

Briefing: Brexit and the European freight trades

27th February 2019



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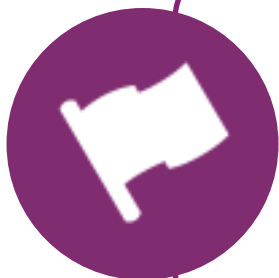
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Introduction

On departure from the EU, the UK's RoRo ports and the Channel Tunnel may have reduced throughput capacity if new customs procedures do not permit the current free flow of cargo; freight may therefore need to be rerouted and modes may need to change. We have analysed capacity at Dover and had a preliminary look at possible alternative routing options for shippers.



Issue

- The UK is presently scheduled to leave the EU at 2300 on 29th March. The continued efficient functioning of the trade between the UK and EU from this date is of great importance.
- The cross-Channel routes through Dover and the Channel Tunnel are the main arteries through which this trade runs. It is therefore important to understand the capacity of these routes from 29th March and to identify any risks.



Approach

- Drewry has carried out a preliminary evaluation of the capacity of the Port of Dover by calculating the daily capacity of individual elements in the overall port process and comparing these with average daily demand.
- We have also conducted simple sensitivity analysis on certain elements of Dover capacity in order to determine the conditions under which any might become bottlenecks
- Finally, we have looked at alternative freight services to form an initial view on whether any could cover any cargo that could not be accommodated by Dover

*Note: We have not analysed the throughput capacity of the Channel Tunnel as part of this study.

Key findings

SUMMARY

Port of Dover could cope with 50% increases in process, dwell and French port time, although traffic peaks would need management; doubling would lead to significant congestion and capacity constraints. Alternative modes could accommodate some overflow cargo. Supply chains would need to be redesigned.

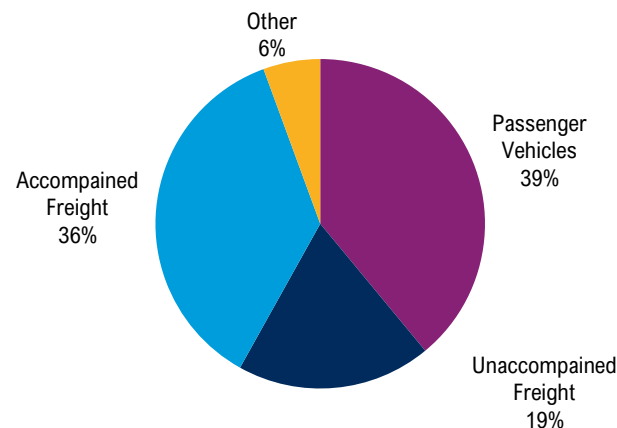


UK–EU RoRo market: seaborne size and share

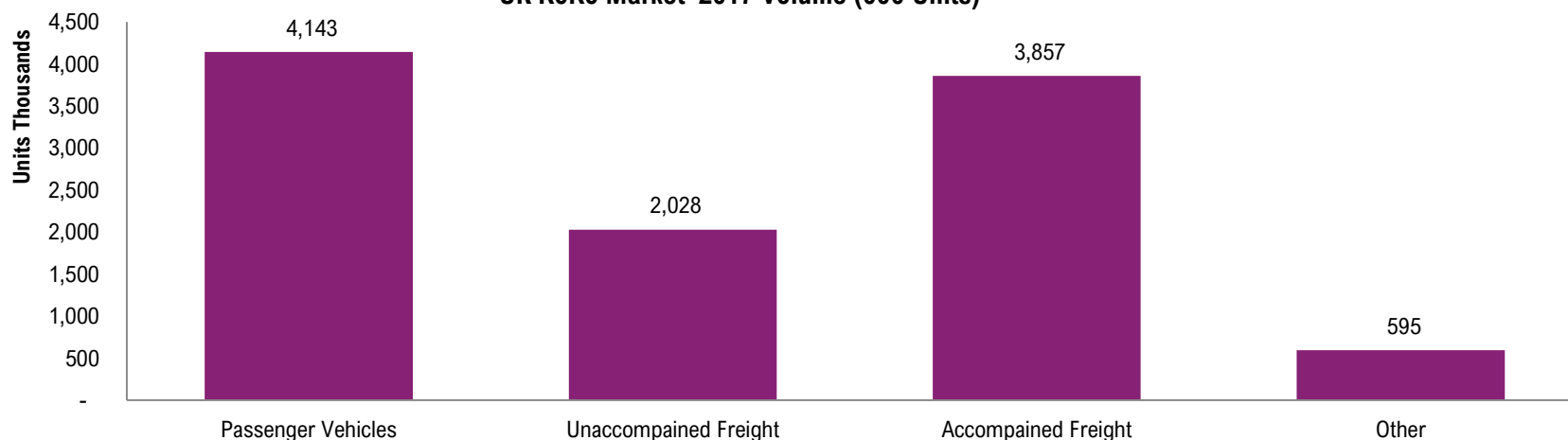
In 2017 UK ports handled 10.6 million units of RoRo traffic to and from other EU countries. Freight (accompanied and unaccompanied combined) accounted for 55% of total UK/Other EU RoRo traffic.

- In 2017 UK ports handled 10.6 million units of RoRo traffic to and from other EU countries.
- Passenger vehicles accounted for 39% of total units, whereas freight (accompanied and unaccompanied combined) accounted for 55% of total UK/Other EU RoRo traffic.
- Accompanied freight, which is the movement of cargo with a truck and trailer, currently accounts for 36% of total UK/Other EU RoRo traffic.
- Unaccompanied freight, which is the movement of trailers without a truck/driver, represents 19% of total volumes, and is currently the secondary choice for moving RoRo cargo to and from Other EU.

UK RoRo Market 2017 % Share by sector



UK RoRo Market 2017 Volume (000'Units)



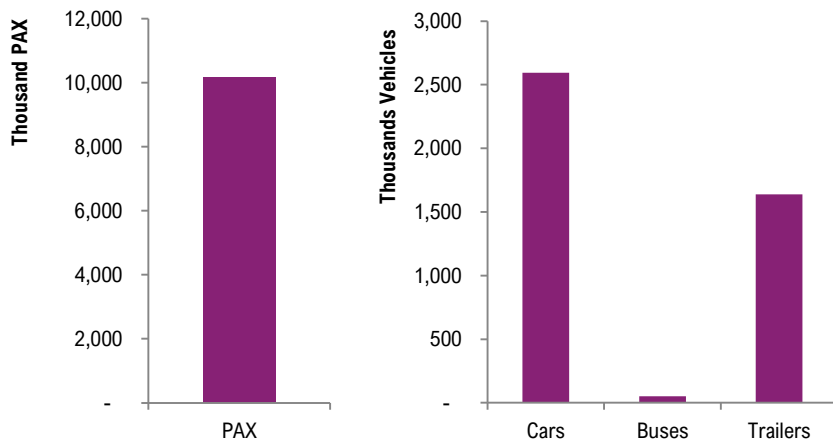
Source: DfT Maritime Statistics

UK – EU RoRo market: Channel Tunnel

In 2017 the Channel Tunnel carried 10.1 million passengers, 2.5 million cars and 1.6 million freight trailers. It is also capable of handling rail wagons (unaccompanied freight) which amounted to 1.2 million tonnes in 2017. In 2017 Dover and the Channel Tunnel combined handled 4.2 million freight trailers and 21.8 million passengers

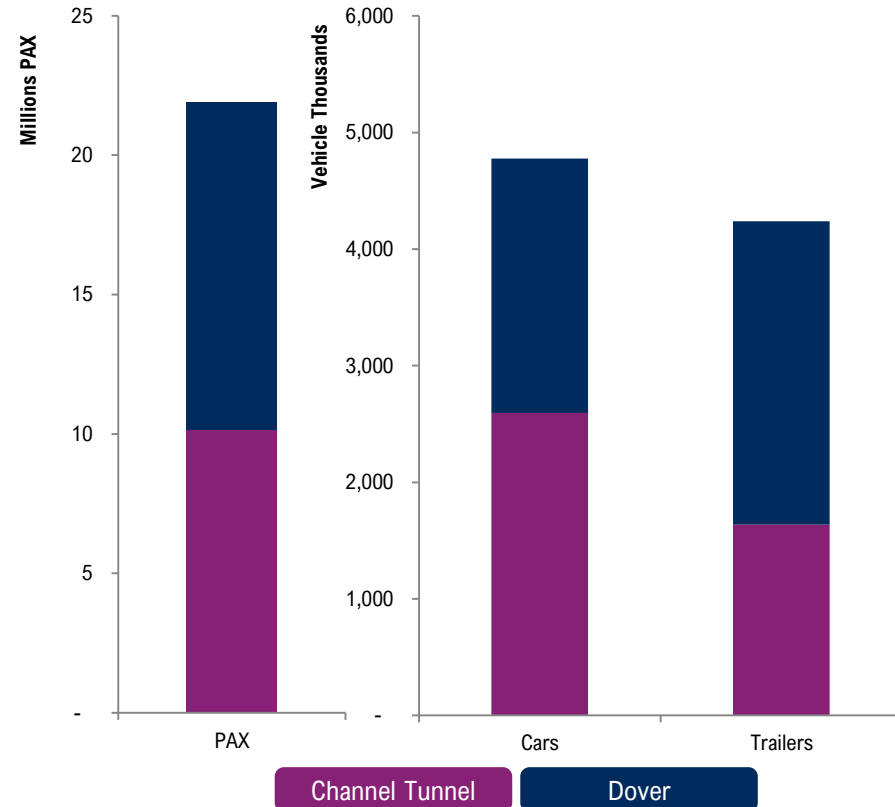
- The Channel Tunnel is a 31.4 mile rail tunnel connecting Folkestone in Kent to Coquelles, Pas de Calais in France. The journey time is approximately 35 minutes.
- Due to Folkestone's proximity to Dover, the Channel Tunnel is directly competing with Dover for both passenger and freight volumes.
- The Channel Tunnel's business model is similar to Dover port, in that the user can 'turn up and go' providing the key benefits of speed, service frequency and flexibility.
- In 2017 the Channel Tunnel carried 10.1 million passengers, 2.5 million cars and 1.6 million freight trailers. It is also capable of handling rail wagons (unaccompanied freight) which amounted to 1.2 million tonnes in 2017.
- In 2017 Dover and the Channel Tunnel combined handled 4.2 million freight trailers and 21.8 million passengers

Channel Tunnel 2017 Volumes



Source: Shippax

Dover & Channel Tunnel 2017 Volumes



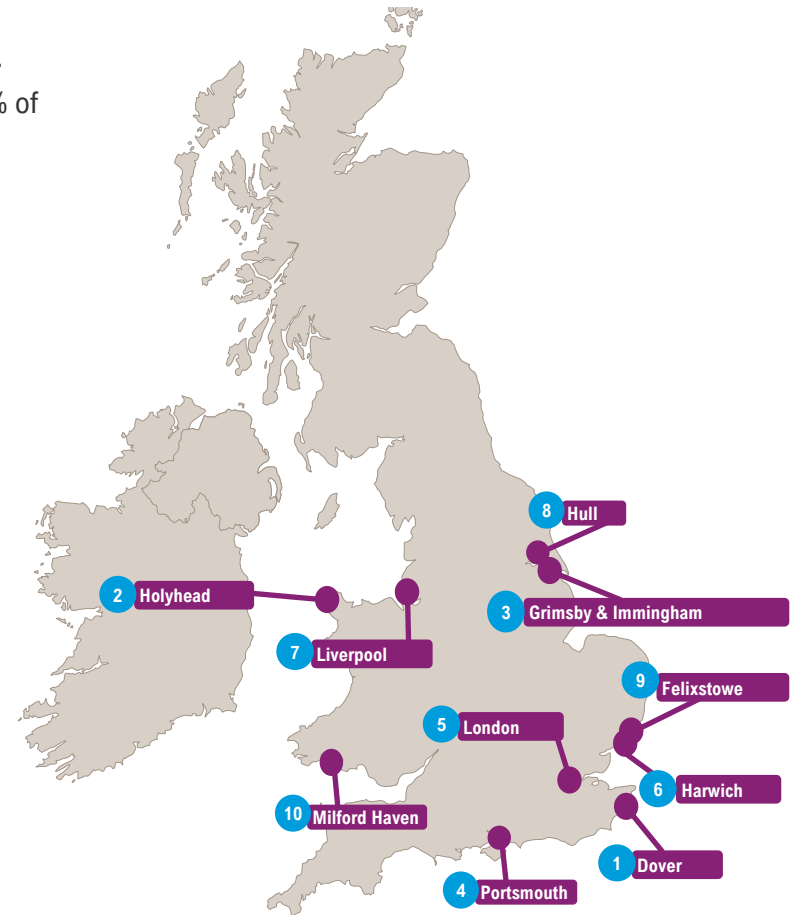
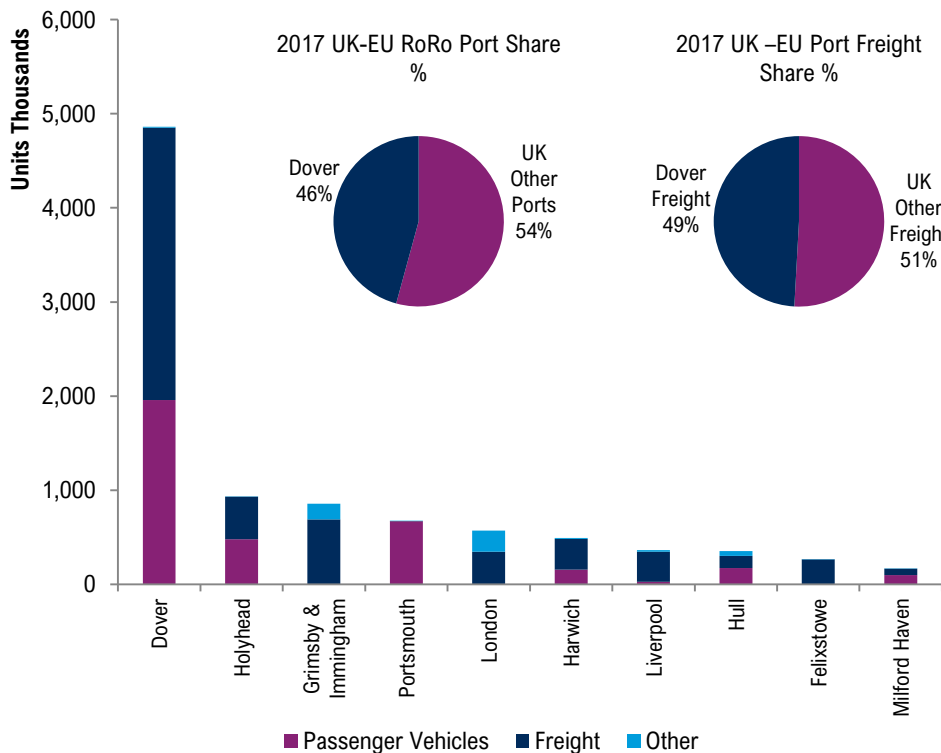
UK-EU seaborne RoRo market: ports and share

The top 10 UK ports handling RoRo units to and from EU accounted for 90% of total traffic in 2017. Dover is by the far the largest port, accounting for 46% of total traffic and 49% of freight traffic moved to and from EU countries.

- The top 10 UK ports handling RoRo units to and from other EU countries accounted for 90% of total traffic in 2017.
- The top 10 UK ports accounted for 94% of total freight units to/from other EU.
- Dover is by the far the largest port, accounting for 46% of total traffic and 49% of freight traffic moved to and from other EU.

UK Port Rankings – Top 10 RoRo ports (units)

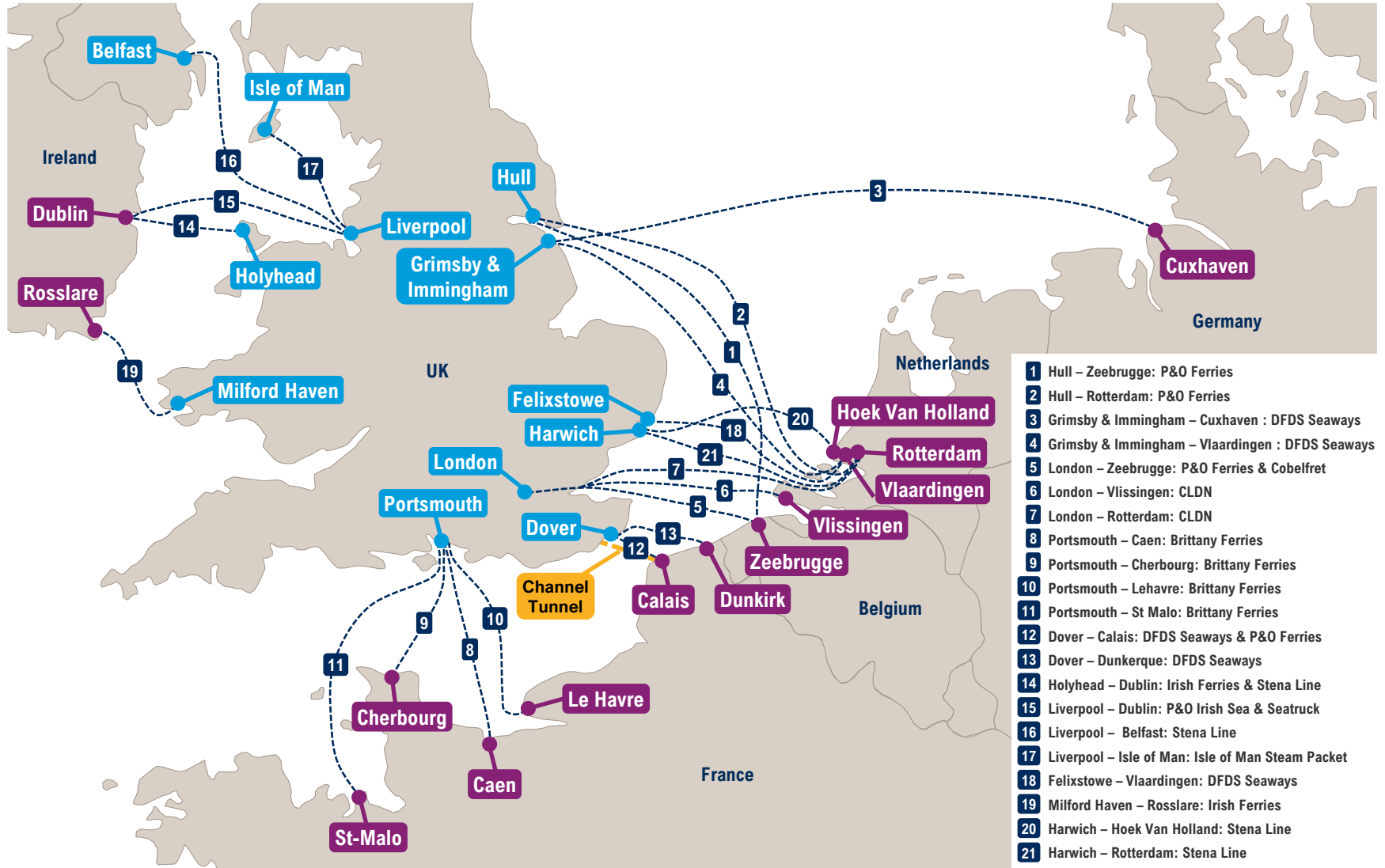
UK -EU Port RoRo 2017 Volumes and Shares



Source: DfT Maritime Statistics

UK- EU seaborne RoRo market: ferry routes and operators

The top 10 RoRo ports in the UK connect to Continental Europe and Ireland with a total of 21 different route options. There are 10 operators active on these routes. P&O Ferries has operations on 5 routes and DFDS on 5 routes; both operate from Dover.

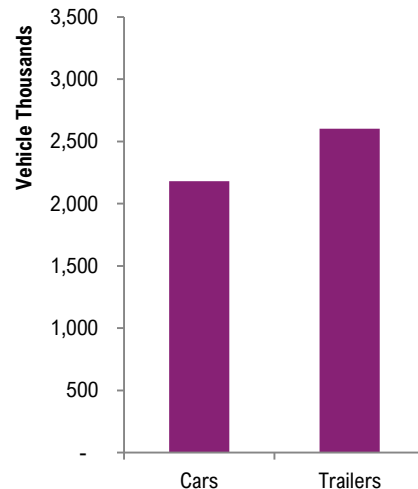
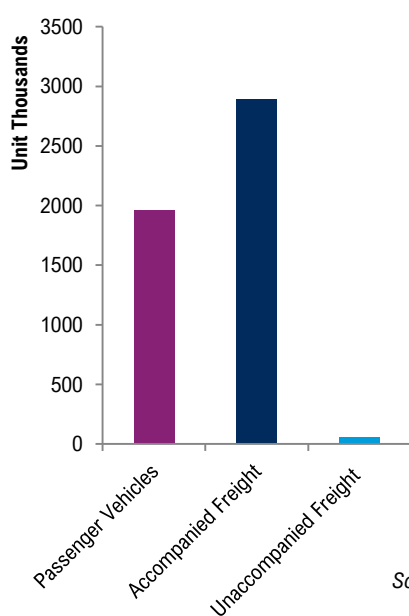


Dover overview: volumes and routes

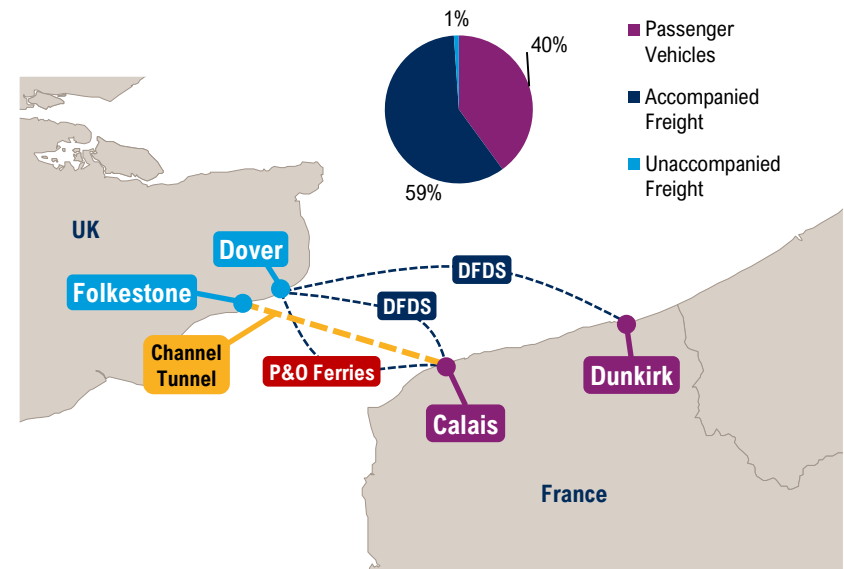
Dover is the UK leading port for the movement of RoRo volumes to and from other EU countries. In 2017 it handled 4.8 million units of traffic. Dover's freight traffic is 60% of the total volume through the port (98 % of this is accompanied cargo). This equated to 2.6 million trailers in 2017.

- Dover is the UK leading port for the movement of RoRo volumes to and from other EU. In 2017 it handled 4.8 million units of traffic.
- Dover's traffic is mainly car passenger volumes and freight volumes. In 2017 car passenger volumes accounted for 40% of total port traffic, driven mainly by tourist traffic to Continental Europe. This equated to 2.1m cars in 2017.
- Dover's freight traffic generates 60% of the total volume through the port; 59 % of total freight is accompanied cargo. This equated to 2.6m trailers in 2017.
- The port is connected to Calais in France, with a sailing time of 90 minutes covering 21 nm
- It is also connected to Dunkirk in France, with a sailing time of 2 hours covering 38 nm.
- There are 2 ferry operators at the port:
 - P&O Ferries (Calais) - accounts for 53% of total volumes moving to/from Dover
 - DFDS – operates to Calais and Dunkirk accounts for 47% of total volumes moving to/from Dover

Dover – EU RoRo 2017 Volumes and Shares

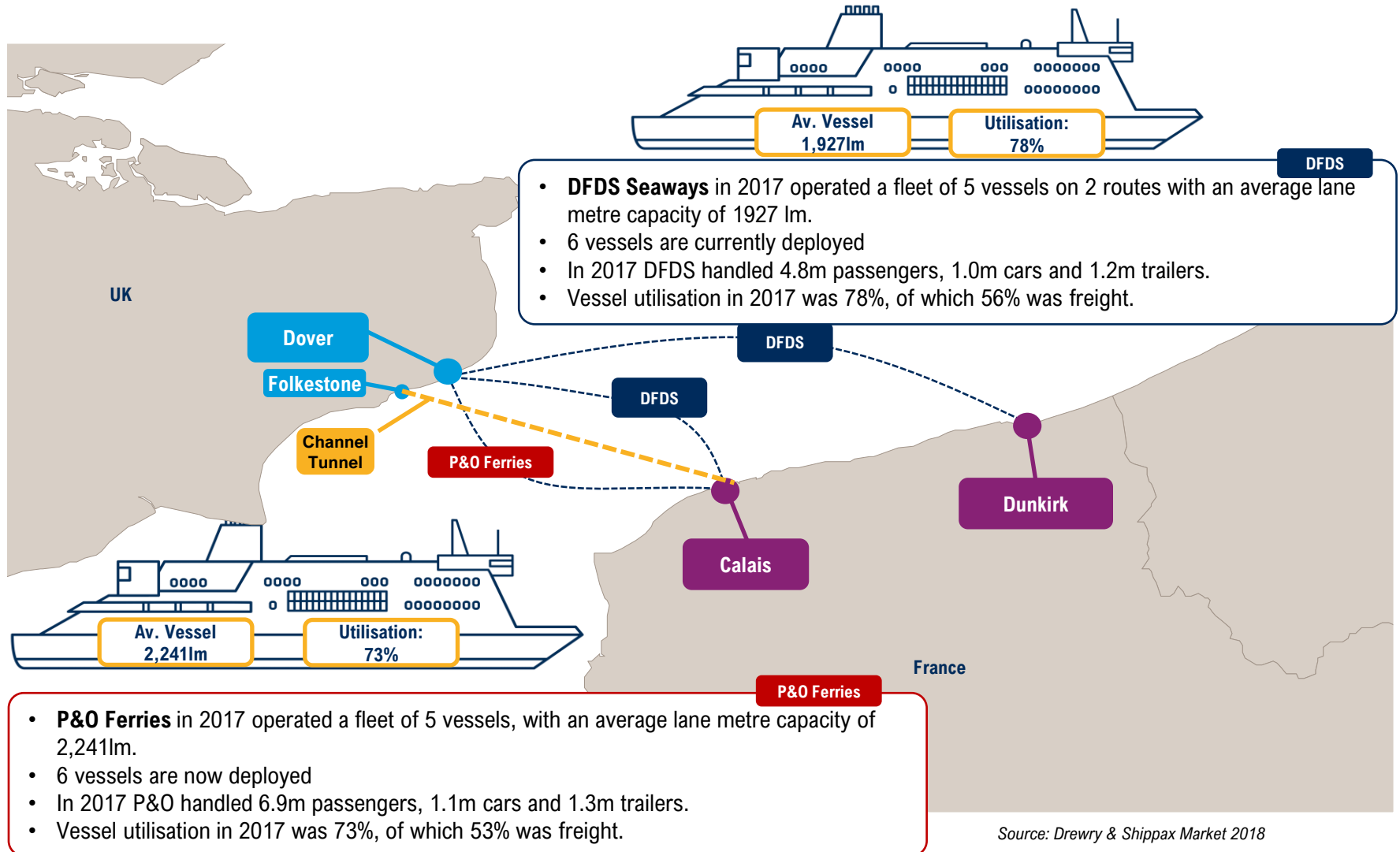


Source: DFT Maritime Statistics & Shippax



Dover overview: operators

In 2017, P&O Ferries and DFDS together handled 11.7 million passengers, 2.1million cars and 2.5m trailers. Combined vessel utilisation from Dover-EU was 75%, of which freight utilisation was 55%. Utilisation of vessels is supported by efficient port operations with Dover providing sufficient berth, yard, and check in capacity (this is also required at Calais and Dunkirk).



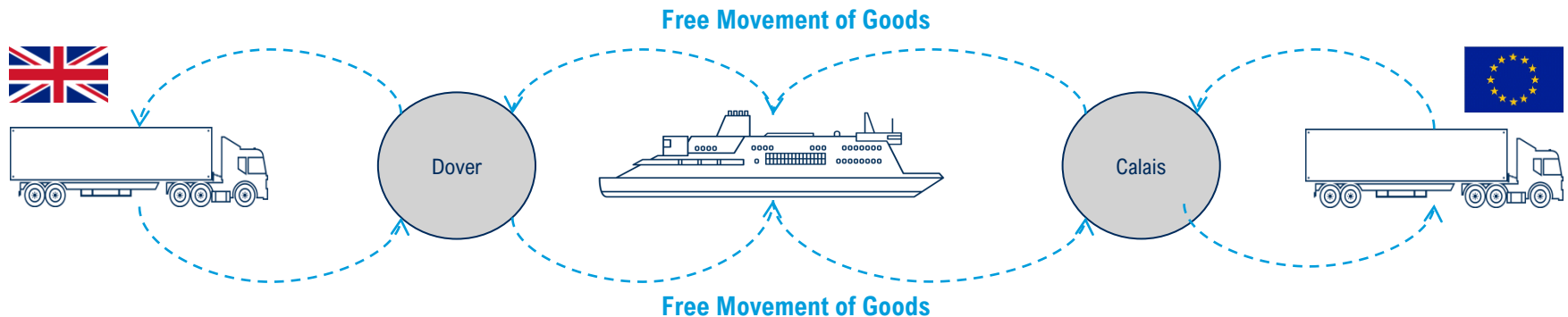
Source: Drewry & Shippax Market 2018

Dover: customs processes, pre and post Brexit

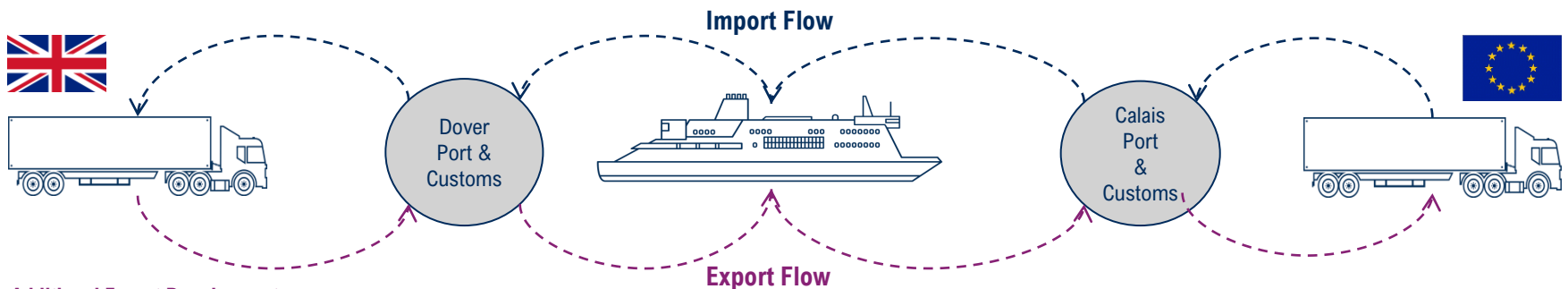
RoRo traffic between the UK and rest of the EU is now not subject to customs processes. From 2300 on 29th March, imports and exports will be subject to customs processes and require the completion of Fiscal and Safety and Security Declarations. The effectiveness and efficiency of the new processes and systems and the readiness of the trade to adopt them is not known.

Pre Brexit Process within EU

Free Movement of goods between EU countries, without the need to make import/export declarations or pay customs duties within EU countries



Post Brexit Process: Import and Export



Additional Export Requirements:

- Apply for Export License (if applicable)
- Make export and safety and security declarations (combined declaration) prior to arrival at export port
- Receive Permission to Proceed
- Pay import duties at final destination
- UK remains part of Common Transit Convention

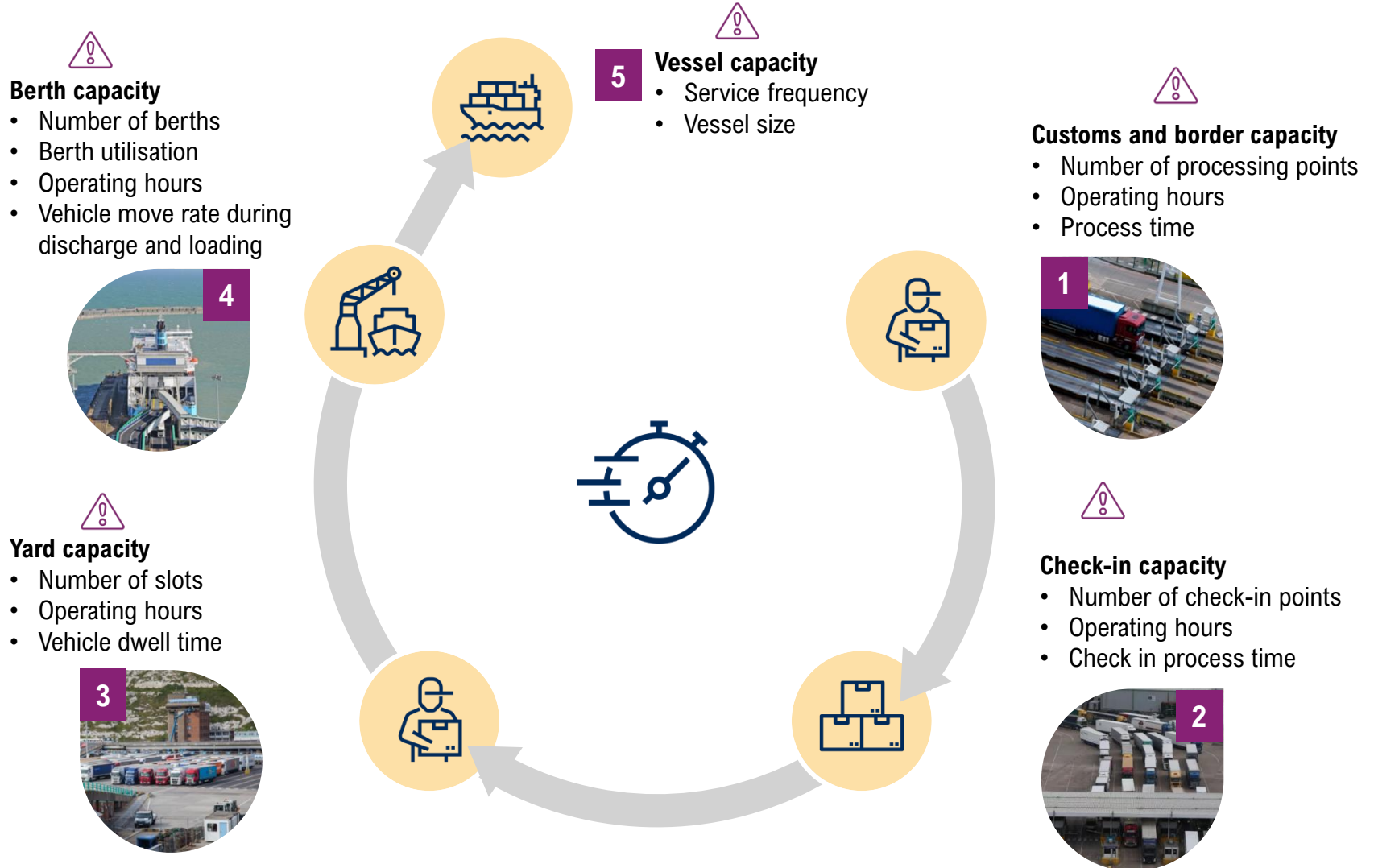
Additional Import Requirements:

- Apply for Import License (if applicable)
- Make safety and security declarations prior to arrival at port
- Declare goods prior to arrival at port using appropriate HMRC process (Customs Freight Simplified Procedures or Transitional Simplified Procedures)
- Port Health checks (Foodstuffs) requirements
- Pay import duties in the month after arrival in UK

Source: Drewry

Dover: port throughput capacity

The throughput capacity of a RoRo port is determined by berth capacity, yard capacity, regulatory processing and check-in capacity. Whichever is the bottleneck sets port capacity. Volume varies through the day and week; peaks need to be covered.



Dover: outbound traffic flow and capacity

Dover has 7 berths and enough check-in and yard capacity for normal operations. Port throughput capacity is 12-14,000 vehicles per day. Border control capacity is able to handle existing traffic volume. Customs capacity is currently required for spot checks and security. Proposed customs processes aim to limit the requirement for Customs capacity at Dover. Vessel capacity is highly utilised.

Outbound: average outbound volume is 7,000 vehicles per day, including 4,000 trailers. Peak demand is higher.

1. Border control

2. Customs

3. Ferry check-in

4. Move to yard

Capacity: 13,000 vehicles per day

Capacity: Non EU and security only

Capacity: 14,000 vehicles per day

Capacity: 12,000 vehicles per day

Assumptions

- 24 hour operation
- 8 passport check points
- 80% utilisation
- Processing time: 1 minute

- Spot check
- Focus on security

- 24 hour operation
- 24 check in gates
- 80% utilisation
- Processing time: 2 minutes

- Outbound vehicles only
- 1,100 vehicles slots
- Dwell time: 1.5 hour
- 70% utilisation

5. Vessel loading

6. Vessel capacity

Capacity: 13,000 vehicles per day

Capacity: 9,000 vehicles per day including 5,000 trailers per day

Comment

Assumptions

- 24 hour operation
- 7 berths
- Berth utilisation: 70%
- Load rate: 225 vehicles per hour

- 50 departures per day
- Trailers per sailing: 93

- Dover has enough Border Control, Check-in and Yard capacity for outbound traffic in normal operations and to cover normal demand peaks.
- Customs capacity is currently required for security reasons. Future customs procedures are designed to allow export clearance to take place away from the port
- Berth and vessel capacity is 9,000 vehicles per day, approximately 30% above average daily demand. Capacity utilisation is very high at peak times

Dover: inbound traffic flow and capacity

Dover has sufficient berth capacity. Inbound Customs capacity is very limited but proposed customs processes aim to limit the requirement for Customs capacity at Dover.

Inbound

1. Vessel capacity

2. Vessel unloading

3. Customs

Capacity: 9,000 vehicles per day

- 50 sailings
- Freight capacity trailers per sailing: 93

Capacity: 13,000 vehicles per day

- 24 hour operation
- 7 berths
- Berth utilisation: 70%
- Discharge rate: 225 vehicles per hour

Capacity: Non EU and security only

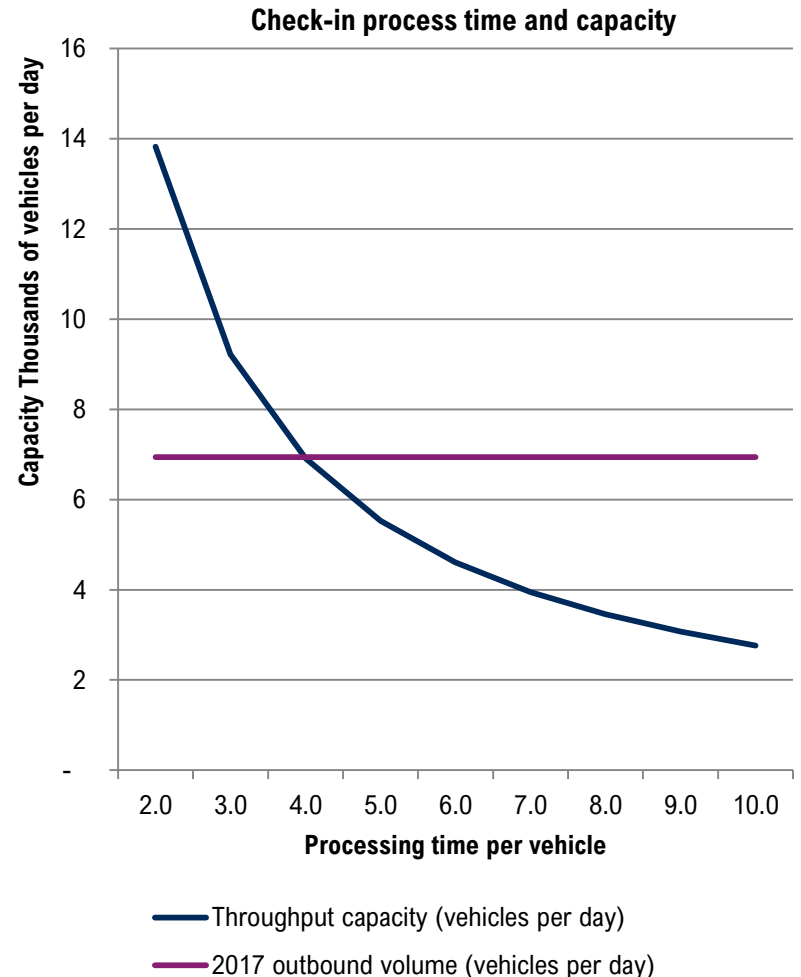
- Non EU traffic
- Spot check
- 24 hour operation

The analysis suggests that there is sufficient vessel and berth capacity inbound traffic to handle existing operations with some margin for peaks and disruption. Customs capacity is presently limited and is not required for the EU trade.

Sensitivities: check-in time

Check-in capacity at Dover is presently approximately double average daily demand, based on a process time of 2 minutes. Check-in capacity will be sufficient unless process time doubles to 4 minutes.

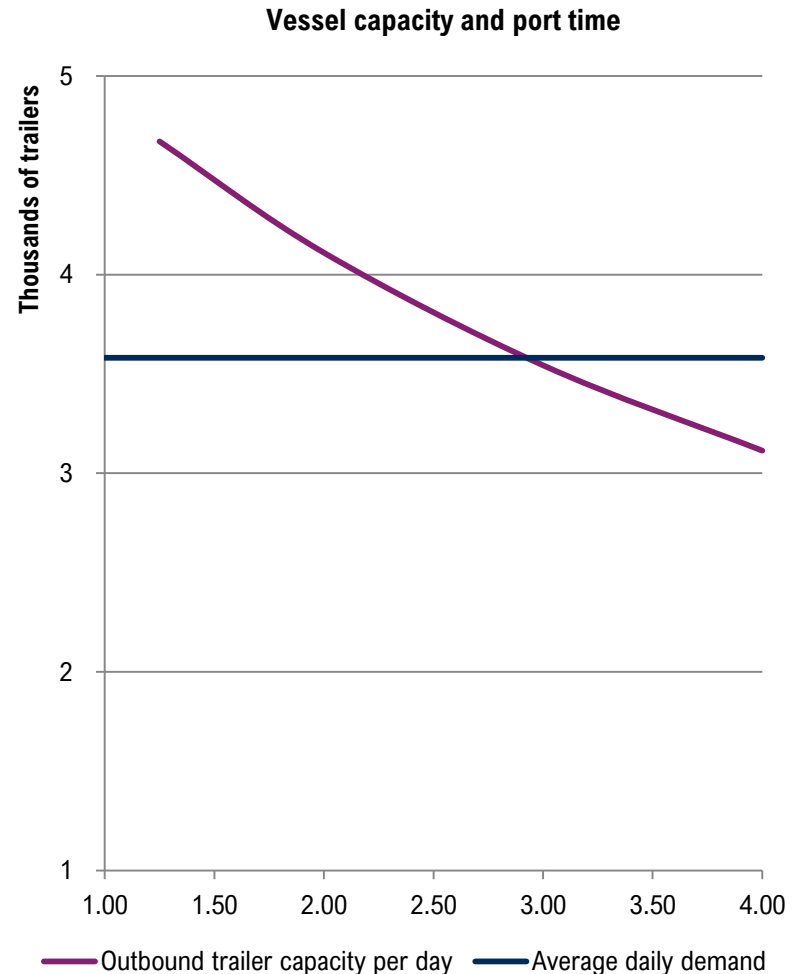
- There are 24 check-in points at Dover, providing capacity of 14,000 vehicles per day in present operations.
- From 29th March, check-in process may include barcode scanning, for example where the Common Transit Convention is being used. The precise documentary requirements for the passage of exports through check-in are not yet known.
- If any additional checks can be accommodated within the existing process time, check-in capacity will be maintained
- Check-in capacity will still be sufficient if process time increases by 50%
- If process time doubles to 4 minutes, check-in capacity will be just sufficient to cover average demand and the likelihood of congestion increases markedly.
- The Port of Dover's view is that check-in process time will remain 2 minutes and that check-in will not be a bottleneck.



Sensitivities: vessel capacity

Average each way trailer volumes are approximately 3,600 per day. Present vessel capacity is approximately 4,700 trailers per day. An increase in port time in France would reduce service frequency and capacity. If port time in France rose to 2 hours, capacity would be sufficient; a rise to 3 hours would cause significant congestion and capacity constraints.

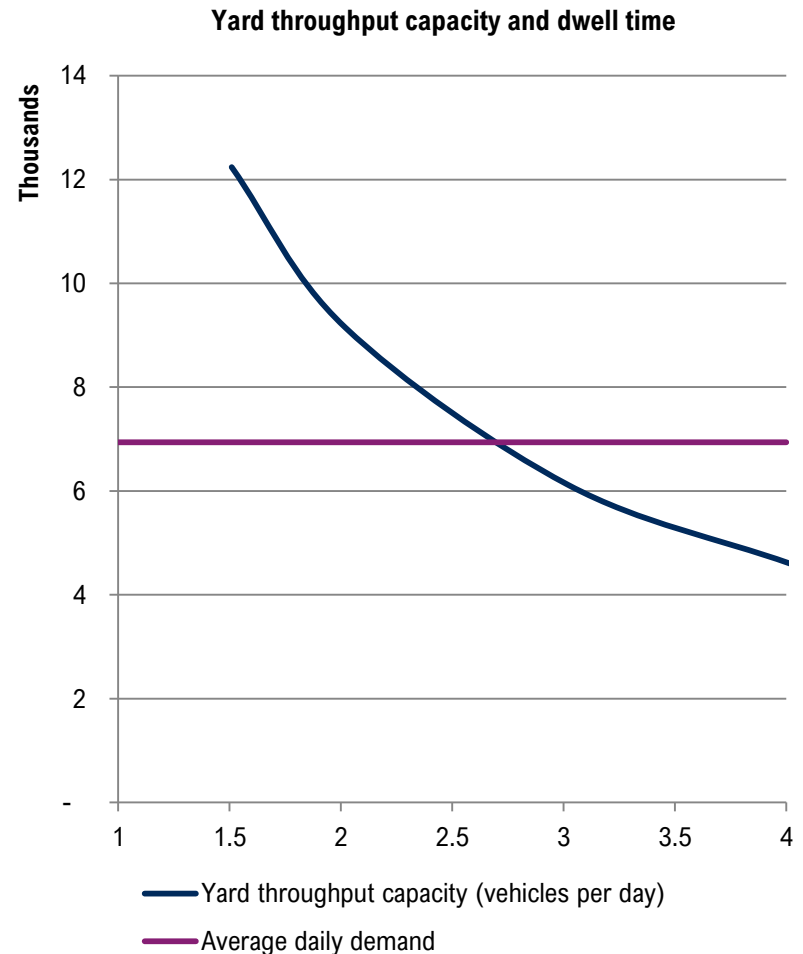
- Average each way trailer volumes are approximately 3,600 per day. Present vessel capacity is approximately 4,700 trailers per day.
- Vessel capacity is determined by the number of vessels deployed and the number of sailings undertaken each day. Currently, 12 vessels generate on average 50 sailings each way to and from Dover.
- If vessels were delayed in French ports, the number of sailings would fall and trailer capacity would be reduced.
- An increase of port time in France to 2 hours would leave enough capacity overall, but some congestion would likely at peak times.
- An increase of port time in France to 3 hours would reduce capacity to average daily demand, leading to significant congestion



Sensitivities: embarkation area capacity

Dover embarkation area yard capacity is presently 12,000 vehicles per day, nearly double average daily demand. If average dwell times rise from 1.5 hours, capacity will fall. A rise to 2.5 hours would lead to congestion.

- We estimate that there is a total of 1,100 vehicle slots in the embarkation areas at Dover. With an average vehicle dwell time of 1.5 hours, daily throughput capacity is approximately 12,000 vehicles; average daily demand is approximately 7,000 vehicles.
- There is sufficient capacity if dwell times rise to 2 hours.
- An average dwell time of 2.5 hours would lead to congestion, while an increase to 3 hours would create a capacity bottleneck.
- A rise in dwell time could arise as a result of disruption to vessel schedules



Dover capacity: conclusions

Dover port capacity is sufficient to handle normal operations; capacity of various elements appears well balanced. Vessel capacity is presently the limiting factor. The port can cope with 50% increases in process, dwell and French port time, although traffic peaks would require management; doubling would led to significant congestion and capacity constraints.



Dover general capacity

Dover has 7 berths and enough check-in and yard capacity for normal operations. Port throughput capacity is 12-14,000 vehicles per day. Border control capacity is able to handle existing traffic volume. Port throughput capacity appears to be balanced

Customs Capacity

Customs capacity is currently required for spot checks and security. Proposed customs processes aim to limit the requirement for Customs capacity at Dover.

Vessel capacity

Vessel capacity is highly utilised.

Drewry's Sensitivity Analysis

Check-in capacity at Dover is presently approximately double average daily demand, based on a process time of 2 minutes. Check-in capacity will be sufficient unless process time doubles to 4 minutes.

Present vessel capacity is approximately 4,700 trailers per day. An increase in port time in France would reduce service frequency and capacity. If port time in France rose to 2 hours, capacity would be sufficient; a rise to 3 hours would cause significant congestion and capacity constraints

Embarkation area capacity is presently 12,000 vehicles per day, nearly double average daily demand. If average dwell times rise from 1.5 hours, capacity will fall. A rise to 2.5 hours would lead to congestion.

SUMMARY

Dover Port capacity will be able to cope with average daily demand in the event of 50% increases in process, dwell and French port time. Doubling key process time would lead to congestion and capacity constraints.

Alternative modes and ports: unaccompanied RoRo freight

Switching to unaccompanied trailer freight would be feasible for some cargoes. There is available port capacity and changed customs processes could be accommodated. The primary disadvantages are the lack of vessels available to charter, longer transit times, lower frequency and less flexibility than the current Dover offering.

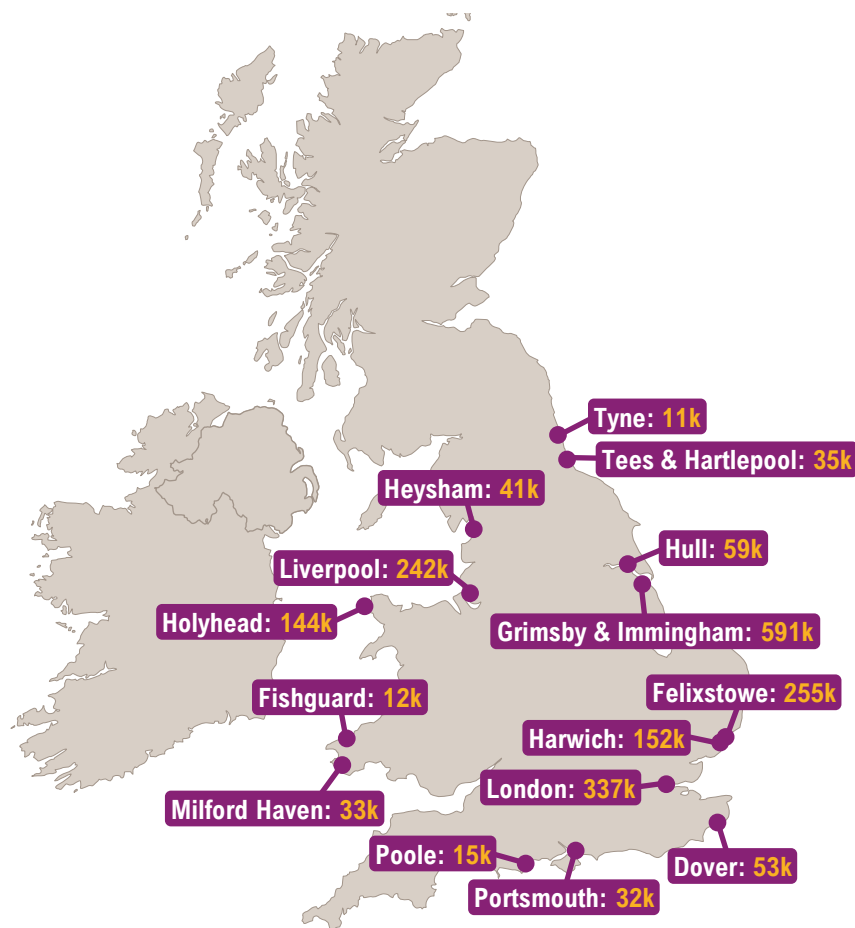
Unaccompanied Freight

- UK ports handled 2 million units of unaccompanied freight to and from the EU in 2017. The main ports are Grimsby & Immingham, London, Felixstowe, Harwich and Liverpool. All these ports have dedicated freight RoRo services operating from them.
- There is the option to switch to cargo currently moved via RoRo to unaccompanied freight, if Dover capacity becomes constrained.

Key factors

- Alternative ports close to Dover have some spare capacity
- Lack of a liquid RoRo charter market, there are very few RoRo freight vessels available which could be used to handle the additional volume.
- Longer voyages would reduce vessel productivity
- Longer transit time with less flexibility and frequency than current Dover offering
- Most ports could not handle Dover ferries
- Supply chains would need to be re-designed, making adjustments for longer transit time and reduced service frequency. Work carried out for the Port of Dover estimates that no more than 20% of present volume could be switched.
- Allows for increased customs checks if trailer is not collected straight from vessel
- Need to invest in additional trailers and trucks
- Additional port capacity would be limited

UK Ports Handling Unaccompanied Freight (2017 K Units)



Source: Drewry & DfT

Alternative modes and ports: short sea containers

Switching to short sea containers would be feasible for some cargoes. There is available port capacity, changed customs processes could be accommodated, there is liquid charter market with availability of vessels. The primary disadvantages are the additional door to door transit time and lower frequency in comparison to the door to door option currently offered via Dover.

Short sea containers

- Currently there are approximately 3.5 million TEU of containers moving to and from UK ports to other EU (including deep sea transshipment feeder volumes)
- There is the option to switch cargo currently moved via RoRo to short sea containers, if Dover capacity becomes constrained.

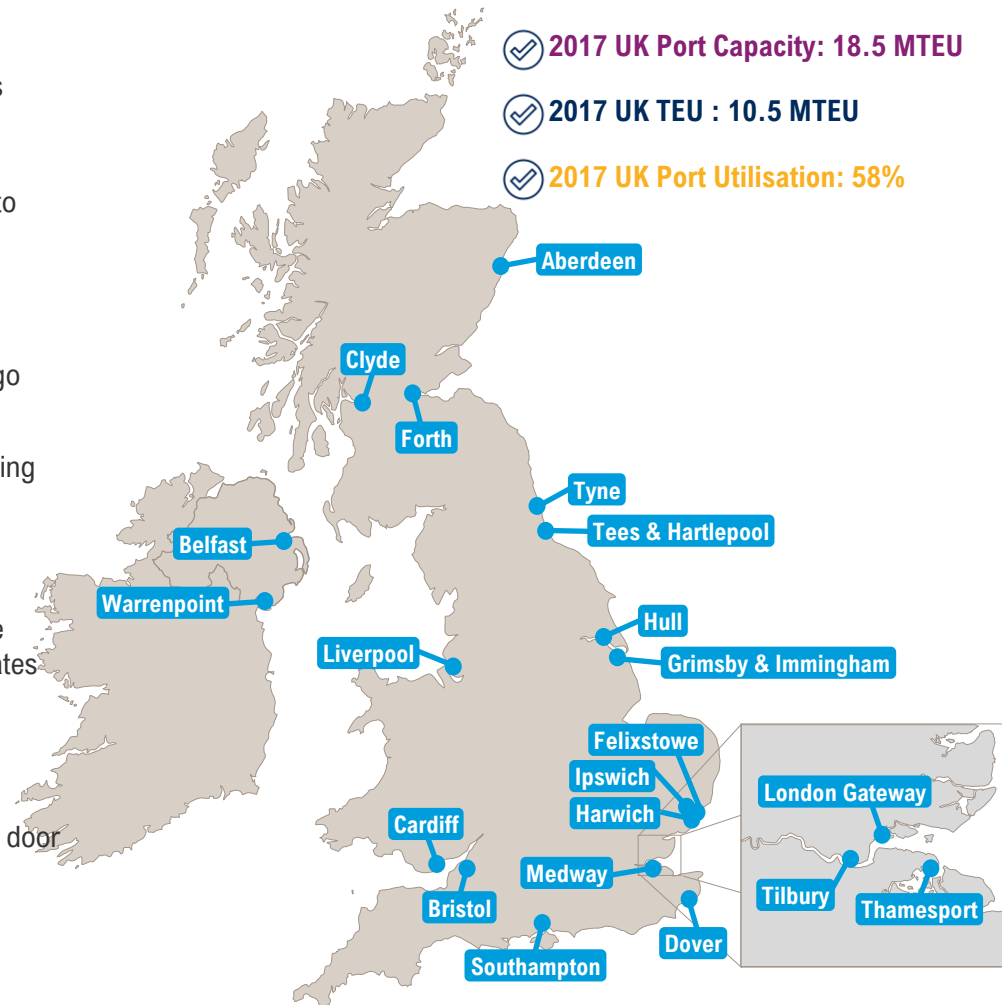
Key factors

- There is available container port capacity to accommodate cargo
- There is berth capacity to accommodate additional vessel calls
- There is a liquid charter market for small container ships, offering lines access to the market
- Existing third country customs processes (follow current international standards)
- Supply chains would have to be reengineered to accommodate routing changes. Work carried out for the Port of Dover estimates that no more than 20% of present volume could be switched.
- Earlier supply chain planning would be required
- Inventory would have to increase due to additional transit time
- Lower service frequency compared to the current 'fast door to door' option' offered by Dover

✓ 2017 UK Port Capacity: 18.5 MTEU

✓ 2017 UK TEU : 10.5 MTEU

✓ 2017 UK Port Utilisation: 58%



Source: Drewry

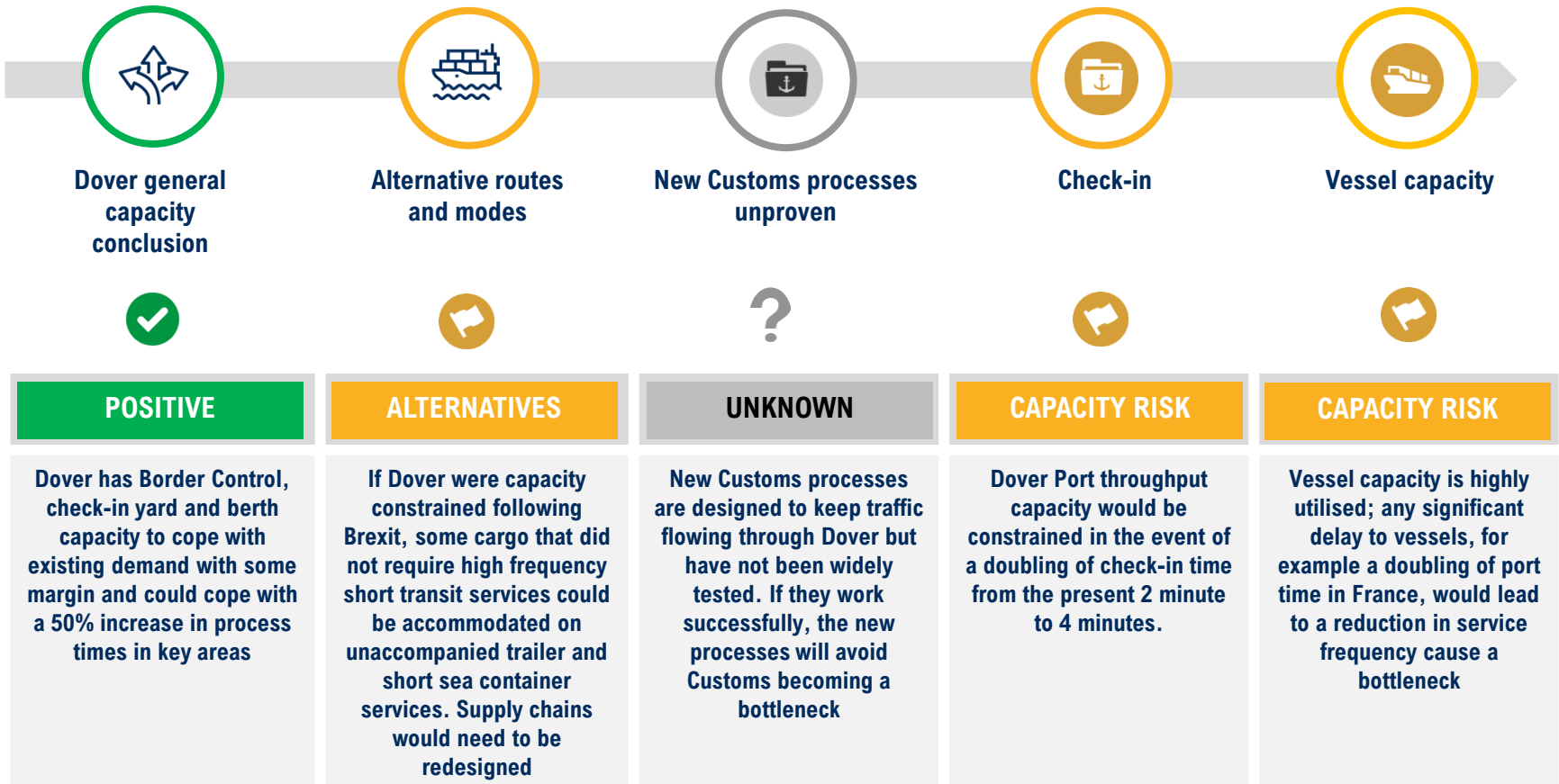
Summary

Topic	Key Conclusion
UK RoRo Market	<p>On departure from the EU, the UK's RoRo ports may have reduced throughput capacity as a result of customs checks; freight may therefore need to be rerouted and modes may need to change.</p> <p>In 2017 UK ports handled 10.6 million units of RoRo traffic to and from other EU countries. Freight (accompanied and unaccompanied combined) accounted for 55% of total UK/Other EU RoRo traffic. The top 10 UK ports handling RoRo units to and from EU accounted for 90% of total traffic in 2017. Dover is by the far the largest port, accounting for 46% of total traffic and 49% of freight traffic moved to and from EU countries.</p> <p>The top 10 RoRo ports in the UK connect to Continental Europe and Ireland with a total of 21 different route options. There are 10 operators active on these routes. P&O Ferries has operations on 5 routes and DFDS on 5 routes, both of which operate from Dover</p> <p>Combined volumes with Dover and the Channel Tunnel in 2017 were 4.2 million trailers of freight and 21.8 million passengers.</p>
Dover	<p>Dover is the UK leading port for the movement of RoRo volumes to and from other EU countries. In 2017 it handled 4.8 million units of traffic. Dover's freight traffic is 60% of the total volume through the port; 59 % of total freight is accompanied cargo.</p> <p>Combined, in 2017, P&O Ferries and DFDS handled 11.7 million passengers, 2.1million cars and 2.6m trailers. Combined vessel utilisation from Dover/EU was 75%, of which freight utilisation was 55%. Utilisation of vessels is supported by efficient port operations with Dover providing sufficient berth, yard, vehicle processing and customs capacity (this is also required at Calais and Dunkirk).</p>
Customs	<p>Currently, RoRo traffic movement between the UK and rest of the EU is not subject to customs processes. From 2300 on 29th March, both imports and exports will be subject to customs processes and require the completion of Fiscal and Safety and Security Declarations. The effectiveness and efficiency of the new processes and systems is not known.</p>
Capacity	<p>The throughput capacity of a RoRo port is determined by vessel capacity, berth capacity, yard capacity, regulatory processing and check-in capacity. Whichever is the bottleneck sets port capacity. Dover has 7 berths and enough check-in and yard capacity for normal operations. Port throughput capacity is 12-14,000 vehicles per day. Border control capacity is able to handle existing traffic volume. Customs capacity is currently required for spot checks and security. Proposed customs processes aim to limit the requirement for Customs capacity at Dover. Vessel capacity is highly utilised. Dover port capacity is sufficient to handle normal operations; the capacity of various elements appears well balanced. Vessel capacity is presently the limiting factor. The port can cope with 50% increases in process, dwell and French port time, although traffic peaks would need to be managed; doubling would led to significant congestion and capacity constraints.</p>
Modal Switch	<p>Switching to unaccompanied freight would be feasible for some cargoes. There is available port capacity and customs processes could be accommodated. The primary disadvantages are the lack of vessels available to charter, longer transit times, lower frequency and less flexibility than the current Dover offering.</p> <p>Switching to short sea containers would be feasible for some cargoes. There is available port capacity, customs processes could be accommodated, there is liquid charter market with availability of vessels. The primary disadvantages are the additional door to door transit time and lower frequency in comparison to the door to door option currently offered via Dover.</p> <p>Work carried out for the Port of Dover estimated that no more than 20% of existing Dover volume could feasibly switch to other routes.</p>

Conclusion

SUMMARY

Port of Dover could cope with 50% increases in process, dwell and French port time, although traffic peaks would need to be managed; doubling would lead to significant congestion and capacity constraints. Alternative modes could accommodate some overflow cargo. Supply chains would need to be redesigned.



For more information visit:

<https://www.drewry.co.uk/about-us>

Or contact us at:

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