



GLOBAL VALUE CHAINS

Global Interconnectedness of the Shipbuilding Industry

*OECD Working Party 6
Workshop*

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For more information on the database see: <http://oe.cd/tiva> or contact:

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Overview

1. Details about the database (TiVA)
2. Goal of the paper
3. Global Interconnectedness of Shipbuilding
 - i. Country comparison
 - ii. Differences in product mix
 - iii. Country studies on sourcing patterns
4. Conclusion



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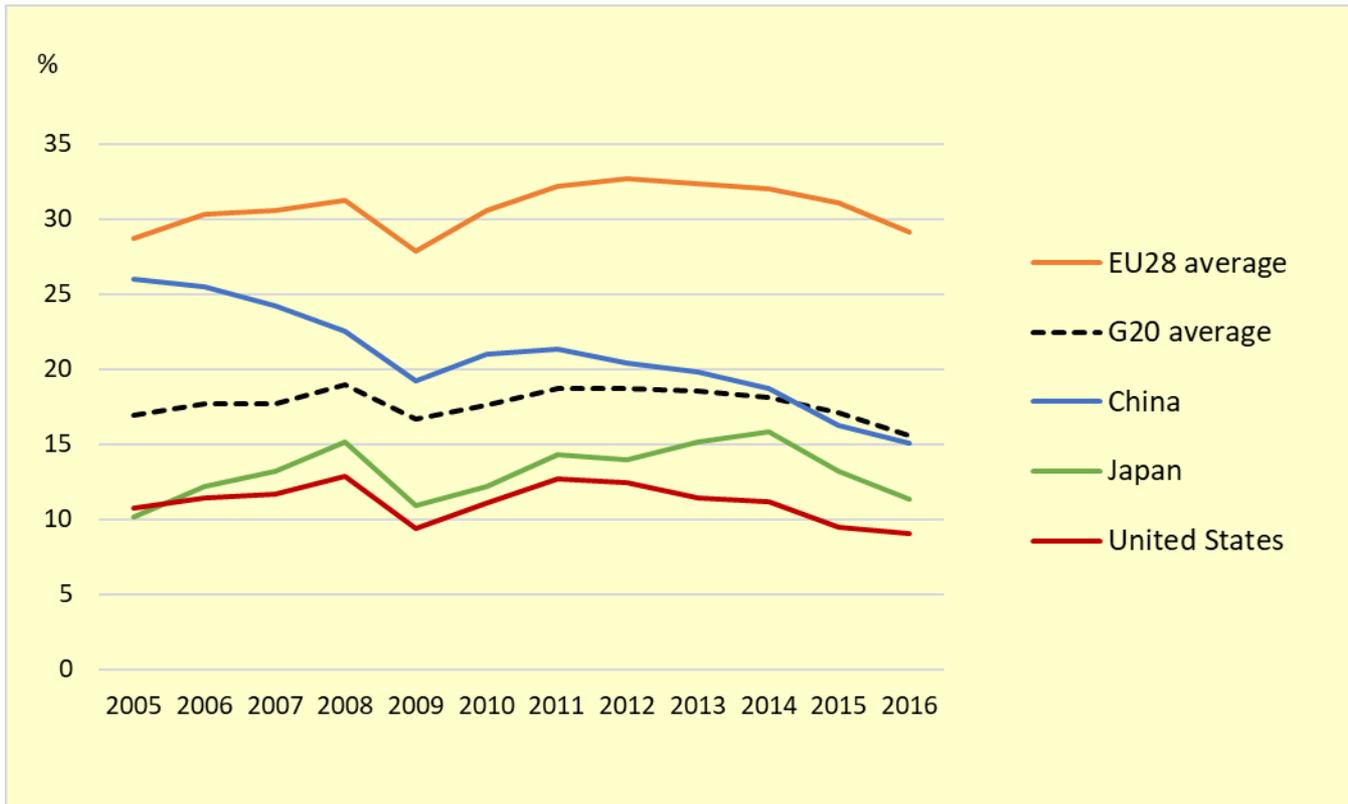
OECD database on Trade-in-Value Added – new release

- Release date: 6th December
- Core indicators on OECD.STAT
 - 64 economies
 - 36 industries
 - Core years: 2005 to 2015 + preliminary estimates for 2016
- Supporting material
 - Country notes (initially for G20 countries and then extended to all OECD countries and key partners)
 - Updated policy briefs (STI and TAD)
 - Metadata and documentation detailing the methodology



Slowdown in global fragmentation of production ...

Foreign value added share of gross exports (EXGR_FVASH)



Averages are un-weighted averages of countries' EXGR_FVASH



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Goal of the paper

- Understanding the **value generation** of shipbuilding from a domestic and global perspective,
- Illustrating the **differences in sourcing patterns** of major shipbuilding economies,
- Providing a basis for a better understanding of **differences in costs for intermediate inputs.**



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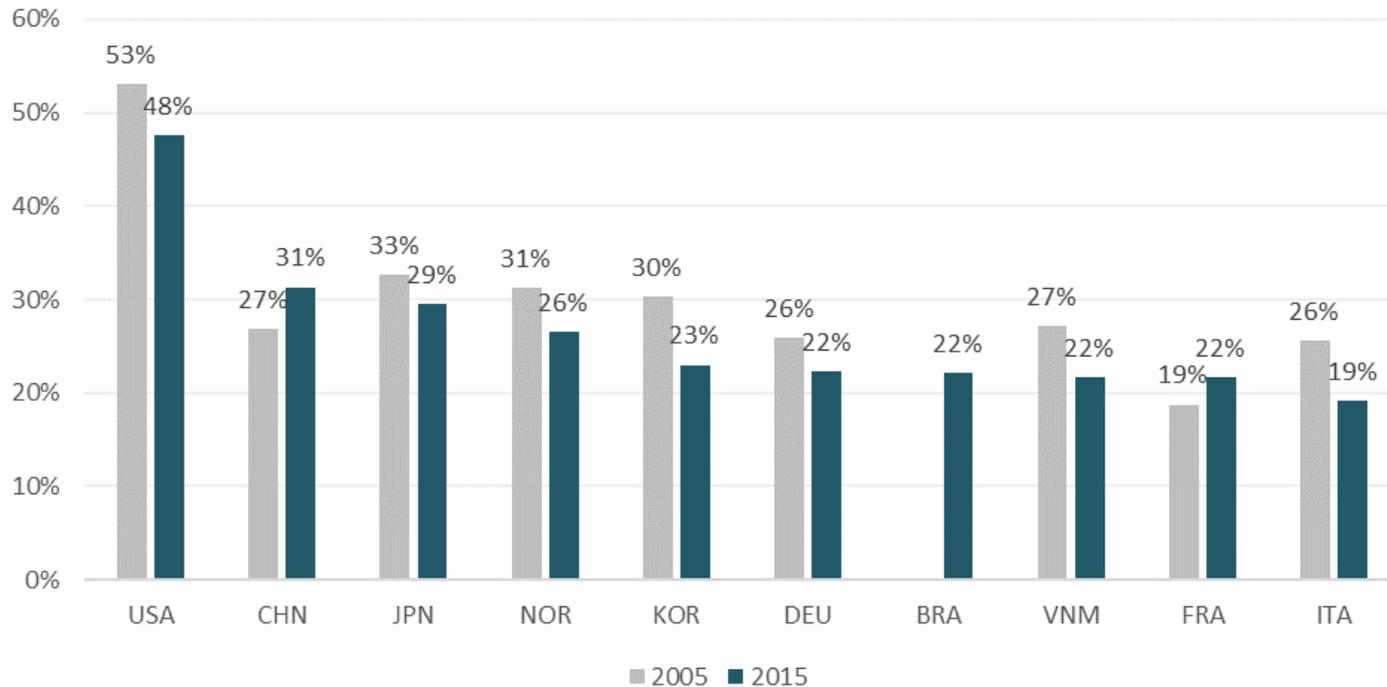
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Around 70% of final ship value is sourced from upstream industries

Ratio of Shipbuilding value added to final output

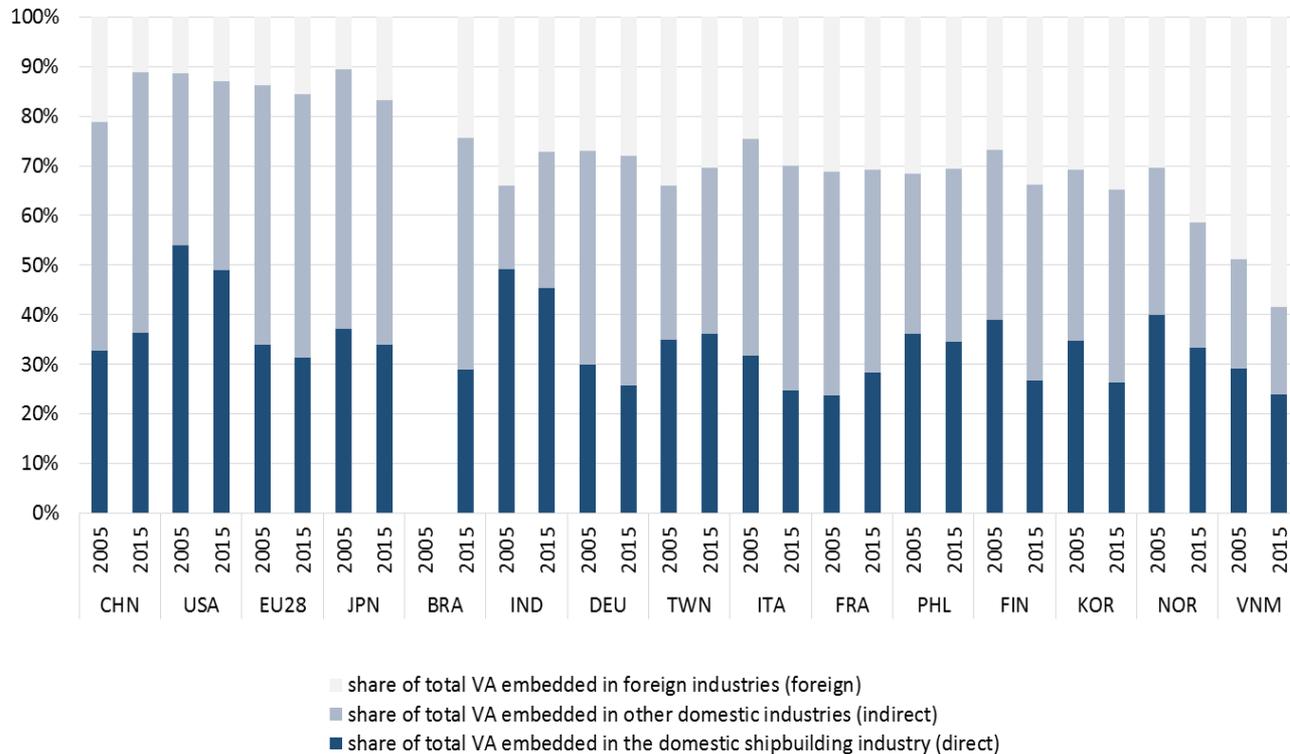


Note: Results for Brazil are omitted for the year 2005 because of data limitations
Source: TiVA, 2018.



Majority of value added embodied in shipbuilding is generated domestically

Shares of value added content embodied in ship manufacturing

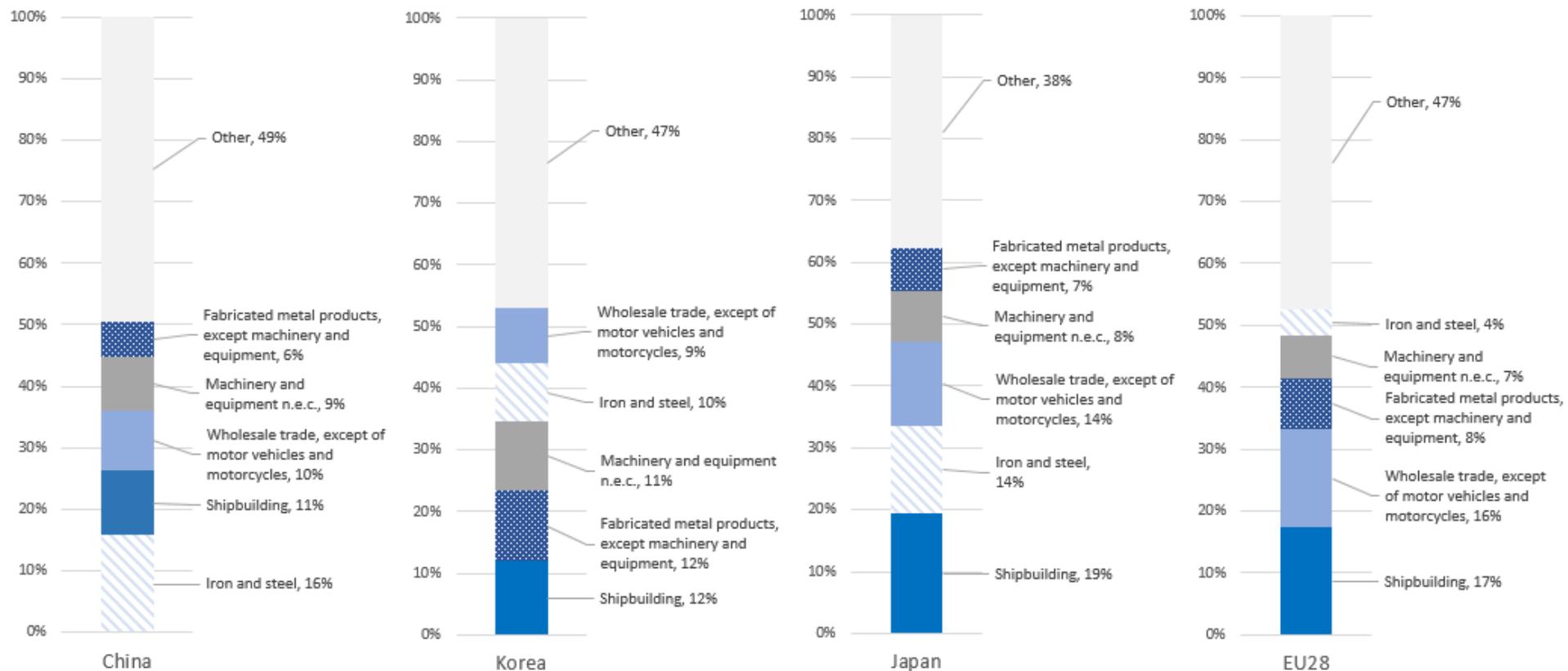


Note: Economies are sorted left to right according to their share of domestic value added contribution to total value added in 2015, Brazilian values for 2005 are omitted because of data limitations
 Source: OECD Trade-in Value Added (2018).



Variation in cost shares of intermediate inputs across countries

Cost shares of intermediate inputs, by economy 2015



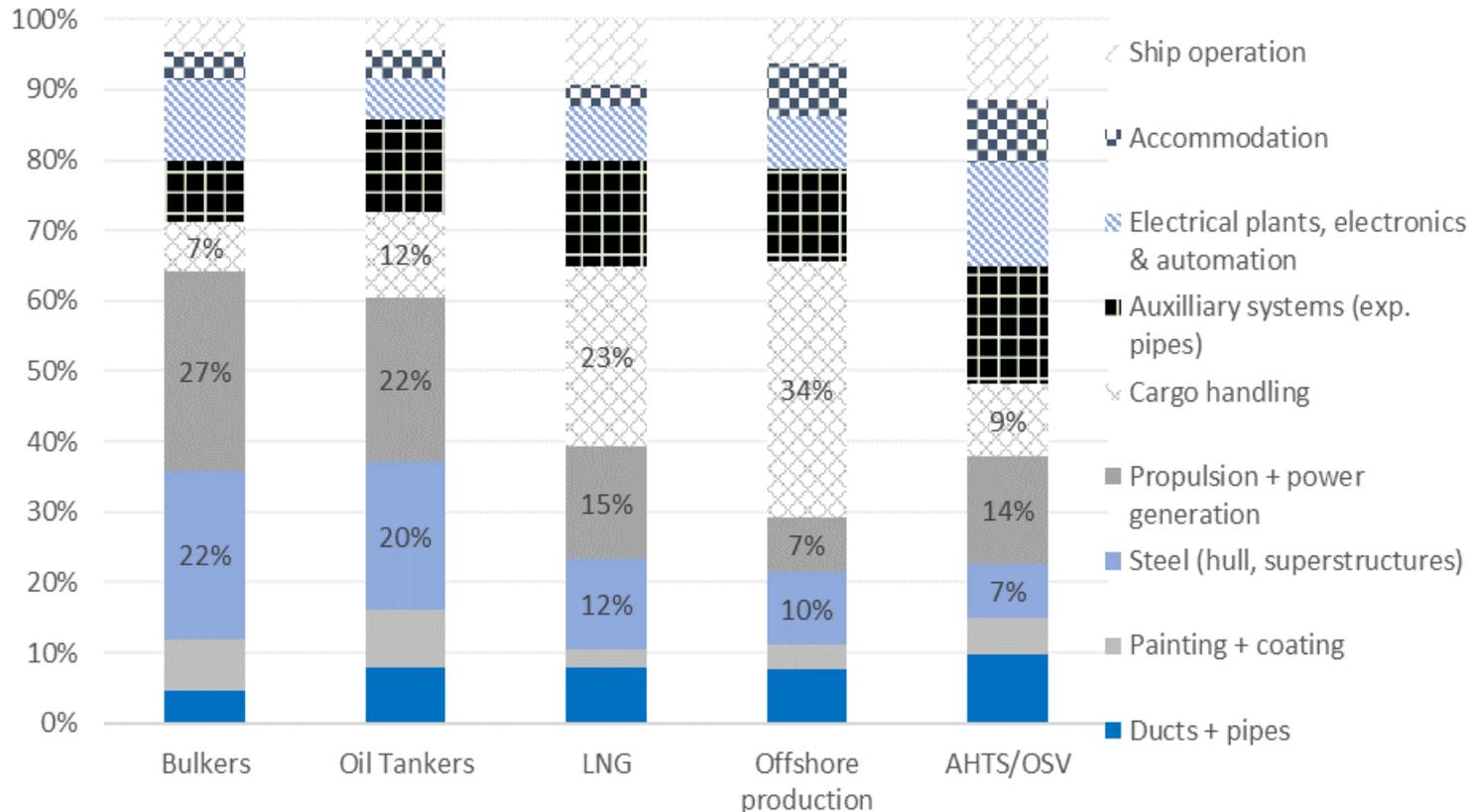
Note: n.e.c. stands for “not elsewhere classified”, only the five biggest intermediate inputs are disaggregated.

Source: OECD Trade-in Value Added (2018).



Difference in product mix may change need for certain intermediate inputs

Cost shares of materials and equipment/systems by ship types



Note: The graph has been reproduced from Brun and Frederick (2017_[20]). The authors of the report calculated the shares from (European Commission, 2014_[22]) which is based on purchase forecasts for 2013-17. The “materials” category consists of steel, painting/coating, and pipes + ducts. The “equipment/systems” category consists of all other physical input categories.

“AHTS” stands for Anchor Handling Tug Supply vessels, and “OSV” for Offshore Support Vessel

Source: Brun and Frederick (2017_[20])



Where do countries source their intermediate inputs for shipbuilding from?

- **China**
 - Rather self-sufficient and **inward-focused** in procurement activity.
- **Japan**
 - Generally **inward-focused** with some minor inputs imported.
- **Korea**
 - **Globally integrated** and strong user of foreign intermediate inputs.
- **EU**
 - **Oriented towards foreign markets** for certain intermediate inputs.



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Concluding remarks

- Overview of the position of different economies' shipbuilding industries in global value chains.
 - Highlighting **differences in sourcing patterns** and production activity.
 - Basis for a better understanding of **differences in ship production costs and prices.**
- Results underscore that **government measures affecting a specific sector** in one country can have **implications for upstream or downstream sectors of other economies.**
- **Ideas for future research:** Understanding the factors driving domestic value generation, differences in sourcing patterns and costs.



THANK YOU

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OECD Directorate for Science, Technology and Innovation.



Notes on data on shipbuilding industry (ISIC 3011 and 3012)

3011 - Building of ships and floating structures

This class includes the building of ships, except vessels for sports or recreation, and the construction of floating structures.

This class includes:

- building of commercial vessels:
 - passenger vessels, ferry boats, cargo ships, tankers, tugs etc.

- building of warships

- building of fishing boats and fish-processing factory vessels

This class also includes:

- building of hovercraft (except recreation-type hovercraft)
- construction of drilling platforms, floating or submersible
- construction of floating structures:
 - floating docks, pontoons, coffer-dams, floating landing stages, buoys, floating tanks, barges, lighters, floating cranes, non-recreational inflatable rafts etc.
- manufacture of sections for ships and floating structures

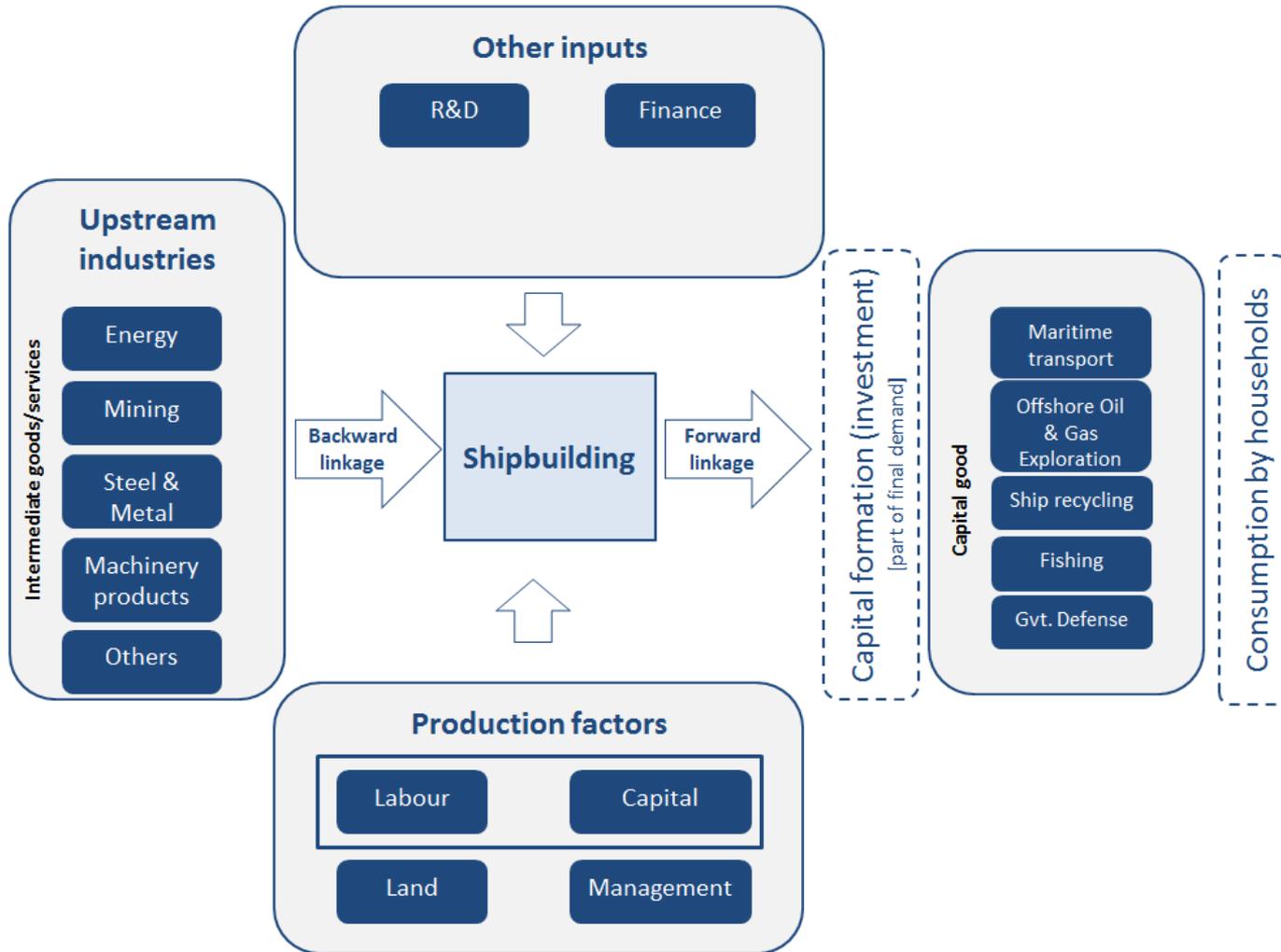
3012 - Building of pleasure and sporting boats

This class includes:

- manufacture of inflatable boats and rafts
- building of sailboats with or without auxiliary motor
- building of motor boats
- building of recreation-type hovercraft
- manufacture of personal watercraft
- manufacture of other pleasure and sporting boats:
 - canoes, kayaks, rowing boats, skiffs



Simplified shipbuilding supply chain



OECD Data explanation: Gross fixed capital formation (GFCF) is defined as the acquisition (including purchases of new or second-hand assets) and creation of assets by producers for their own use, minus disposals of produced fixed assets. The relevant assets relate to products that are intended for use in the production of other goods and services for a period of more than a year.



Inter-Country Input-Output (ICIO) structure

<i>Inter-country I-O</i> <i>at basic prices</i>		Intermediate demand						Final consumption and capital formation			Direct purchases by non-residents			Output
		Cou A		Cou B		Cou C		Cou A	Cou B	Cou C	Cou A	Cou B	Cou C	
		SB	Steel	Ind 1	Ind 2	Ind 1	Ind 2							
Cou A	SB													X(A1)
	Steel													X(A2)
Cou B	SB													X(B1)
	Steel													X(B2)
Cou C	Ind 1													X(C1)
	Ind 2													X(C2)
<i>Taxes less subsidies ..</i>		<i>... on intermediate products</i>						<i>... on final products</i>						
		NTZA1	NTZA2	NTZB1	NTZB2	NTZC1	NTZC2	FA	FB	FC	FA	FB	FC	
Value-added		V(A1)	V(A2)	V(B1)	V(B2)	V(C1)	V(C2)							
Output		X(A1)	X(A2)	X(B1)	X(B2)	X(C1)	X(C2)							

Key:

Cross-border flows of intermediate goods and services
Domestic flows of intermediate goods and services

Cross-border flows of final goods and services
Domestic flows of final goods and services