders	126	144	143	146

One of the most crucial indicators for business is 'Trading Across Borders' (TAB) wherein the time and cost required to release the cargo from the customs port in Delhi and Mumbai is captured through a questionnaire which relies on the perception of the traders and trading agents. Here, India's position has slipped by 3 places, currently at 146 out of 190 economies.

The World Bank's Doing Business 2018 estimates for the TAB through Mumbai and Delhi have been given in Table 2 and 3 respectively.

Table 2: World Bank's Estimate of Trading Across Borders through Mumbai

Parameter	Time to Export (Hours)		Time to Import (Hours)	
Year	Documentary Compliance	Border Compliance	Documentary Compliance	Border Compliance
2016	61	88	67	311
2017	58	85	65	307
2018	58	85	65	267

Source: www.doingbusiness.org

1.1. Context of the study

In 2016-17, a study was undertaken by Federation of Indian Export organisations (FIEO) and Bureau of Research on Industry and Economic Fundamentals (BRIEF), which was commissioned by NITI Aayog, for a comprehensive dwell time analysis of the various procedures and agencies involved in the supply chain for export and import through the JNP. It involved an assessment of the time taken at various intervention points - dissecting the dwell time of containers from/to Container Freight Stations (CFS), Inland Container Depot (ICD) as well as Direct Port Entry/Delivery – entailing transportation of containers and other operational aspects, the process of assessment, registration and examination, among others. As a result of this study, a number of initiatives were taken at JNP including, discontinuation of use of physical copies of certain documents at the terminal, mandatory issuance of e-delivery order by shipping lines, introduction of RFID, and initiation of e-sealing facility for self-sealed containers.

In continuation with the previous study, ***Logistics Division*** in the ***Ministry of Commerce*** has entrusted FIEO and BRIEF with the mandate of carrying out the timeline analysis of various processes for different agencies at the ports. The present study has also been extended to Mundra Port and Chennai Port, in addition to the JNP for the year 2018. This study will specifically identify dwell time at various agencies in the EXIM process at the three ports, covering all aspects of border compliance and documentary compliance. This will be done through calculation of the time taken for

import and export of Containers through JNP, Mundra and Chennai ports on a monthly basis along with the details of the time taken at every agency/place involved in the process.

This report also acts as a benchmarking tool for the targets for 2018-19 – for export and import – setting benchmarks for different agencies such as railways, customs, ports, and the partner government agencies. Apart from the dwell time analysis, the report also delves upon the qualitative aspects of activities in the EXIM process to provide a comprehensive picture of the operations impacting the ease of doing business in India.

1.2. Purpose and Objectives

MONTHLY REPORTS

a. To track supply chain of import/ export at JNP, Mundra and Chennai ports through identification of all the procedures, agencies and stakeholders

    - ✓ Inclusive of all formats of port entry and delivery such as Direct Port Delivery, Direct Port Entry, CFS facilitated, Factory stuffed and ICD facilitated through rail, etc.

b. To provide a comparison of processes adopted at the selected ports for EXIM trade.
c. To calculate the time taken for import and export of Containers through JNP, Mundra and Chennai ports on a monthly basis along with the details of the time taken at every agency/place involved in the process.
d. To specifically identify dwell time at various agencies in the EXIM process at the three ports. These would include, but not be restricted to, the following:

    Border Compliance

    - ✓ Customs Clearance and Inspections: Time taken by the Customs for export and import clearances at select ports based on actual data as well as perception.
    - ✓ Port Handling: Time taken by Terminal, select CFS's and select ICD's for export and import.
    - ✓ Allied Agencies: Time taken by agencies such as FSSAI, PQ, etc during the course of import and export including chemical and Pharma sector.
    - ✓ No. of shipments physically inspected i.e. evaluating RMS clearances based on data as well as perception.

1.3. Stakeholders

I. **Port/Terminal:** A port is the point of entry of goods and travellers into the country. It provides facilities for berthing of vessels and loading/unloading of cargo. A terminal is a part of the port, comprising of berth(s) which form a part of the terminal. It may be cargo-specific or designed to handle all types of cargo.

II. **Customs**: It is the official department of the government with the authority to check goods and travellers. In international trade, the customs collect duty on imported goods as levied by the government, and provide clearance on both export and import goods.

III. **Container Freight Station (CFS) and Inland Container Depot (ICD)**: A Container Freight Station is an extension of the port. It is the custodian of goods after they are evacuated from the terminal in case of import and before they are shifted to terminals in case of export. The process of customs clearance takes place inside the CFS. Inland Container Depots are

located in different inland points away from the sea ports, offering services such as handling, temporary storage and clearance of goods.

IV. **Partner Government Agency:** Partner Government Agencies (PGAs) are external agencies allied with the Central Board of Excise and Customs (CBEC) for providing clearance to sensitive goods such as food products, dyes, animal products, drugs etc. In congruence with the Budget, 2016-17, the CBEC initiated the Single Window Interface for Facilitating Trade (SWIFT) on 1st April 2016, as part of the 'Ease of Doing Business' initiative of the central government. The SWIFT – connected with CBEC's Electronic Data Interchange (EDI) gateway – is an electronic platform that enables the importer/exporter to file a single declaration entailing the nature of goods with the customs and the PGAs, in the form of an 'Integrated Declaration'; whereas for the PGAs, the system enables these agencies to upload the reports online. The PGAs which have been integrated with SWIFT include: Food Safety and Standards Authority of India (FSSAI), Plant Quarantine Information System (PQIS), Animal Quarantine and Certification Services (AQCS), Drug Controller (CDRUG), Wild Life Crime Control Bureau (WCCB) and the Textile Committee.

V. **Railways:** Railways is one of the various modes of transporting the consignment between port and the inland destinations.

1.4. Methodology

The report records the time associated with the import and export of containers through the JNP, Chennai, Mundra and ICD Tughlakabad ports. ***Recording of time starts when the container reaches the port till the time it is made available for the importer/CHA in case of imports, and from the time the custody of the container is handed over to ICD/CFS/port to the time the vessel sails off in case of exports.***

As a part of situational appraisal, **preliminary assessment** on parameters of border compliance, customs compliance and documentary compliance was done for all the three ports. **Business Process Analysis (BPA)** charts were developed for Import and Export – entailing the requisite documentation and processes undertaken – as a basis for time difference calculation between different steps, also taking cognisance of any peripheral activity being undertaken, which affects the dwell time. After the BPA charts were developed, **data was collected** from stakeholders such as ports (JNP, Chennai, Mundra and ICD TKD), customs, CFS operators (CFSAI and NACFS), rake operators (CONCOR) ad partner government agencies (FSSAI, PQIS, AQCS, CDSCO, etc.). The data was collected and assembled on the basis of predetermined formats, following which, the process of **data analysis** was conducted, involving cleaning and analysis of the collected data through requisite tools. The analytical process involved stakeholder-wise calculation of dwell time and subsequently, consolidation of the same in the process chain of EXIM trade. Monthly reports are prepared post analysis of data for each month, starting January 2018. The reports summarised average timelines for analysed processes, custodians and finally, the export and import value chains as a whole.

The datasets used in the report were collected from the aforementioned stakeholders in the form of system generated date and time stamps recorded against each activity, as generated/collated by the stakeholder. From each stakeholder's datasets, dwell time was calculated on the basis of custodianship i.e. the time for which a container remained in its custody before being made available for the trader/importer/agent for delivery. For certain stakeholders, the processes are linear and therefore

the time analysis was done on the basis of duration between subsequent activities. For example, in case of terminals, import dwell time was calculated as the duration between container discharge and container out time and for export, the same was calculated as the duration between container in time and container loading time. On the other hand, in case of stakeholders such as customs, where the processes are not linear, dwell time was calculated as the summation of durations for which containers were held by the customs.

The data analysed in the report was recorded against container numbers and collated on a monthly basis. Therefore, dwell time of each stakeholder is calculated, every month, as the average of container-wise time taken from the first activity till the time the consignment was made available to the trader/importer/agent for delivery under each custodian. For instance, the import dwell time of containers at a terminal was calculated as the average time taken from container discharge to container out time. However, for the calculation of dwell time for port, which includes four terminals, weighted average of all the terminals was used.

Broadly, the following parameters have been considered during analysis and report preparation:

a. The report provides the time analysis of import and export of containers through the JNP, Chennai, Mundra and ICD TKD ports.

b. The import and export dwell time has been calculated on the basis of movement of containers, irrespective of size and commodity contained.

c. Out of the total number of containers imported and exported at a port, the sample taken considers the containers under the import and export categories only and not containers meant for transhipment. Further, only Full Container Load (FCL) containers have been considered for this study and not empties.

d. The representation of time in the tables, figures and charts used in this report has been done in the hour format i.e. *[h]:mm:ss*.

e. The total time taken by each custodian has been calculated as the time taken from the arrival of the containers under its custodianship to the release of the time when it was made available to the trader for the delivery, and not as a summation of time taken for individual processes, even if they are linear in nature (except for customs). The reason for the same is that the sample size of each process under an agency differs, and therefore aggregating the time taken for individual processes to arrive at the overall dwell time becomes infeasible.

f. While calculating the dwell time for containers, it was observed that some containers had significantly high dwell time. Since we take the average of the time taken to complete any activity in the complete process, these outliers tend to make the average skewed. In order to overcome this challenge, the calculated durations between any two activities, which were above 30 days (~720 hours), were not included in the calculation of dwell time. This has been done in order to overcome the effect of outliers (consignment that has been dwelling with a particular custodian for some reasons not related to day-to-day trade, such as unclaimed cargo, legal issues, etc.). However, the study also evaluates the percentage of

such outliers. For any data set to be analysed, the percentage of outliers has to be less than 4 per cent.

For maximising accuracy, the following measures have been taken during analysis of data from various stakeholders, which have been summarised as follows:

Port

- Only FCL containers have been taken for dwell time analysis. Empties have not been included in the analysis.
- For imports, only containers with vessel berthing time stamps in the same month as the month under analysis have been taken. For example, while analysing port data for January, only containers corresponding to vessel berthing in the month of January have been taken.
- For exports, only containers with in time in the same month as the month under analysis have been taken. For example, while analysing port data for January, only containers with in time in the month of January have been taken.

ICD Tughlakabad

- Based on the recording done in the datasets received, the segregation of containers for each month has been done by filtering the containers from the date of dispatch and departure in a particular month for export and import containers respectively. For instance, all export containers dispatched and import containers that departed from ICD Tughlakabad in the month of January 2018 have been analysed for the month of January. These container may or may not have arrival date and time in the same month i.e. January.
- Any inconsistent outliers in the datasets have not been considered for calculation.

Customs

- The monthly datasets were segregated on the basis of Out of Charge (OOC) date in case of imports and Let Export Order (LEO) date in case of exports. For instance, for the import dataset of January 2018, all the entries wherein the date of issuance of OOC is from 01-01-2018 to 31-01-2018 have been considered. Similarly, the dataset analysed for exports have all the entries for which the LEO issuance date is between 01-01-2018 and 31-01-2018.

CFS

- The monthly datasets were segregated on the basis of CFS gate out date in case of both imports and exports. For instance, the import and export datasets of January 2018 have all the entries wherein the CFS gate out date is from 01-01-2018 to 31-01-2018.

Rake Handling

- The monthly data has been segregated on the basis of the arrival date. All the entries having the arrival date in the month of January 2018 are used for analysis for the month of January

PGAs

- The monthly data has been segregated on the basis of the Application date. All the entries having the application date in the month of January 2018 have been analysed and presented in the report for the month of January.

1.5. Limitations of the Study

Despite having collected all data directly from the concerned stakeholders, there were certain un-avoidable complications that affected the precision of the average time calculated. These include:

a. *Transit time calculation between port and CFS:* Due to unavailability of the relevant timestamps with all the CFS, the average transit time for Import and export was calculated on the basis of data provided by few CFS.

b. *Missing entries in datasets:* Many entries in the datasets analysed were missing or not recorded by the agencies. Missing or wrong entries for any process under any custodian have been removed, and the 'n' (number of entries) value has been adjusted accordingly.

c. *Incomplete entries:* In many datasets, only the dates were provided for certain processes. Absence of time stamps made these entries redundant, as the time difference between two activities taking place on the same date came out to be zero. For instance, let's assume an activity A took place on 01-01-2017 at 9:00 am and a subsequent activity B took place on the same date at 8:00 pm. The duration between these two activities is 11 hours, but in case of absence of time stamps, the duration comes out to be zero, which adversely affects the average. Further, in case of the dates being different, the time difference can potentially display a skew of up to 24 hours vis-à-vis the original difference, which again posed a limitation to the analysis.

d. *Gaps in Shipping Line Delivery Order data:* Data for shipping line delivery orders (SLDO) was provided by the CFS'. However, not all CFS' could provide the said information.

e. *Missing time stamps in OOC entries:* The Out of Charge (OOC) entries in the CFS datasets did not have time stamps. As such, time difference between seal cutting (which has both date and time) and OOC taking place on the same day came out to be negative. For instance, for a seal cutting entry of 01-03-2017 at 13:56:45 and a corresponding OOC entry of 01-03-2017 only, the time taken from seal cutting to OOC would be negative.

f. *Data errors:* For some agencies, data errors were recorded. For instance, in certain entries, the gate out time recorded preceded gate in time. Further, duplication of entries was observed in the some datasets. Such entries have been removed during calculation.

g. *Calculation of DPD and DPE containers*: Calculations for both DPD and DPE categories have been done using the datasets provided by the terminals. The monthly datasets received from NSICT and NSIGT were segregated – as per mode of transport – into

rail and road categories only. The containers with 'rail' as mode had to be taken as ICD and those with 'truck' as mode had to be taken as DPE (even though the category contains both CFS and factory stuffed containers). Further, in case of GTICT, the segregation – under group type – includes three categories: 'CFS', 'Factory stuffed/ICD by road' and 'ICD by rail', taken for analysis as containers originated from CFS, DPE containers and containers originated from ICD respectively. Therefore, here, ICD containers coming by road get included in DPE. In case of DPD, many containers, post clearance at the terminal, are moved to the designated CFS' for warehousing, after a time period of 48 hours as stipulated by the customs. Their destination is recorded as 'CFS' instead of 'DPD' in the datasets provided by NSICT and NSIGT. Therefore, the actual share of DPD containers are higher as compared to the analysed figures represented in this report.

h. *Unavailability of electronic data for PGAs*: During our field visits and our interactions with various stakeholders including PGA representatives, it was observed that the data (timestamps) for various activities related to clearance by PGAS are not maintained electronically by all the PGAs. The port offices of various PGAs maintain these entries manually and not all activities are recorded. Further, the entries recorded by the PGAs only contain date and no time for the commencement or completion of an activity leading to a statistical challenge where a difference of 24 hours becomes zero. In between submission of Bill of Entry and issuance of NOC by PGAs there are various activities that take place involving filing of application, scrutinising of documents, collection of samples, testing, report generation and issuance of NOC. In the absence of timestamps for all the relevant activities the clearance time for all PGAs could not be calculated.

Port Profiles

2. Port Profile

2.1. Jawaharlal Nehru Port

JNP located on the western coast is the biggest container port in the country. It handles about 56 percent of the container traffic in India through its four dedicated terminals, namely Jawaharlal Nehru Port Container Terminal (JNPCT), Gateway Terminals India Container Terminal (GTIPL), Nhava Sheva International Container Terminal (NSICT) and Nhava Sheva International Gateway Terminal (NSIGT). In addition, there is one liquid cargo berth and shallow water berth. Initially, the port was formed with the objective to reduce the traffic at Mumbai port but ever since its inception it has chronicled persistent increased performance and other achievements for India's foreign trade. The JNPT covers a land area of 2,987 hectares and has connectivity to hinterlands and the major business centres of the country through rail, road, etc.

Year-on-year Traffic:

Table 1: Container Traffic Handled at JNPT

2015-16	2016-17
4.49 million TEUs	4.50 million TEUs

Infrastructure:

Table 2: JNPT Port Infrastructure

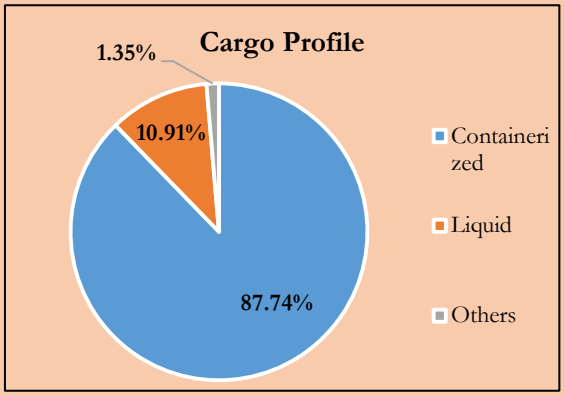
Berth	Draft (m)
12	14

Table 3: Container Capacity and Throughput at JNPT Terminals

Terminal	Capacity (TEU)	Throughput (TEU) (2016-17)
JNPCT	1,500,000	1,533,975
NSICT	800,000	445,111
NSIGT	800,000	445,111
GTICT	1,800,000	1,792,503
Total	**49,00,000**	**42,16,700**

Cargo Profile:

In the financial year 2016-17, JNPT handled a total of 62.15 MT cargoes. The break-up of these cargoes are as under:



Cargo Handling Equipment:

Table 4: Details of Cargo Handling Equipment's

Equipment	Number
RMQCs	34
RTGCs	99
RMGCs	11

Connectivity:

Table 6: JNPT Connectivity

CFS	Rail connected ICD
34 Active Container Freight Stations	9 siding tracks for 12 ICD

Storage:

Table 5: Storage Capacity at the Port

Particulars	Storage Capacity
Liquid Tank	750000 MT
Warehouse Area	1197260 TEU
Open Area Storage	875000 TEU

2.2. Chennai Port: Profile

Port of Chennai located on the eastern coast is among the oldest and major ports in India. Despite being the oldest port, it adopted continuous modernization and provided efficient and convenient services to withstand the competition from the existing and emerging ports. It is the first Indian port to establish the marine pollution management to ensure protection for marine life. The port covers a land area of 237.54 ha and has its own shunting yard and railway operations within the harbour. The connectivity of the port through rail, road and its container market makes it the most preferred choice in the southern region of the country.

Year-on-year Traffic:

Table 1: Container Traffic Handled at Port of Chennai

2015-16	2016-17
1.5 million TEUs	1.4 million TEUs

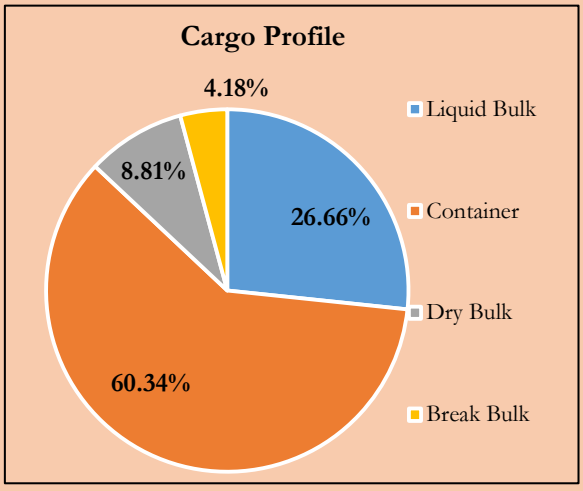
Infrastructure:

Table 2: Port Infrastructure

Berth	Draft (m)
12	14

Cargo Profile:

In the financial year 2015-16, Port of Chennai handled a total of 50.06 million tonnes of cargo:



Storage:

Table 5: Storage Capacity at the Port

Particulars	Storage Capacity
Container parking Yard	2,50,600 sq. mt
Warehouse Area	30,138 sq. mt
Open Space	3,84,611 sq. mt

Table 3: Container Capacity and Throughput at Port of Chennai

Terminal	Capacity TEU	Throughput TEU (2016-17)
Chennai Container Terminal	1,200,000	646,319
Chennai International Terminal	1,250,000	844,694
Total	**24,50,000**	**14,91,013**

Cargo Handling Equipment: (2015-16)

Table 4: Details of Cargo Handling Equipment's

Equipment	Number
Mobile Cranes	3
Diesel Fork Lift Truck	2
Wharf Electric Cranes	6
Diesel Electric Locomotive	10

Connectivity:

Table 6: Chennai Port Connectivity

CFS	Rail connected ICD
25 Active Container Freight Stations	2 siding tracks for 1 ICD

2.3. Mundra Port: Profile

Adani group's Mundra port is the largest commercial port in India, located on the north-western coast in the Gulf of Kutch. The strategically thought out location of the port and different transport facilities provides favourable connectivity to the northern hinterlands of the country.Mundra Port located in Gujarat and the flagship port of APSEZ, is already one of India's biggest port by volumes handled. It was the first Indian port to handle 100 million tonnes (mt) or more of cargo in a year, a feat it achieved in FY14. The port has facilities for handling, storage and evacuation of crude oil, containers, dry bulk, break bulk, automobiles and liquid cargo. The above-mentioned and mechanized facilities at the port make it a preferred port in the region.

Year-on-year Traffic:

Table 1: Container Traffic Handled at Mundra Port

2015-16	2016-17
3 Million TEUs	3.5 Million TEUs

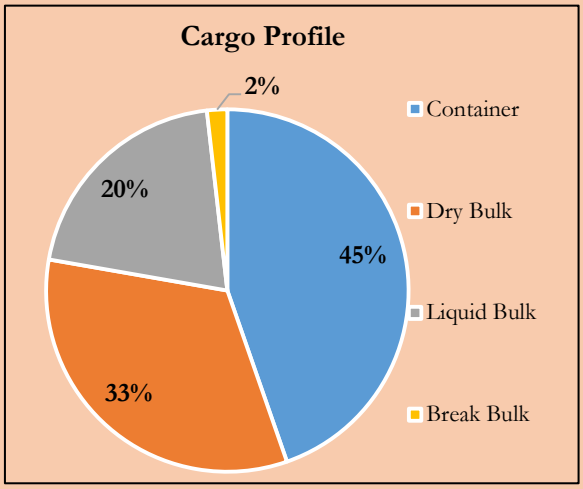
Infrastructure:

Table 2: Port Infrastructure

Berth	Draft (m)
24 berths	14 -18m

Cargo Profile:

In the financial year 2016-17, Mundra Port handled a total of 113.03 MMT of cargo



Storage:

Table 5: Storage Capacity at the Port

Particulars	Storage Capacity
Covered Area	2,03,687 sq. mt
Open yards	7,57,805sq. mt

Table 3: Container Capacity and Throughput at Mundra Port

Terminal	Capacity TEU	Throughput TEU (2016-17
AMCT	1,000,000	860,000
AICT	1,750,000	1,160,000
ACCMT	800,000	276,630
MICT	1,100,000	1,163,055
Total	**46,50,000**	**34,59,685**

Cargo Handling Equipment: (2015-16)

Table 4: Details of Cargo Handling Equipment

Equipment	Number
Mobile Harbor Cranes	16
Goliath cranes	8
Reach Stacker	1
Quay Cranes	16
Rubber Tyre Gantry Cranes	50

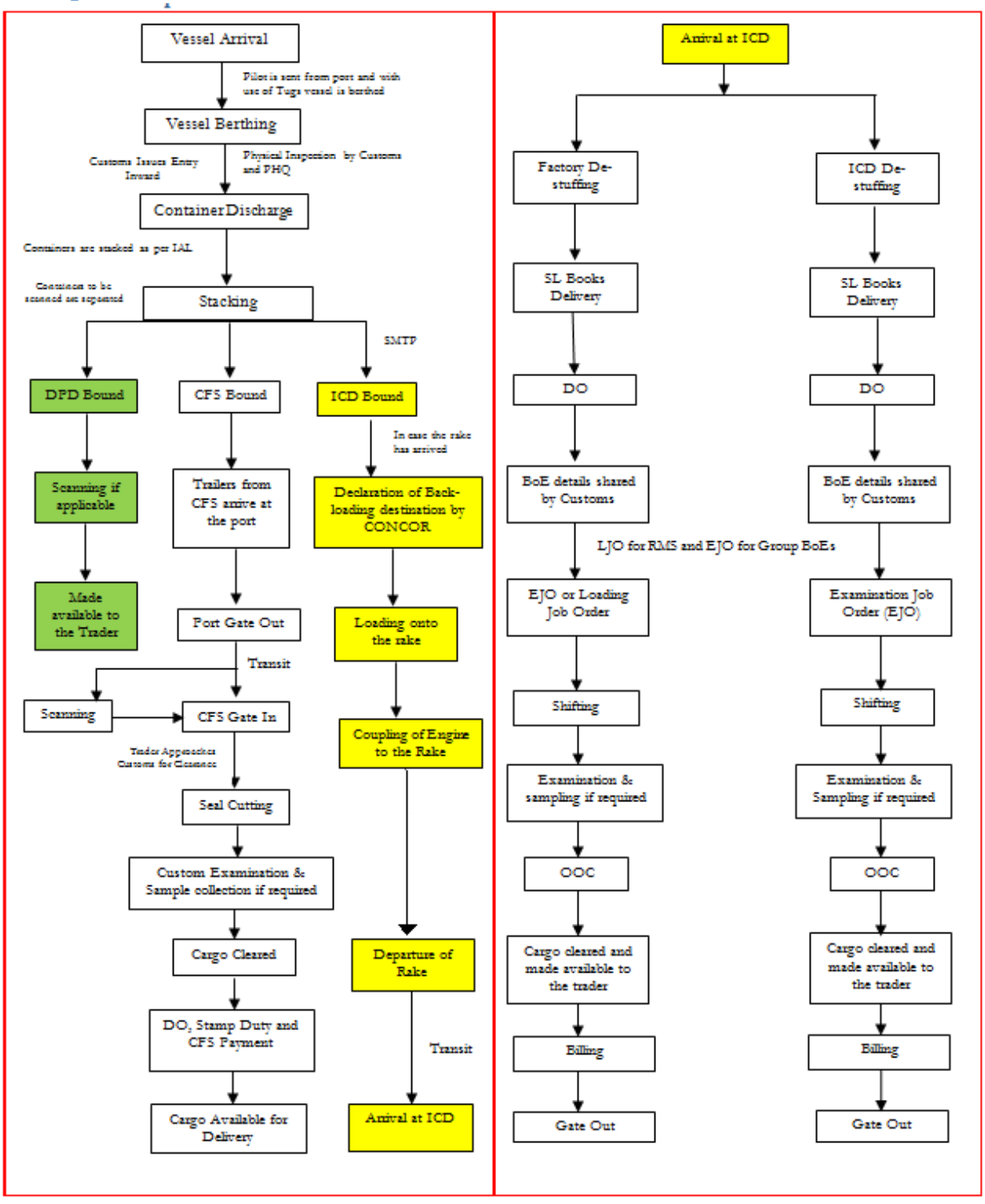
Connectivity:

Table 6: Mundra Port Connectivity

CFS	Rail connected ICD
13 Active Container Freight Stations	11 siding tracks for 30ICDs

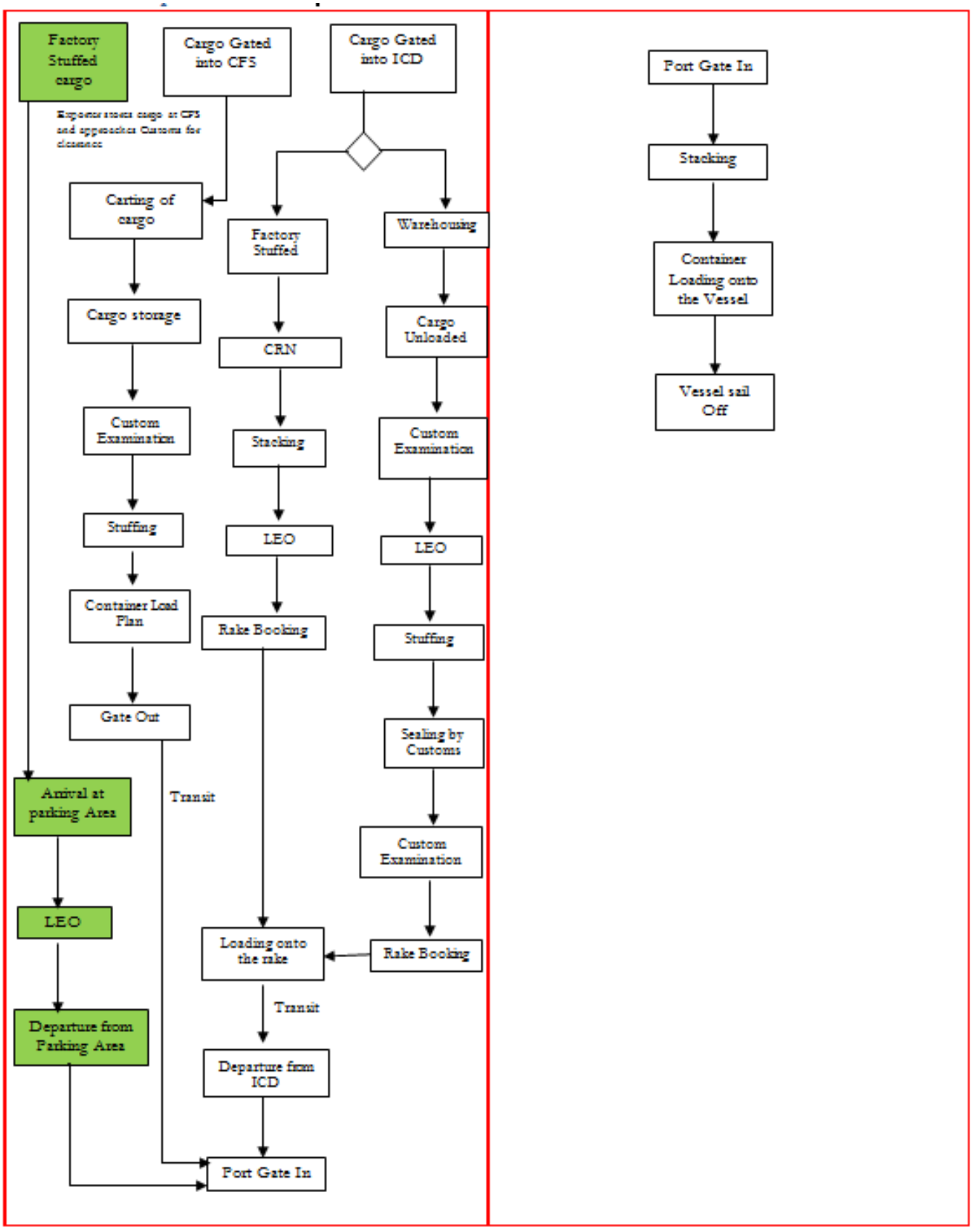
EXIM PROCESS

3. Import Process at Port, ICD and CFS



S.L – Shipping Line: **VOA**- Vessel operating Agent: **IGM**- Import General Manifest: **IAL**- Import Advance List: **SMTP**-Sub Manifest Transhipment Permit: **OOC**- Out of Charge: **NOC**-No Objection Certificate: **PGA**-Partner Government Agency

4. Export Process at Port, ICD and CFS



5. Comparison of Port Processes

Parameter	JNP	Chennai	Mundra
Different entry and exit points at Ports.	The terminal gate and port gate is the same in case of the JNP. During the dwell time calculation of the road bound cargo, time calculation starts from the entry or exit from these gates.	The terminal gate and port gate is not the same in case of Mundra and Chennai port. Terminal gates – usually container yard gates- are inside the port. The terminal records gate out or gate in when the container crosses the terminal gates.	
Presence of Customs personnel at the port gate.	There is no customs personnel stationed at the gates at the JNP. For exports, the customs personnel have been shifted to the holding/parking yard where customs procedures are carried out.	At Chennai and Mundra ports, Customs personnel have been stationed at the port gate. Further, at Chennai port the customs personnel checks all the documents at the port gate thereby leading to escalation of dwell time. The time taken at the port gate in case of Mundra and Chennai is not reflected in the port dwell time figures mentioned in this report owing to the reason mentioned above.	
Free days at the terminal for the road and rail bound EXIM containers.	The terminals at Chennai port and the JNP provides a free period of 72 hours (3 days) for Road bound containers and 168 hours (7 days) for rail bound containers.		At Mundra the terminals provide 3 calendar days (not 2 hours) free period for the road bound containers and 10 calendar days for rail bound. If a container is discharged at 01:00 hrs or 23:00 hrs on 01-01-2018, the free period will be till midnight 03-01-2018.
Different procedure for evacuation of rail bound containers from the port.	The railway lines are within the terminal area. The containers transported through rail are loaded and unloaded from the rake within the terminal. The departure of rake is considered as port out and arrival of rake as port in at the JNP.	In case of Chennai port, there is a separate railway yard outside the terminal gates, operated by CONCOR. The containers transported through rail leave the terminal gate to be shifted to the yard where they are loaded onto the rakes.	Same as the JNP
Entry of Export cargo into the port after customs clearance.	The export containers enter the JNP ad Chennai port only after they are cleared by customs.		At Mundra port the containers are allowed inside the terminal without custom clearance. Therefore, the time the containers spend at the terminals also includes the time for custom clearance, which may result in a higher dwell time for export containers for Mundra compared to the JNP and Chennai port.

TIMELINE ANALYSIS

SNAPSHOT

IMPORT TIMELINES

Stakeholder	Dwell Time	JNP	MUNDRA	CHENNAI	TKD
PORT	Port Dwell Time	44:52	99:08	55:38	119:55
	Port Dwell Time for CFS Bound Containers	32:21	45:30	50:19	--
	Port Dwell Time for ICD Bound Containers	84:51	145:07	50:36	--
	Port Dwell Time for DPD Containers	41:49	108:42	80:37	--
Customs	Customs Release Time	34:59	31:51	31:16	21:30
CFS	Dwell Time at CFS	111:21	98:50	79:02	--
Port, CONCOR & Railway	Rake Turnaround Time	11:59	13:03	23:39	--
	Rake Handling Time	5:28	9:20	10:38	--

EXPORT TIMELINES

Stakeholder	Dwell Time	JNP	MUNDRA	CHENNAI	TKD
PORT	Port Dwell Time	74:07	106:58	70:21	90:50
	Port Dwell Time Containers Originated from CFS	65:31	81:53	68:28	--
	Port Dwell Time Containers Originated from ICD	115:59	117:25	60:55	--
	Port Dwell Time for DPE Containers	66:49	111:38	56:18	--
Customs	Customs Release Time	4:15	6:33	4:21	11:41
CFS	Dwell Time at CFS	117:15	219:06	112:33	--

6. Timeline Analysis

6.1. FCL Volume Handled by the Ports

The EXIM volume of FCL containers handled at the select ports has been provided in the chart below. The stats given in the figure 1, should not be confused with the total number of containers handled at the ports, which would be a higher figure than the one mentioned in the graph. The total volume of containers handled at a port also include empties, transhipment containers and containers meant for SEZ around the port.

Figure 1: Number of Import FCL Containers Handled

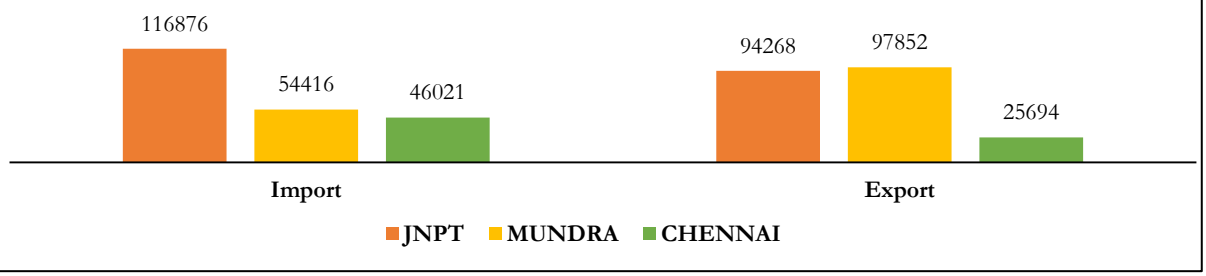
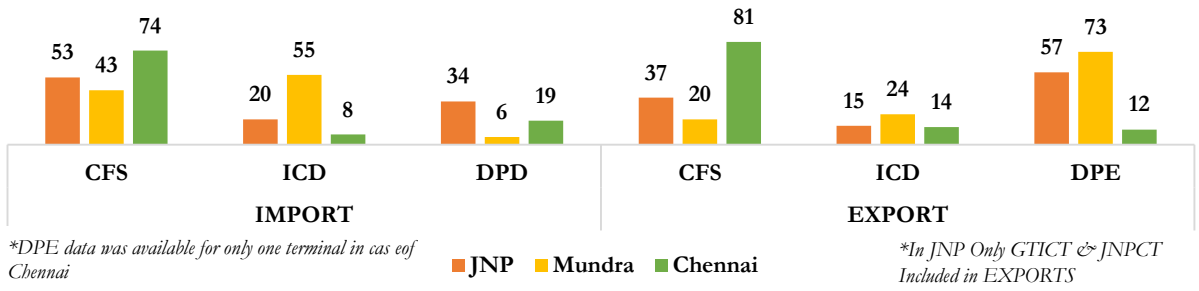


Figure 2:Share of FCL Containers (Percenatge)

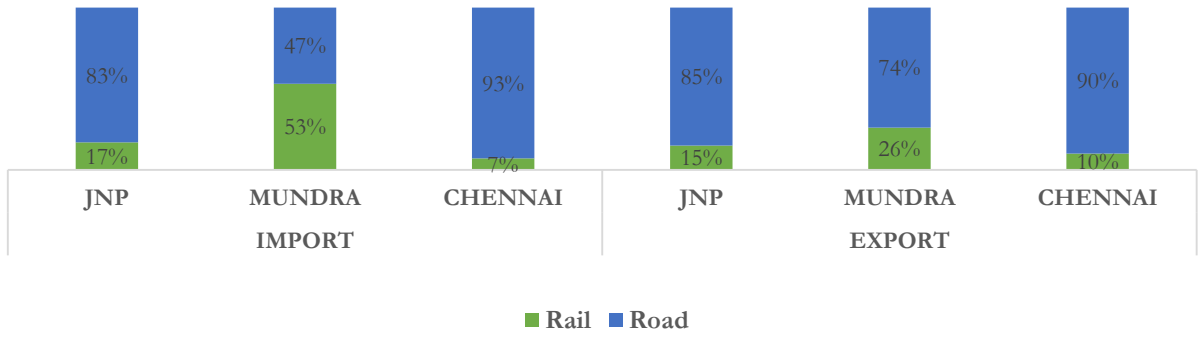


**DPE data was available for only one terminal in cas eof Chennai*

**In JNP Only GTICT & JNPCT Included in EXPORTS*

The DPD percentage has been calculated from the FCL containers excluding the ones going to ICDs. For example, if 100 containers are imported at a port out of which 20 containers are going to ICDs, the share of DPD would be calculated from the remaining 80 containers. This has been done considering the fact that the DPD facility is presently available only to the non-ICD bound containers.

Figure 3: Share of Road and Rail bound Containers



6.2. Port Dwell Time

Port or Terminal dwell time is the calculation of the time a container is at the terminal. It is calculated as the average time taken from container discharge from the vessel to the time of container evacuation from port gate for import and time from the entry of container into the port till it is loaded onto the vessel for export. In case of Mundra, for import, the out time has been taken as gate out from the container yard at the terminal. Terminal dwell time varies with respect to the destination or source of the container – Container Freight Station (CFS), Inland Container Depot (ICD) or Direct Delivery (DPD or DPE).

Figure 4: Average Port Dwell Time (Hours)

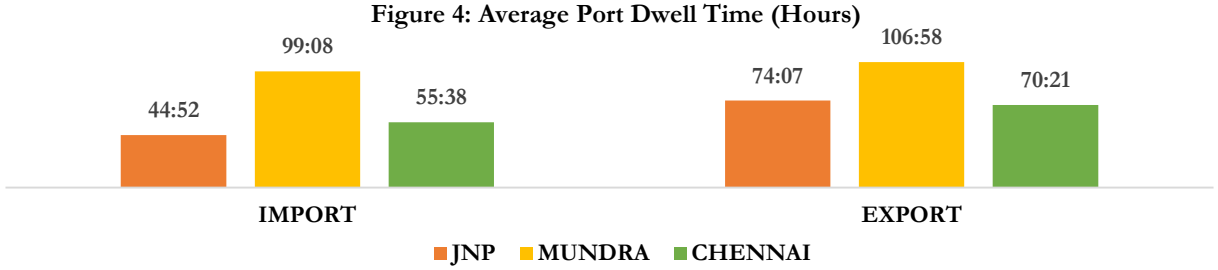
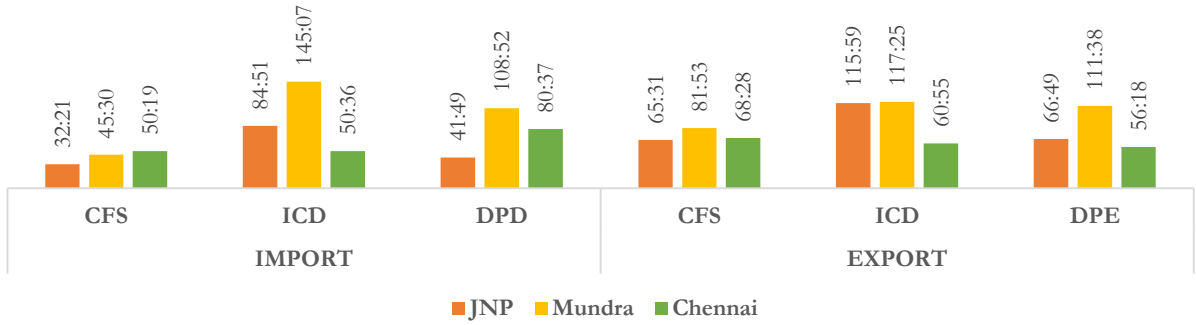
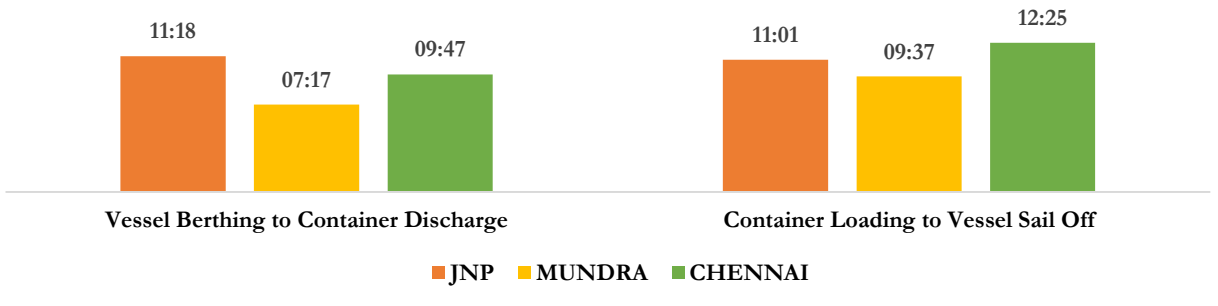


Figure 5: Average Port Dwell Time - Custodian-wise (Hours)



CFS operators have to obtain and submit hard copies of documents to take the delivery at Chennai port unlike the JNP and Mundra leading to a high dwell time. The port dwell time for ICD bound containers at Chennai port is considerably low compared to other two ports. One of the reasons for this metric is that the gate out for ICD bound containers at Chennai port is recorded when the containers move out of the terminal to be shifted to a separate Railway yard operated by CONCOR. The time spent at the railway yard till the departure of the rakes is not captured by terminals at the Chennai port.

Figure 6: Berth Efficiency (Hours)



Before the containers are discharged from the vessel, the customs, immigration and PHQ officials

inspect the ship. Operational factors such as the number of quay crane moves along with external factors such as the tide situation, vessel size, time taken for customs processes, etc. determine this metric. Similarly, post loading of containers during export process, the vessel has to be moved off the berth for sail off. This process is dependent on external factors such as favourable tide, etc. These two processes are representative of the berth efficiency at the select ports.

6.3. Transit Time - Import

Transit time is the time taken for the container to reach the custodian - which can either be a CFS or an ICD. The rail transit time for ICD has been calculated as the difference between the time of departure of rail from the source location to its arrival at the destination. The CFS transit time is taken from the time of exit of a container from port to its arrival (gate-in) at the CFS. The transit time through road for JNP, Chennai and Mundra has been calculated using data provided by 10, 2 and 1 CFSs respectively.

Table 3: Transit Time of Import Containers					
	JNP		Mundra		Chennai
	Road	Rail	Road	Rail	Road
Average time taken (hr)	6:53:22	60:57:21	0:28:48	78:50:56	1:54:32

6.4. Transit Time – Export

Transit time for CFS and ICD has been calculated as the time taken from departure of containers from ICD or CFS to their arrival at the port. The transit time through road for JNP has been calculated using data provided by 3 CFS.

Table 4: Transit Time of Export Containers				
	JNP		Mundra	Chennai
	Road	Rail	Rail	Road
Average time taken (hr)	13:19:34	69:42:25	97:26:05	NA

6.5. Customs Release Time

Customs release time is the time taken by the customs authorities, be it at the dock, at CFS or at ICD. In case of imports, the customs release time is calculated as the average time between submission of bill of entry to assessment and registration of goods to OOC [in case of RMS and Group B/E]; and registration of a container to assessment and duty payment to OOC [in case of Group (First Check) B/E]. It must be noted that the process of customs release is not linear; many agencies play a parallel role such as the PGAs, the importer/customs broker for duty payment, shipping line for delivery order and the CFS. In case of exports the release time is the duration between registration of goods and issuance of LEO.

Figure 7: Average Customs Release Time (Hours)

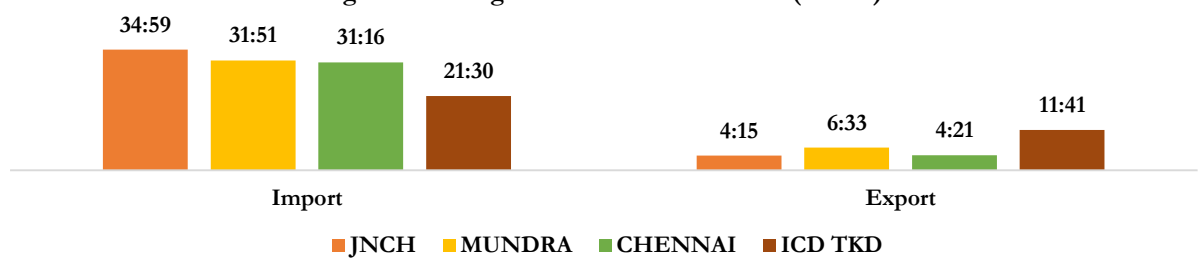


Figure 8: Share of RMS Facilitated Bills of Entry

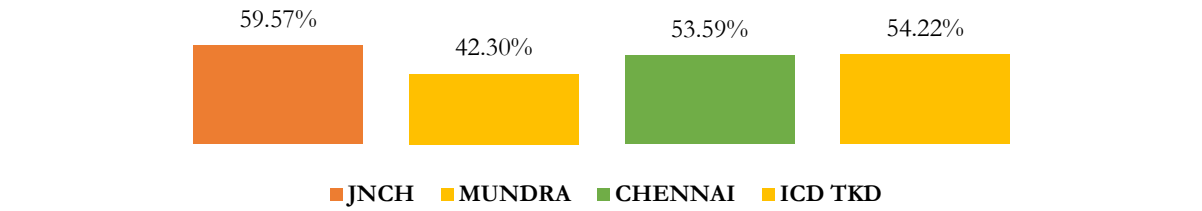


Figure 9: Share of Examined Bills of Entry and Containers

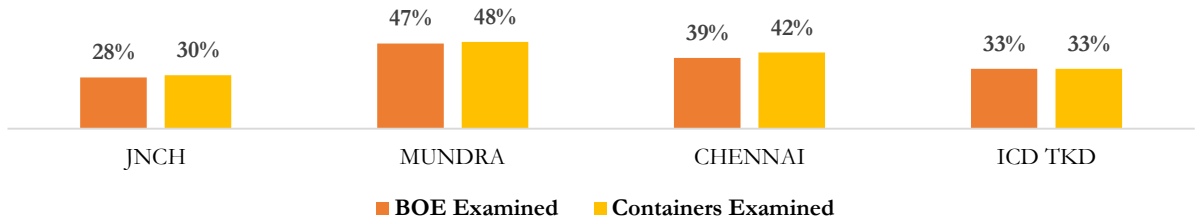


Figure 10: Status of BOE JNCH

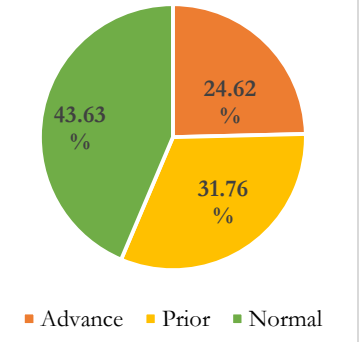


Figure 11: Status of BOE Mundra

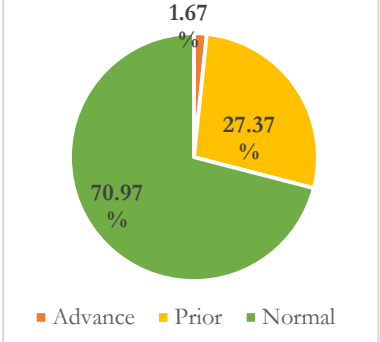
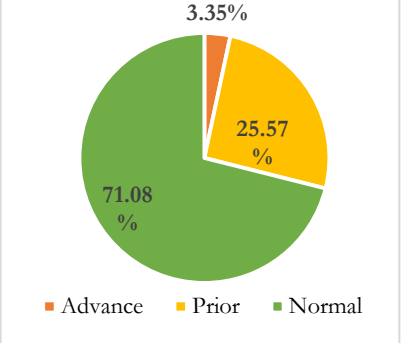


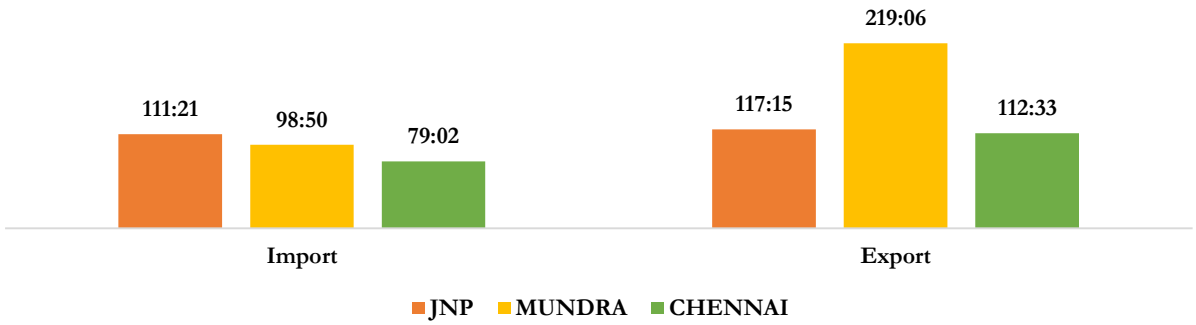
Figure 12: Status of BOE Chennai



6.6. Container Freight Station (CFS)

CFS import dwell time is calculated from the time of gate-in of a container at the CFS to its custom clearance which is issuance of Out of Charge (OOC) by customs in case of imports. For exports, dwell time is calculated from the issuance of export carting order to the gate-out of container from CFS. Please note that the total time taken by CFS is calculated in terms of gate-in to OOC (and not as a linear addition of time taken in the various processes) due to the sample size being different for each process and many parallel processes involving customs, customs brokers and shipping line taking place. The list of CFS along with their dwell time has been provided in the annexure.

Figure 13: Average CFS Dwell Time (Hours)



6.7. Inland Container Depot (ICD) Tughlakabad

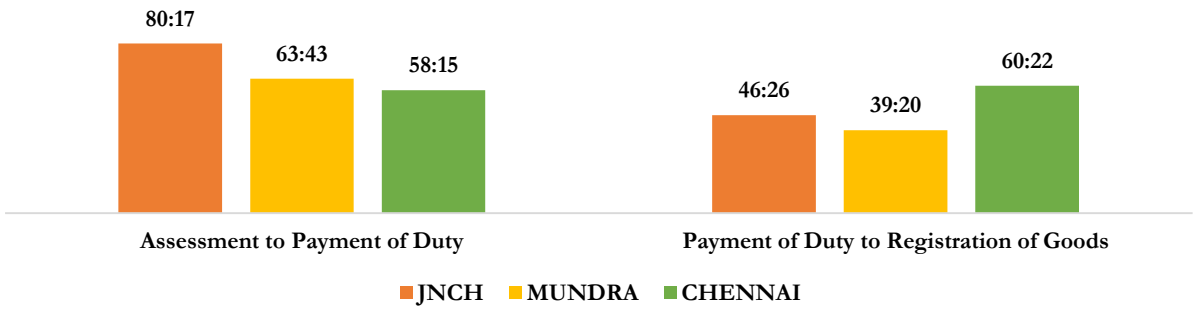
The overall dwell time of containers at ICD Tughlakabad has been computed as the weighted average of overall dwell time figures for all the different categories under analysis viz. green channel factory de-stuffed/stuffed containers, non-green channel factory de-stuffed/stuffed containers, warehouse bound containers and direct de-stuffing/stuffed containers.

Table 5: ICD Tughlakabad Dwell Time	
ICD Time Import (Arrival – OOC)	**119:55:36**
ICD Time Export (Arrival – Dispatch)	**90:50:26**

6.8. Time Taken by the Trade – Importers/Customs Brokers

It is imperative for time-to-release studies to take into account the time taken by the importers or their customs brokers for completing various procedures like payment of duty and registration of goods with the customs. These procedures substantially add to the custodian release time and the need for factoring in such parameters – to arrive at a clearer view of the role of and time taken by the custodians as well as the trade – is paramount. In a number of cases, delays in payment of duty by the importers or in the clearance process occur due to reasons such as: a) paucity of funds for clearances – as a result of which the cargo remains in the customs bonded area within the CFS/ICD and b) market evaluation by the traders before releasing goods from the custodian. For ease of doing business, it is important that the importer completes the necessary payments and formalities on time to ensure timely completion of rest of the procedures.

Figure 14: Average Time Taken by Trader/Agent (Hours)



6.9. Rake Handling

The turnaround time of rakes at the terminals is the time taken from arrival of rake to its departure from the terminal. The processes that take place during this period include discharge of export containers or empty containers, loading of import containers, submission of rake removal memo and coupling of engine. The time taken by the terminal to unload the export cargo and load the import cargo is called the Rake Handling Time. The turnaround time and the rake handling time at the JNP, Chennai and Mundra port is depicted in Figure 14.

Figure 14: Rake Handling Time (Hours)

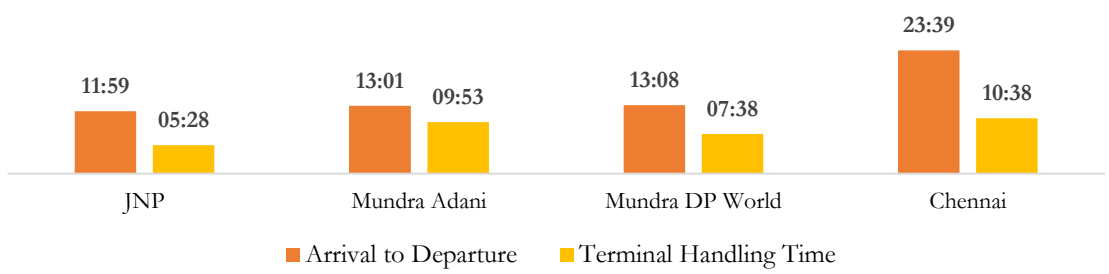
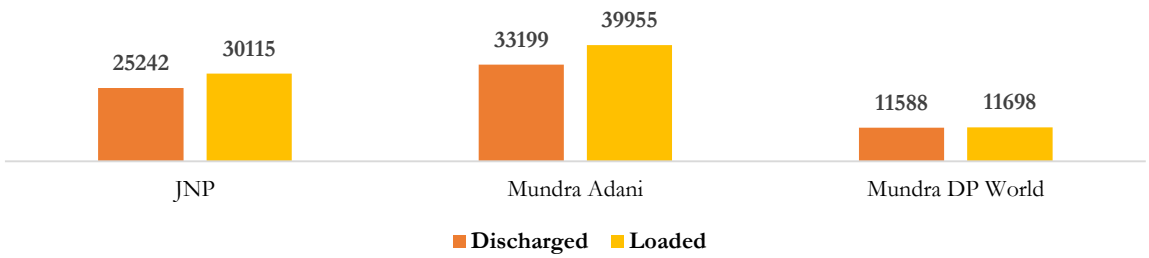


Figure 15: Number of Conatinaers Discharged and Loaded



6.10. Shipping Line Delivery order

The shipping line provides delivery order (DO) as a final confirmation for delivery of cargo to the customs broker. Any delay by the shipping line in providing delivery order gets added to the total time of the container at CFS/ICD. Some DOs are given after issue of OOC by customs, while others are generated at the same time or prior to OOC, Table 6.

Table 6: Average Time Taken for Generation of Delivery Orders by Shipping Lines			
	JNP	**Mundra**	**Chennai**
Total no. of DO	**18545**	**463**	**4214**
No. of DOs prior to OOC	9009	143	850
No. of DOs given post OOC	5072	192	2264
No. of DOs received on same day as OOC	4464	128	1100
Average time taken from CFS gate-in to receiving delivery order	**137:08:40**	**110:41:23**	**162:52:36**

6.11. Partner Government Agencies

Partner government agencies (PGAs) are the allied agencies that are required to examine and provide clearance to certain types/categories of cargo. They play a key role in the overall process of cargo clearance. In an earlier practise, the time required by these agencies was added in the customs release time, however, some cargo (particularly perishable) is now released before the arrival of report by PGAs on the basis of a bond guarantee. This report analyses the time taken from sample collection to publishing of report by 3 PGAs -Animal Quarantine (AQ) for Mundra and JNP region and Food Safety and Standards Authority of India (FSSAI) for JNP. Please note that the reports for some agencies like PQ and FSSAI may also be received after out-of-charge due to nature of the cargo.

Table 7: Average Time Taken by PGAs		
	AQCS (JNP)	AQCS (Mundra)
Total number of entries (n)	**504**	**211**
Average Time taken from Application to NOC for all BoEs (hr)	105:07:00	5:53:05(data available only for 4 entries)
Total number of BoEs	499	211
BOEs for which sample was collected	218	7
Average Time taken from Application to NOC for sample collected BoEs	286:55:23	244:48:00
BoEs for which provisional NOC was issued	216	6
BoEs for which Provisional NOC was issued on the day of application	205	6

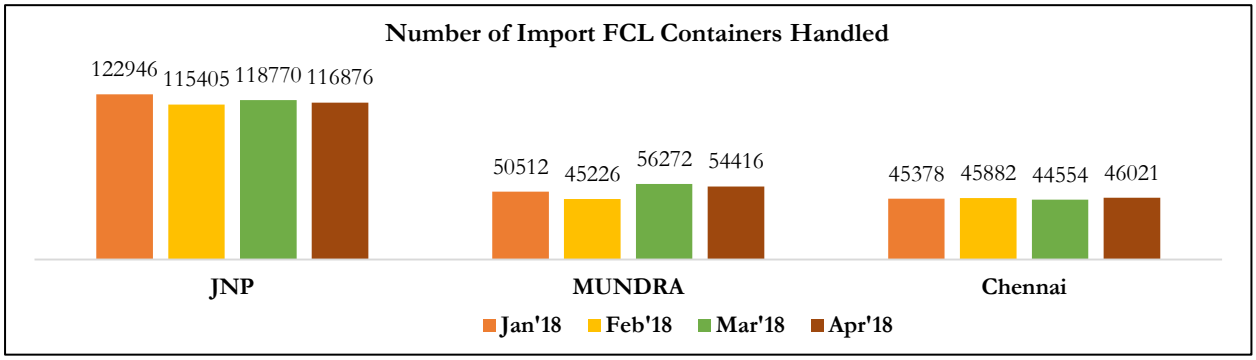
In case of FSSAI, the release time has been calculated as the summation of time taken by the FSSAI at various stages of the overall clearance process. The release in case of cargo where sample was collected is the time is a summation of the average time between filing of application by the trader to the time when the officer at the FSSAI scrutinises the documents, payment of dues to collection of sample, sample collection to the issuance of the NOC. In case of cargo where no sample has been drawn, the release time is the summation of the duration between filing of application and issuance of NOC.

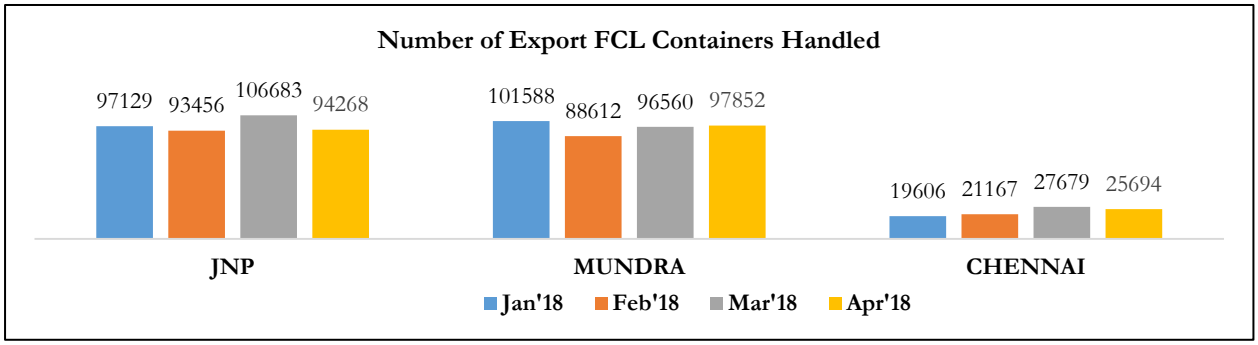
FSSAI Release Time (Chennai)			
	Sample	**Non- Sample**	**Not in Scope**
Total number of entries (n)	389	12	225
Total number of BoEs	297	11	60
Average FSSAI Release time (hr)	**156:22:43**	**33:30:31**	**45:11:56**

FSSAI Release Time (JNP)			
	Sample	**Non- Sample**	**Not in Scope**
Total number of entries (n)	1230	54	128
Total number of BoEs	834	40	103
Average FSSAI Release time (hr)	**194:14:48**	**48:35:46**	**89:00:36**

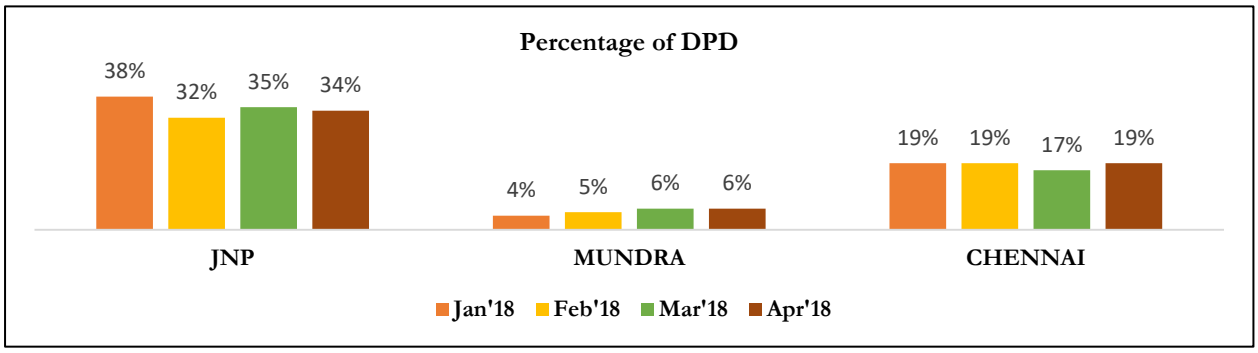
Trend Analysis

Volume of EXIM Cargo Handled

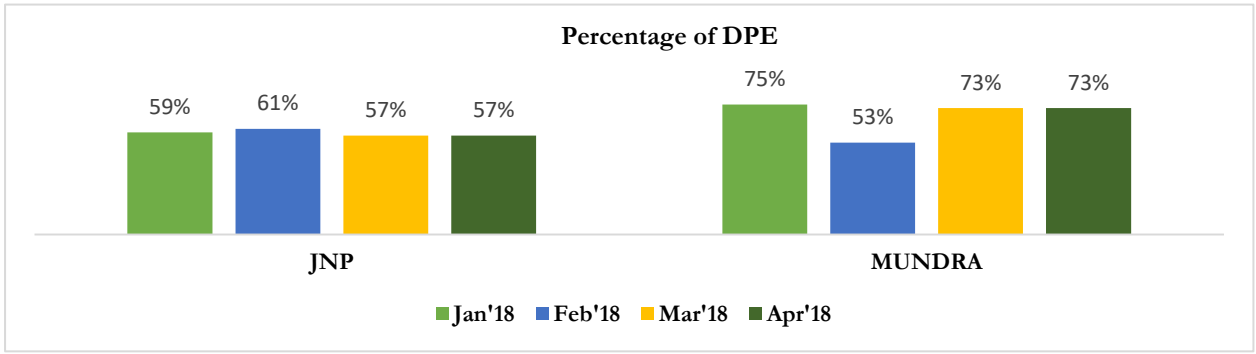




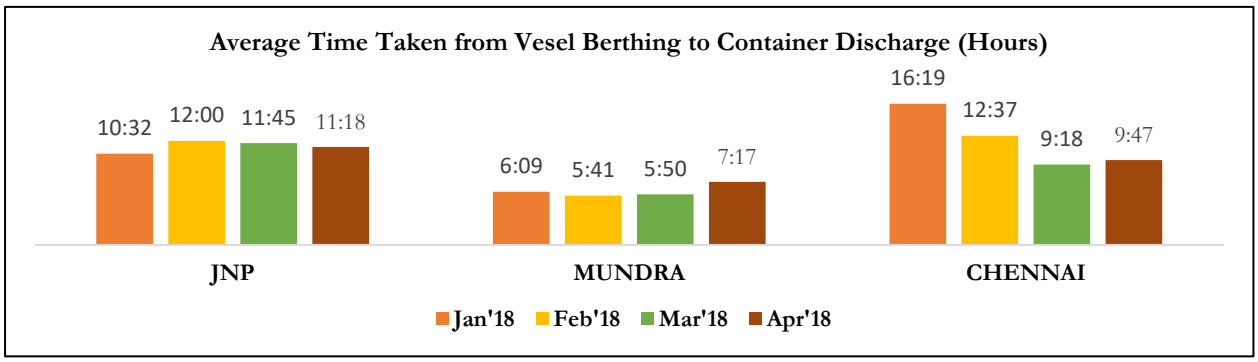
Share of DPD

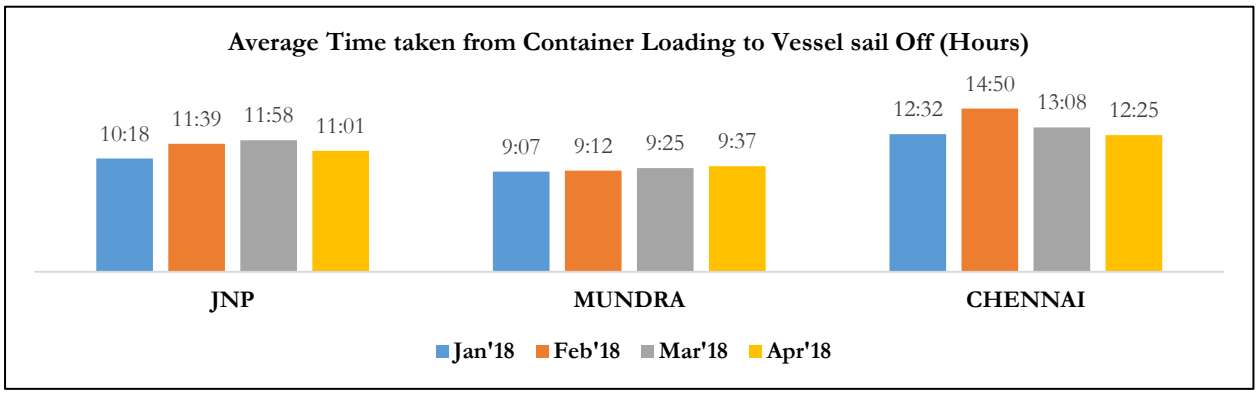


Share of DPE

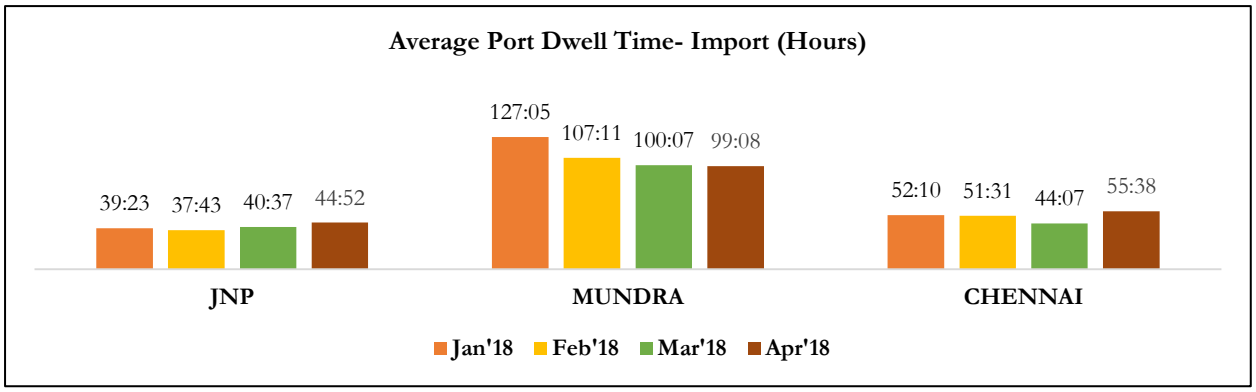


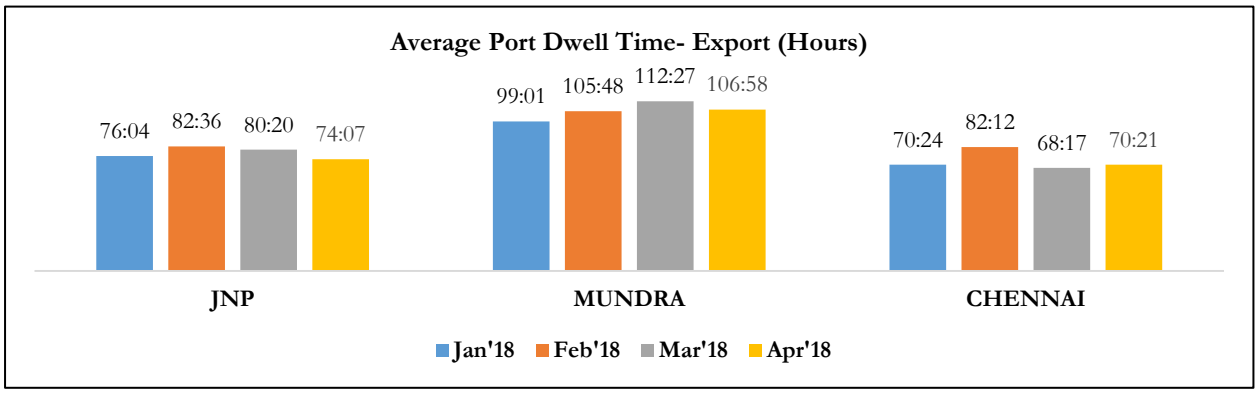
Berth Efficiency



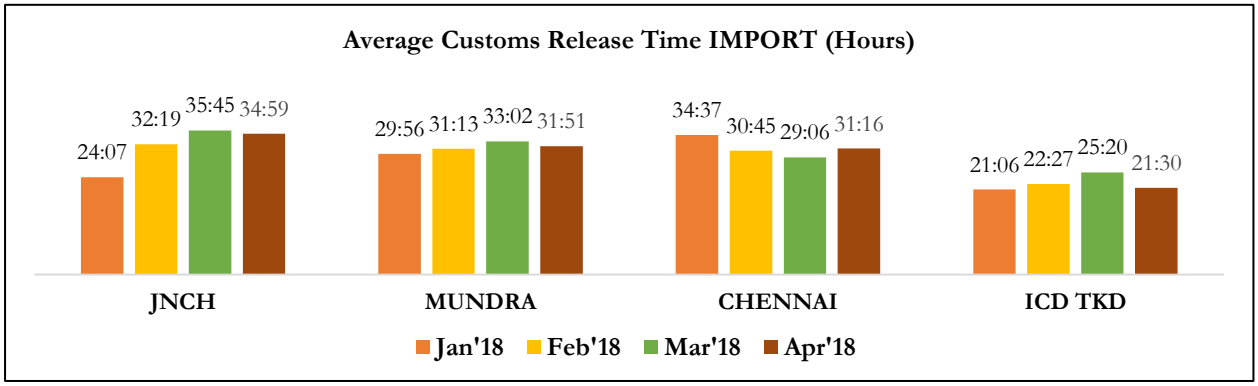


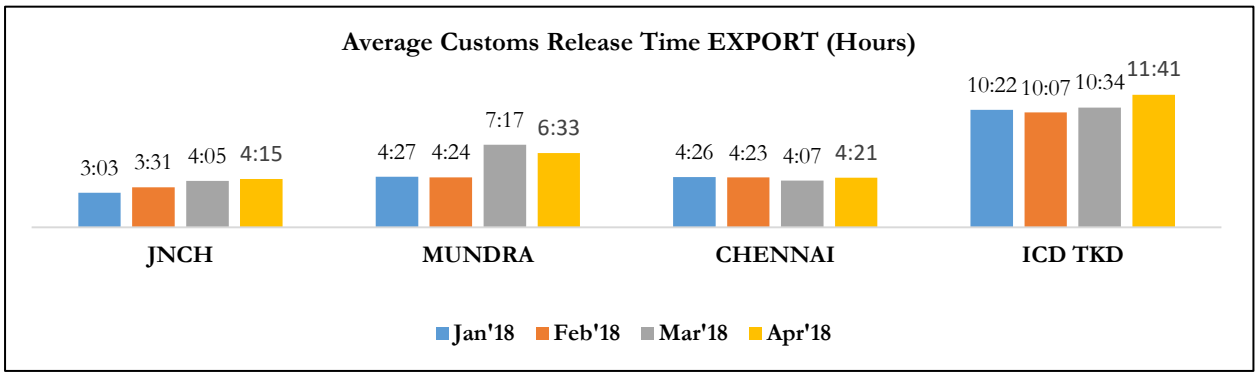
Port Dwell Time



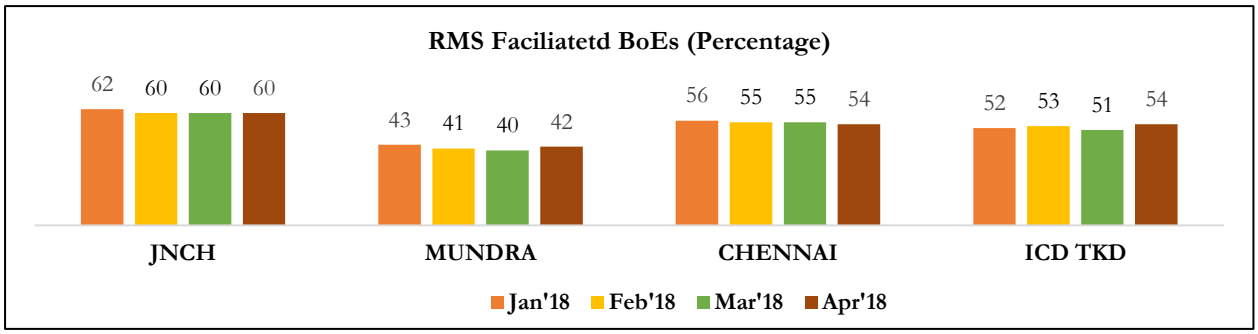


Customs Release Time

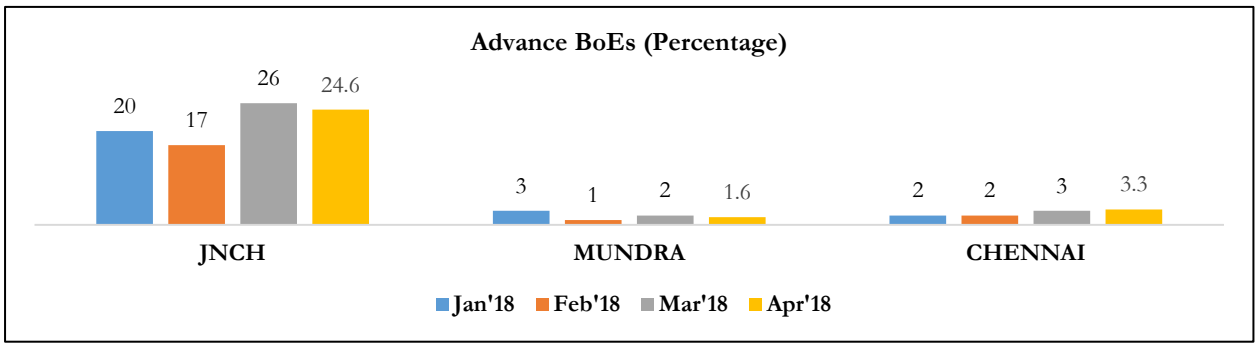




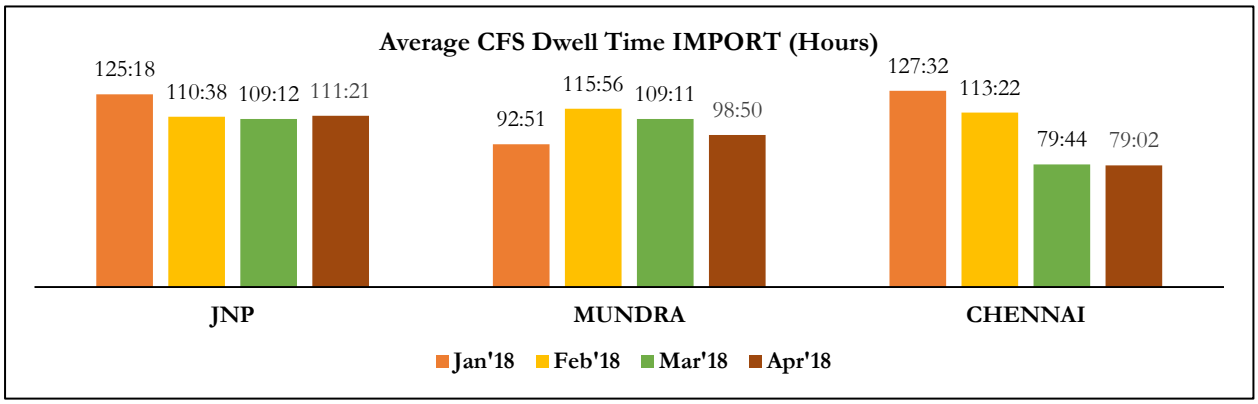
Share of RMS facilitated BoEs

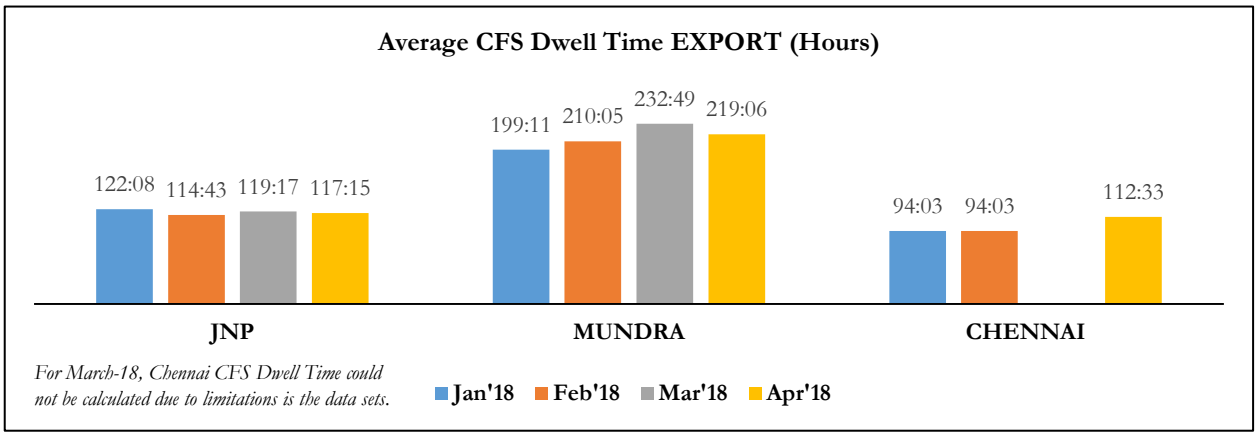


Share of Advance BoE



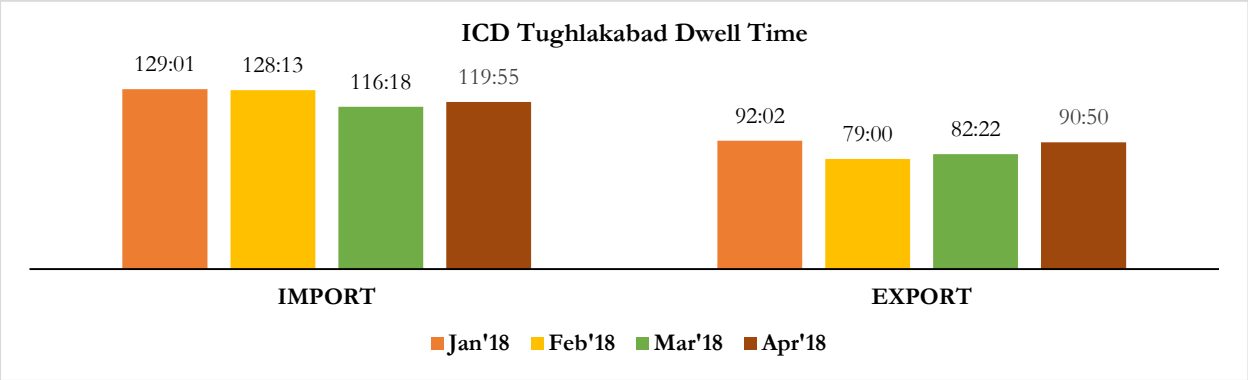
CFS Dwell Time



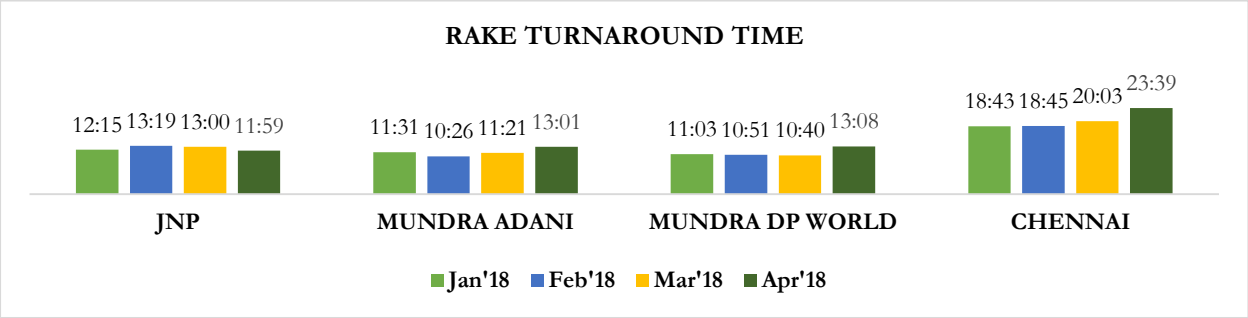


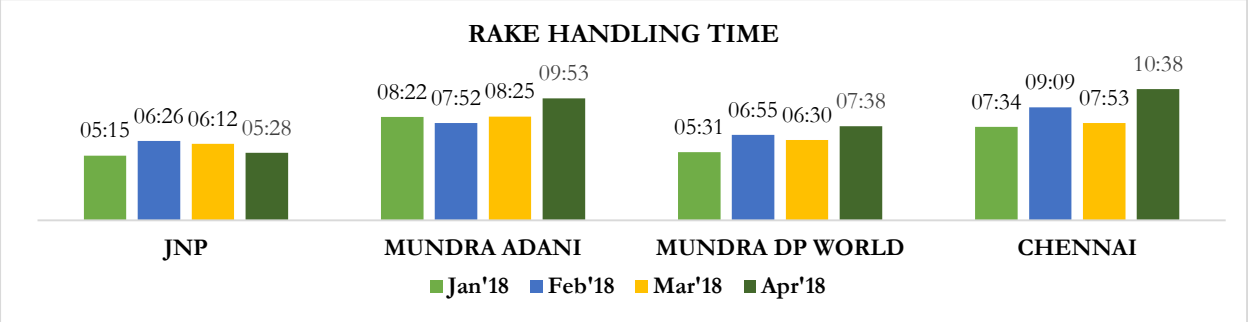
For March-18, Chennai CFS Dwell Time could not be calculated due to limitations is the data sets.

ICD TKD Dwell Time

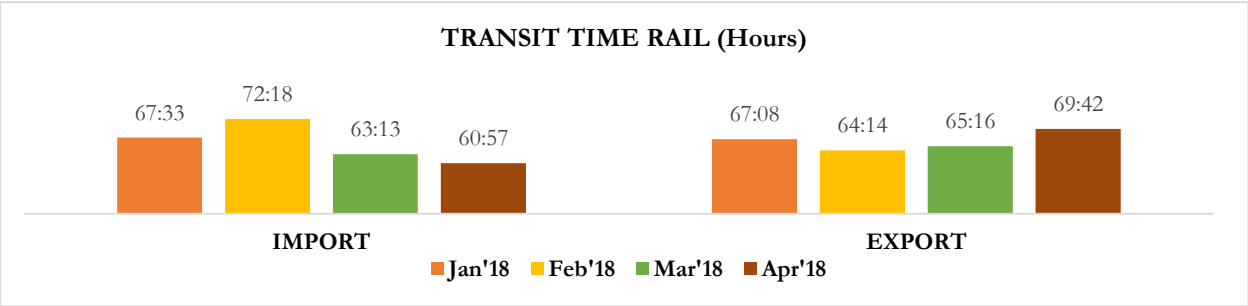


Rake Handling





JNP-TKD Rail Transit Time



Annexure-I

Time Taken from Vessel Arrival to Vessel Berthing

Terminal	Time- Hours
JNPCT	22:11:31

Timelines for the Import of Auto-components from South Korea and Export of Electrical Machinery to US

Import Timeline of Auto components from South Korea	
Parameter	**Value**
Number of BoEs	103
Number of Containers	7930
RMS Facilitated BoEs	70 (68%)
Import Dwell Time (Entry Inward to OOC)	131:57:24
Customs Release Time	19:45:31

Export Timeline of Electrical Machinery to US	
Particulars	**Value**
Number of SBs	345
Number of Containers	1741
Customs Release Time	4:26:00

Number of Containers Handled by Ports EXIM

Number of FCL Containers Terminal-wise			
Port	**Terminal**	**Export**	**Import**
JNP	JNPCT	18974	29414
	GTICT	37990	56186
	NSICT	15219	10769
	NSIGT	22085	20507
Chennai	CCTL	12202	19899
	CITPL	13492	26122
Mundra	ACMTPL	13630	6161
	AICTPL	37093	23629
	AMCT	24201	11405
	MICT	22928	13221
Total		**217814**	**217313**

Port Dwell Time Terminal-wise- Import

Terminal Wise Activities (Imports)					
Port	**Terminal**	**Vessel Berthing to Container Discharge**		**Container Discharge to Port Out**	
		N	**Avg.**	**N**	**Avg.**
JNP	JNPCT	29280	15:43:06	29274	42:56:00
	GTICT	56186	10:23:30	55071	41:11:24
	NSICT	10769	6:57:33	10769	52:26:00
	NSIGT	20507	9:49:40	20507	53:35:33
Chennai	CCTL	19899	10:03:53	19899	58:09:34
	CITPL	26122	9:35:13	26122	53:42:47
Mundra	ACMTPL	6161	5:24:19	6002	80:10:34
	AICTPL	23629	9:09:38	21201	121:33:09
	AMCT	11405	6:34:11	11246	75:29:58
	MICT	13221	5:25:24	12980	91:48:35

Port Dwell Time Terminal-wise- Export

Terminal Wise Activities (Exports)					
Port	**Terminal**	**Container In to Container Loading**		**Container Loading to Vessel Sail Off**	
		N	**Avg.**	**N**	**Avg.**
JNP	JNPCT	18973	82:01:54	18498	15:51:16
	GTICT	37990	70:08:44	37978	10:17:16
	NSICT	15219	76:24:39	15219	8:12:28
	NSIGT	20028	72:25:56	20028	10:06:22
Chennai	CCTL	12202	80:25:22	12201	12:43:11
	CITPL	13492	54:31:54	13492	12:08:27
Mundra	ACMTPL	13630	119:52:21	13630	8:47:34
	AICTPL	37093	110:21:03	37093	11:39:45
	AMCT	24201	100:31:22	24201	8:57:27
	MICT	22928	100:39:34	22928	7:29:58

CFS Process Timelines - Import

CFS Process Timelines (Import)								
Port	**CFS**	**Entries**	**N**	**GIN to SC**	**N**	**SC to OOC**	**N**	**GIN to OOC**
JNP	All Cargo	52	42	46:28:23	27	0:53:20	23	49:43:50
	All Cargo Annex	3,442	2949	75:22:12	2781	27:40:04	2841	84:34:37
	Ameya Logistics	2,969	2969	103:40:41	810	90:44:09	2649	119:59:59
	Ashte	2,770	2770	79:13:02	1906	27:51:56	2459	89:54:35
	Balmer Lawrie	1,402	1374	113:20:17	1402	0:00:00	5	113:20:17
	EFC	904	904	53:26:29	43	43:28:56	561	45:07:28
	Goblicon	1,750	1714	115:59:43	1208	27:45:18	1574	124:59:10
	HIND Terminal	5,479	5409	110:42:14	1703	71:29:54	4864	126:01:58
	ICTPL	551	515	122:33:30	145	94:20:29	363	136:59:25
	JWC	1,511	1499	99:25:40	993	38:01:22	1337	115:39:03
	JWR	7	7	106:01:00	3	62:39:20	7	122:57:00
	Navkar 1-2-3	4,770	4664	119:39:19				
	Seabird	1,696	1696	87:46:22	538	46:28:18	1394	97:34:43
	TAKE CARE LOGISTICS PARK	1,590	1554	111:56:28	1053	58:38:32	1445	135:27:55
	GDL	3,011	2972	93:48:13	2982	22:59:09	2956	116:32:58
	Kerry indev	1,398	631	96:16:16	1	702:41:05	1204	85:09:40
	Punjab Conware	1,437	1407	126:28:55	1407	4:35:19	1399	130:44:21
	Vaishno	880	879	102:42:51	295	104:08:51	772	124:11:15
Chennai	ECCT	1,288	415	79:51:21	125	36:20:17	1101	79:56:46
	All Cargo	2,271	2030	66:43:21	148	35:11:21	174	95:26:38
	GDL	2,926	2355	68:04:57	2322	14:57:22	2183	77:17:16
Mundra	Mundra CFS	463	463	120:39:10	91	57:49:13	426	105:11:55
	Allcargo	1,811	1700	85:33:55	151	47:50:28	272	88:52:55

CFS Process Timelines - Export

CFS Process (Export)								
Port	**CFS**	**Entries**	**N**	**ECO to STUFF**	**N**	**STUFF to MO**	**N**	**ECO to GO**
JNP	All Cargo	280	274	135:30:55	274	49:42:54	273	183:57:46
	All Cargo Annex	1790	1787	83:06:32	1712	28:32:30	1787	106:01:15
	Ameya Logistics	556	554	135:09:06	556	27:35:41	552	163:01:41
	Ashte	439			439	6:27:04		
	Balmer Lawrie	318			318	0:00:00		
	EFC	111	111	66:45:43	102	28:02:55	111	96:10:52
	Goblicon	348	345	103:02:19	348	6:03:47	342	144:26:37
	HIND Terminal	4254	4241	91:47:18	4243	20:57:27	4240	119:34:09
	ICTPL	2098			2097	40:31:49		
	JWC	3631			2040	44:41:57		
	JWR	5217			5193	7:35:45		
	Navkar 1-2-3	3614	3556	107:31:43	2255	46:41:17	3538	143:59:27
	Seabird	569			482	43:27:55		
	TAKE CARE LOGISTICS PARK	307	307	101:26:31	108	26:43:59	307	120:44:14
	GDL	6262	6249	93:24:27	6218	14:23:21	6249	116:42:17
	Kerry indev	523	523	0:00:00	523	2:45:12	523	26:16:43
	Punjab Conware	15654	15619	84:32:47	15654	20:46:16	15610	111:49:42
	Vaishno	803			803	48:07:24		
Chennai	All Cargo	3367	3367	102:57:10	3367	102:57:10	3367	112:33:41
Mundra	Mundra CFS	2637	2449	213:04:12	1667	26:10:01	2445	236:46:16
	allcargo	970	901	143:09:55	967	26:47:02	892	170:41:24

ICD Process Timelines- Import

ICD Cumulative (Import)								
Number of Containers	**N**	**GC-FAC**	**N**	**Non-GC-FAC**	**N**	**Warehouse**	**N**	**Direct**
Arrival to EJO			1031	80:52:44	84	73:44:41	185	109:47:49
EJO to DJO					151	100:48:40		
DJO to De-stuffing					134	3:48:07		
EJO to OOC			1034	65:40:08			187	58:07:10
De-stuffing to OOC					112	155:31:14		
OOC to DJO							173	36:52:14
OOC to Gate pass	1562	21:42:10	985	13:42:00	97	56:50:58		
DJO to Gate Pass							189	4:12:19
Gate Pass to Departure	1698	18:27:10	1042	14:00:38	151	1:54:24	189	2:54:55
Arrival to OOC	**1692**	**93:49:55**	**1017**	**140:35:23**	**148**	**237:55:03**	**179**	**151:37:53**
Arrival to Departure	1638	128:00:04	1014	165:17:45	148	276:56:20	179	191:21:14

ICD Process Timelines- Export

ICD Cumulative (Export)						
Number of Containers	**N**	**GC-FAC**	**N**	**Warehouse**	**N**	**Direct**
Arrival to CRN	400	22:19:51				
Arrival to LEO			301	45:51:09	24	15:01:45
CRN to LEO	400	17:28:11				
LEO to Loading	400	22:18:24				
LEO to Stuffing			299	30:07:22	24	16:38:20
Stuffing to Sealing			294	9:31:42	24	1:26:47
Sealing to Loading			301	40:00:48	24	62:05:13
Loading to Dispatch	361	1:33:53	281	1:52:04	24	2:18:47
Arrival to Dispatch	**400**	**63:29:48**	**300**	**126:45:54**	**24**	**97:30:52**

PGA

AQCS Process-wise												
Agency	**N**	**BoE**	**N**	**BoE to APP**	**N**	**APP to SMP**	**N**	**SMP to RPT**	**N**	**RPT to NOC**	**N**	**APP to NOC**
AQCS JNP	504	499	487	179:49:39	209	0:06:53	149	249:39:52	162	40:53:20	437	105:07:00
AQCS Mundra	211	211	206	146:05:50	7	3:25:43	4	288:00:00	4	18:00:00	208	5:53:05

FSSAI Process-wise (Chennai)						
Process	**Sample**		**Non-Sample**		**Not in Scope**	
	N	Avg. Time	N	Avg. Time	N	Avg. Time
BoE to Application	375	106:31:27	12	122:01:41	223	98:36:45
Application to Scrutiny	389	31:37:18	12	32:15:33	225	30:49:52
Scrutiny to NOC			12	1:14:58	225	14:22:05
Scrutiny to Payment	364	19:32:56				
Payment to Sample	160	33:04:48				
Sample to NOC	387	91:40:37				
Application to NOC			12	33:30:31	225	45:11:56
Total Time	**389**	**156:22:43**	**12**	**33:30:31**	**225**	**45:11:56**

FSSAI Process-wise (JNP)						
Process	**Sample**		**Non-Sample**		**Not in Scope**	
	N	Avg. Time	N	Avg. Time	N	Avg. Time
BoE to Application	1200	147:10:23	54	113:53:49	125	196:01:58
Application to Scrutiny	1230	32:15:16	54	35:59:45	128	79:39:37
Scrutiny to NOC			44	14:58:03	128	9:21:00
Scrutiny to Payment	1230	21:38:27				
Payment to Sample	833	36:03:43				
Sample to NOC	1214	125:55:49				
Application to NOC			54	48:35:46	128	89:00:36
Total Time	**1230**	**194:14:48**	**54**	**51:08:06**	**128**	**89:00:36**

Annexure-II

Methodology

Monthly Segregation of Data		
Stakeholder	**Import**	**Export**
Port	**Vessel Berthing**	**Port In**
Customs	**Out of Charge**	**Let Export Order**
CFS	**Gate Out**	**Gate Out**
ICD	**Departure**	**Departure**
PGA	**NOC**	**NOC**

Dwell Time Calculation		
Stakeholder	**Import**	**Export**
Port	**Container Discharge to Port Out**	**Port In to Container Loading**
Customs	**Submission of BoE to OOC**	**Registration to LEO**
CFS	**Gate in to OOC**	**Carting to Gate Out**
ICD	**Arrival to OOC**	**Arrival to Departure**
PGA	**Application to NOC**	**Application to NOC**
Rake TRT	**Arrival of Rake to Departure**	
Rake THT	**Unloading to Loading of Containers**	
**TRT- Turn Around Time: THT- Terminal Handling Time*		