



# Ethiopia's Transport Service Sector: *Measuring its Value Chains and Exploiting its Potential*

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# Outline

- Background
- Overview of Sectorial Classification of Services;
- Freight Transportation and Value Chains;
- Importance of Transport Services in Ethiopia;
- Djibouti-Ethiopia Corridor (with Examples-target value chain);
- Methodologies to Analyse Transport Services in RVCs/GVCs Trade;
- Policy Implications – *Some key take aways*

## Background: “Servicification”



- Today the service sector has not only found its way onto the development agenda, but it has also become an agenda in its own right;
- It plays an increasingly central role in the actual operation of RVCs/GVCs – emergency of “Trade in Tasks”;
- More than 70 percent of global services imports are intermediate services;
- “Backbone Services” - namely, transport, ICT, finance, construction services make the largest contribution to SDGs/Agenda 2063;
- The importance of the services sector in the African/Ethiopian economy has grown considerably in recent years;
- Categorized as “other business services” are the main service exports of the region; and,
- A diversified and competitive services sector is not only important in itself but also for enhancing the productive efficiency of other sectors.



# Sectorial Classification of Services



- The term services sector encapsulates a wide range of economic activities;
- 12 services sectors under WTO's classification;
- GATS depends on the territorial presence of the supplier & consumer;
- Categorized as either "embodied" or "embedded" services; and,
- Driven by factors both endogenous and exogenous.

Transport is a fundamental sector for and of the economy;

Efficient transport services and infrastructure are vital to exploiting the economic strengths of all regions of the Country, to supporting the internal market and growth, and to enabling economic and social cohesion;

They also influence trade competitiveness, as the availability, price, and quality of transport services have strong implications on production processes and the choice of trading partners;

Transport represent a sizable share of costs/expenditure, the provision of more efficient transport services can affect citizens & businesses tangibly.



# Contemporary Production Systems

- Production and consumption
  - Core components of economic systems;
  - Both interrelated through supply / demand relationships.
  - Basic economic rationale:
    - What is being consumed has to be produced;
    - What is being produced has to be consumed;
    - They tend to have separate locations.
  - Market Failure:
    - Lack of supply or not enough demand.
  - Realization of production and consumption:
    - Cannot occur without **flows of freight** between locations of production and markets.
    - Therefore, transport chains are being integrated into production systems.



# International Transportation

- **Transportation infrastructure:**

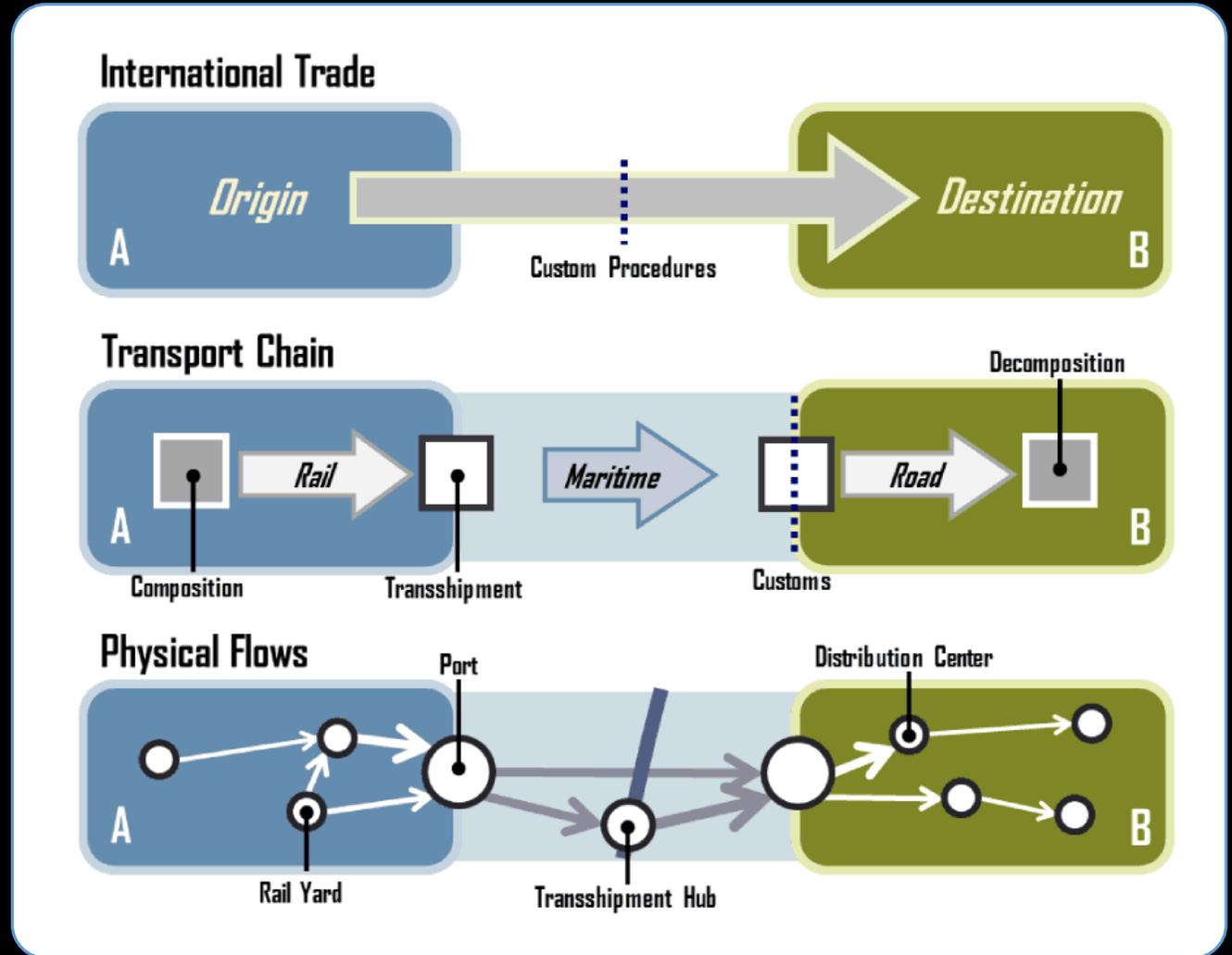
- Physical infrastructures such as terminals, vehicles and networks;
- Either promote or inhibit inflows.

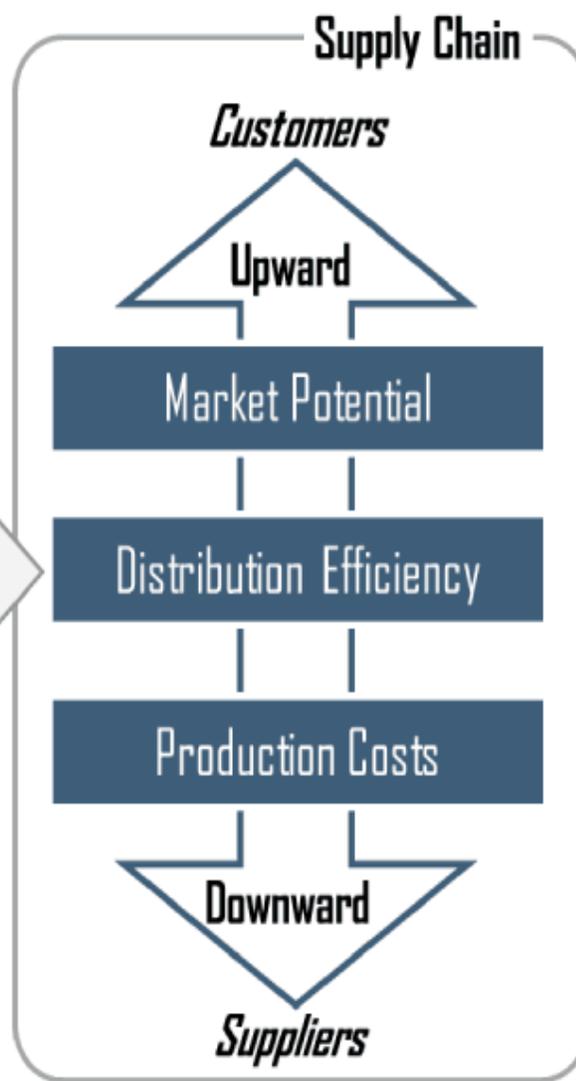
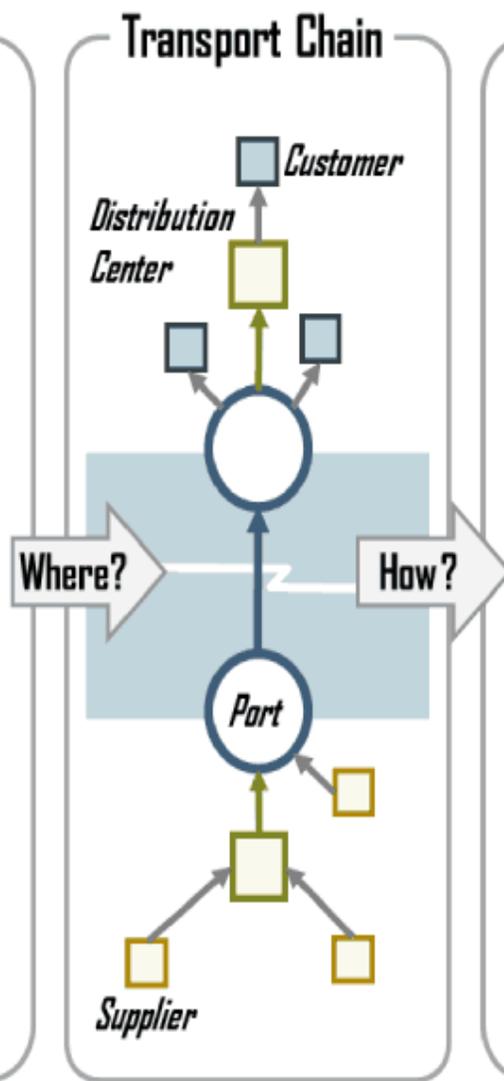
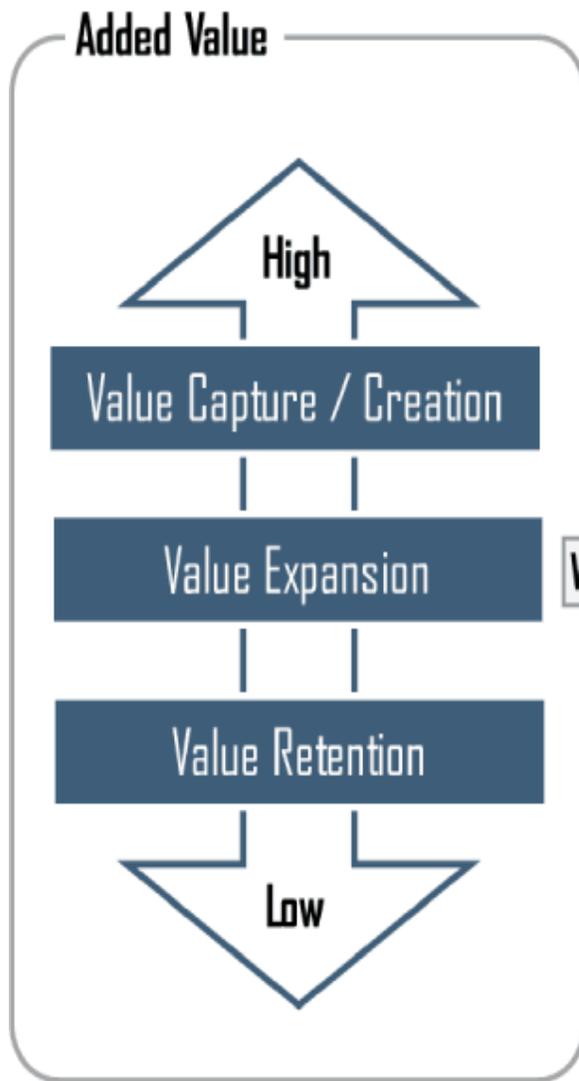
- **Transportation services:**

- Services involved in the international circulation of freight and people (Warehousing, logistics, finance, modes, insurance and marketing).

- **Transactional environment:**

- Legal, political, financial and cultural setting.



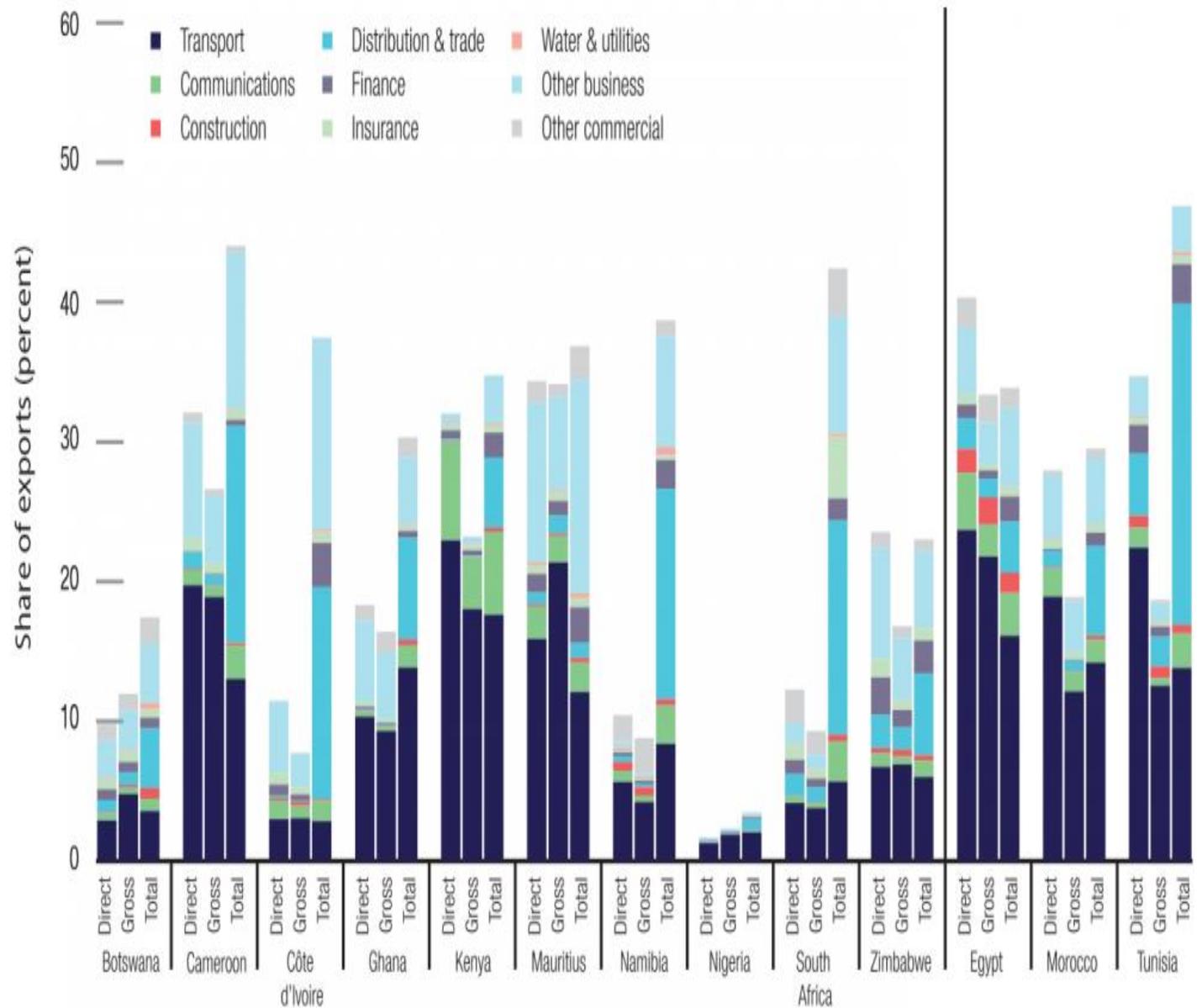


## Key elements to any VC analysis

- Mapping the Chain;
- Identifying governance structures within the Chain;
- Exploiting areas of upgrading within the Chain; and,
- Assessing benefits in Chain participation.

- Globalization, trade and freight transportation are interrelated and concern a mobility scale that spans nations and often continents;
- Service exports from other African countries are increasing;
- Transport services comprise all modes of transport & logistics (cargo handling, agency services ...Maritime, Road, Aviation, Inland waterways, Railways...etc.);
- The growth of the amount of freight being traded as well as a great variety of origins and destinations promotes the importance of international/regional transportation as a fundamental element supporting the global economy;
- Consequently, transportation is often referred to as an enabling factor that is not necessarily the cause of international trade, but as a condition without which globalization could not have occurred.
- Freight transportation offers a whole spectrum of services catering to cost, time and reliability priorities, and has consequently taken an increasingly important role within value chains.

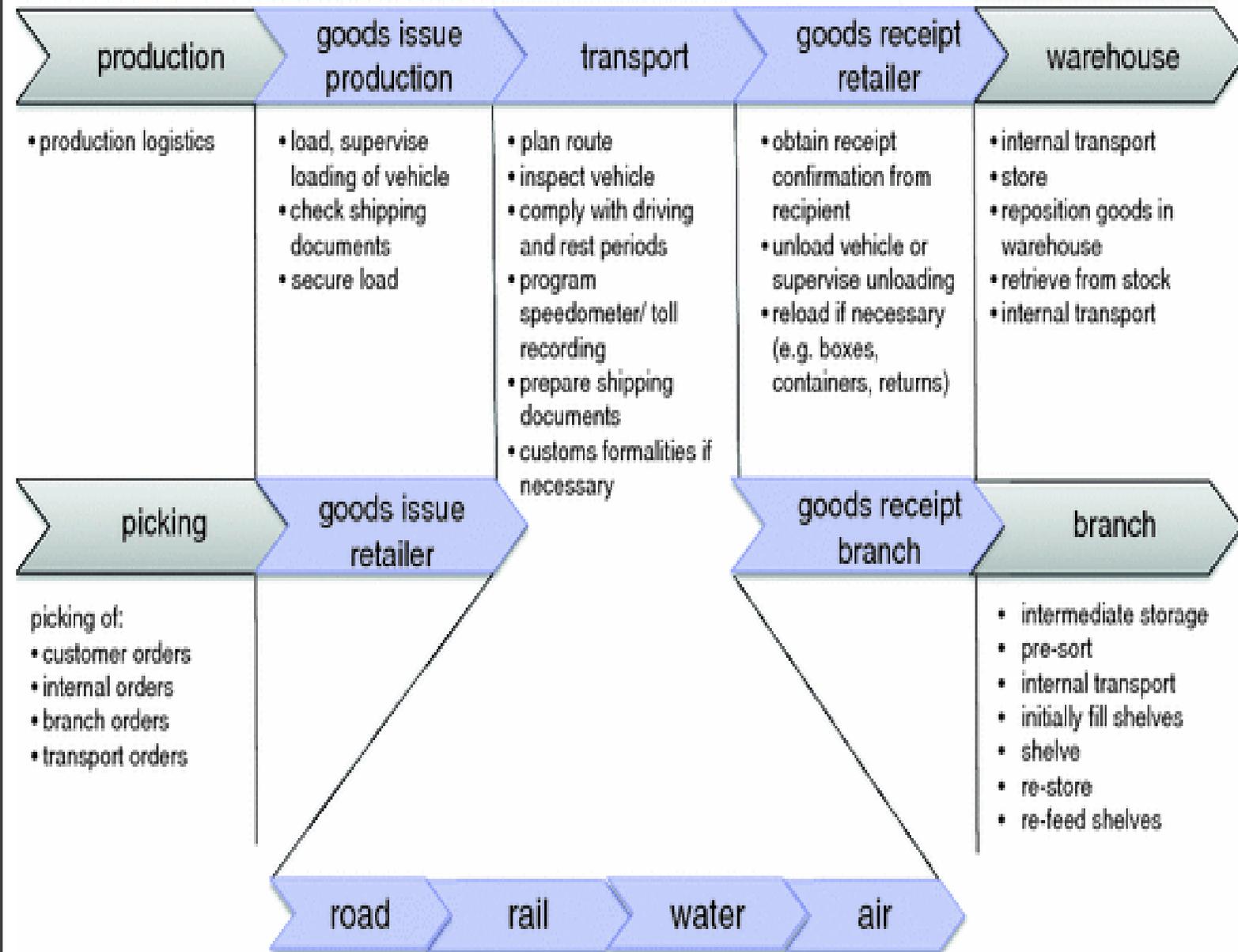
Percent contribution to value-added in total service exports



Source: World Bank's Export Value Added Database, <http://data.worldbank.org/data-catalog/export-value-added>.

# Freight transport and value chains – some examples

- **Agriculture commodity chains** – fertilizer and equipment as inputs, coffee, horticulture, meat, cereals etc. as outputs:
  - Modes - Trucks, rail-trucks, cargo-ships, cargo-planes;
- **Energy commodity chains** – Petrol, Oil, natural gas:
  - Modes - Trucks, rail-trucks, pipeline
- **Manufacturing industry** – movement of finished and semi-finished products:
  - Modes - depends on cargo type – perishable/non perishable, bulk/containerized;
- **Construction industry** – movement of cement, sand, bricks...etc.
  - Modes – trucks, rail-trucks



■ Typical activities of a truck driver  
■ Potential activities of a truck driver



# The transport services in Ethiopia: significance, trends and emerging issues

- **Economy grew by 7.7 percent in 2017/18** (IMF,2018):
  - Good agriculture harvests;
  - Growth in services & transportation sectors;
  - Manufacturing Exports.
- **Transport Sector:**
  - Transport & Communication (23% GDP at Constant Market Prices);
  - It has been playing a crucial role in reducing transaction cost;
  - As part of the service sub-sector, it contributes its own share to the GDP;
  - 90% of freight transportation both in the import & export sectors;
  - Trade logistics very expensive and uncompetitive (30% TVE).

- The GoE has taken several steps to improve the sector:

- As of the end of FY 2017/18, Ethiopia had 120,171 kilometers (74,670 miles) of all-weather roads – about 32% of the required road network in the country;
- It has invested Birr 142 billion (\$7.1 billion) in road construction projects over the past 16 years, out of which \$5.4 billion (77 %) has been financed by internal sources;
- The government has also invested heavily in the railways;
- Inland dry ports (2/5);
- Doing Business Initiative; and,
- Air Cargo Dev't.





- The Ethiopia-Djibouti **Corridor** is the key conduit for trade;
- Dominant gateway for the country with over 95% of Ethiopia's import & export;
- Currently very small volumes of Ethiopian traffic are using the other ports in the region: Port Sudan, Berbera and Mombasa;
- One of the key factors that has been identified as undermining international competitiveness is poor trade logistics;
- High costs because of imbalances and seasonality in traffic flows;

# Example (1) : Coffee Value Chain



## Examples (2): Horticulture Industry



- Agriculture as the main branch of Ethiopian economy, has 50 % share in the GDP;
- Share of agriculture in employment is 85%;
- About 75% of Ethiopia's industry is engaged in processing of farm products;
- Ethiopia has managed to greatly transform its horticulture sector with a span of 15 years;
- Through attracting potential investors, the country has generated close to \$ 300 million from export (EHAI,2018);
- Hike in airfreight costs and insufficient air cargo space and refrigeration facilities.

## Example (3): Leather Footwear Manufacturing Firms

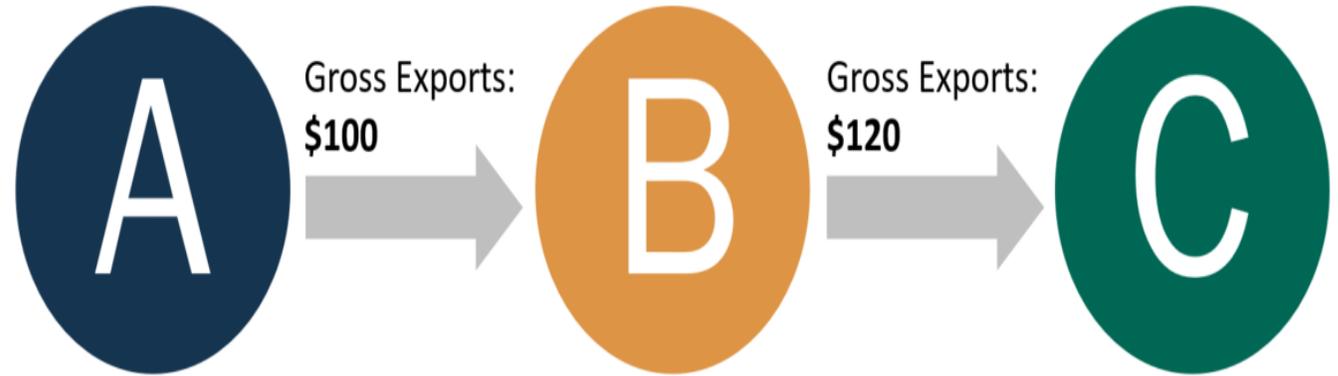


- It is one of the unique sectors which have the advantage of the both value addition and export potential;
- Exporting its products to more than 60 countries; some of the major destinations include Italy, UK and China;
- Orders that are given to some of the footwear firms are not completed on due date because of different poor logistics practices and challenges (delay at ports, and low productivity).

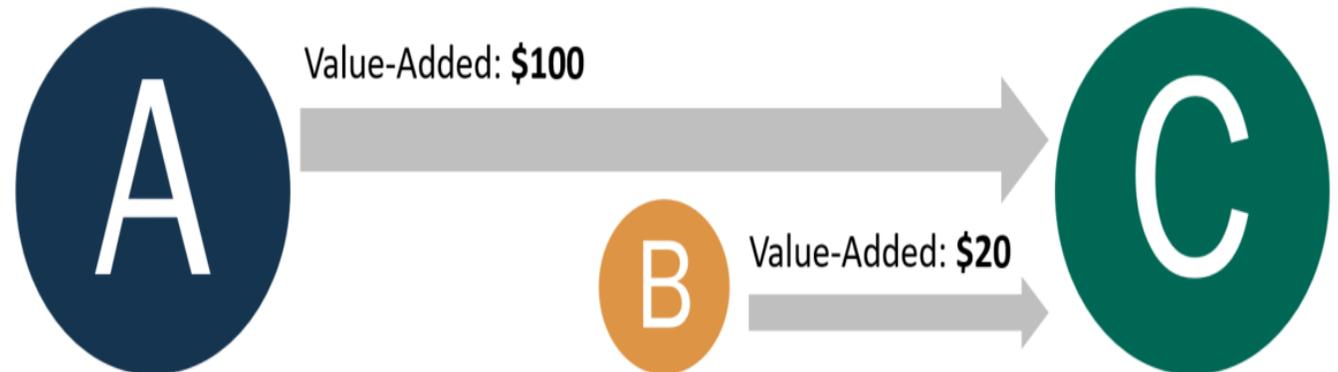
## Methodologies to Analyse Services in RVC/GVC Trade

- While services are very important in GVCs, there are several challenges in accounting their value;
- Analysis of RVCs & GVCs in Africa is in the very early stages, esp. for services;
- Two broad techniques exist:
  - Quantitative Methods – TiVA database & associated indicators;
  - Qualitative Methods:
    - Enterprise Questionnaires & Case Study;
    - Firm-level Survey.

### Example 1: Gross Trade Flows



### Example 2: Value-Added Trade Flows



Source: Adapted from OECD – Trade in Value Added

# Approach



Approach		Level of detail	Measurement type
<p><b>1. Case Study:</b> geographical decomposition of a product value into the components and services used for its production; Eg.: iPhone</p>	<p>Bottom up approach</p>  <p>Top down approach</p>	Product level	Not applicable
<p><b>2. Trade Statistics:</b> Focus on the role of intermediates in foreign trade; Eg.: Estimation of vertical specialization or shares/components of parts in total trade.</p>		Product/sectorial/product group level	Direct measurement (based on raw reported)
<p><b>3. Input-output tables:</b> combining national accounts with trade statistics</p>		Sectoral level (aggregated)	Indirect measurement (estimates)

# Statistical Challenges

- Extending TiVA database coverage: countries, (informal) sectors, years and indicators;
- Improving data quality:
  - Strange data points like negative values for final demand (no economic model);
  - Trade statistics required for the construction of II-O tables (bilateral trade in services, inconsistencies of “Mirror” merchandise trade flows);
  - Standardization and development of national I-O tables and Supply-Use tables;
- Further methodological developments;
- Therefore, other methodologies may be better suited to getting at different aspects of value chains, thus, need to be considering for using qualitative approach.



# GVC Case studies: a synopsis

Auxiliary Service	In house services	outsourced	Characteristics of outsourced suppliers	Bundled /unbundled	Notes
<p>a. Cargo-handling service</p> <p>b. Storage and warehouse services</p> <p>c. Freight transport agency services</p>			<ul style="list-style-type: none"> <li>Arm's length or corporate relationships</li> <li>Type, name, location, size and ownership</li> </ul>		
Listing of auxiliary service inputs	Top service inputs in terms of contributions to total costs	Observations on technology and scope for innovation	Number of jobs involved in supplying the identified service	"	"

## Interview Template

- Name of firm
- Data on firm
  - Line of business
  - Annual Turnover
  - Markets in which firm operates: Domestic and exports (foreign) sales
  - No of employees
 

Globally:	Males	females
In plant/factory/office under study	males	females
- Specification of product/service being studied:
- Description of entire value chain including the location of production stages and input and output for each stage of production:
- Identification of the production stage and location at which the value chain begins and ends in the analysis:
- Total number of jobs in the identified value chain
  - Permanent
  - Temporary
- Identifying the service inputs and how they are supplied (starting from the beginning of the chain)

# Beyond TiVA: Key Consideration

The key objectives of the structured interview is to obtain a comprehensive picture of a firm's use of services;

The survey is ultimately an input into a case study, so the idea is to use it to elicit interesting and useful information;

Interviewers should aim to interview a mix of firms based on size, activity, and gender of owner / senior manager. However, strict representation in the statistical sense will not be possible for a limited scope project;

Output is a narrative case study built up from the firm's responses and the interviewer's general research on the value chain;

Always to match the right research question and methodology;

Firm's willingness to cooperate with the research & make information available;

# Data Sources

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- ▶ **There are essentially three commonly used data sources on TiVA:**
  - ▶ OECD-WTO TiVA: 63 countries and 34 sectors, but only South Africa among African countries.
  - ▶ WIOD: 43 countries and 56 sectors, no African countries. Private initiative based primarily on EU data. Data to 2014. Raw data only.
  - ▶ Eora: 190 countries, 26 sectors (harmonized version). Good coverage in Africa.
    - ▶ Data to 2015. Raw data + indicators prepared by UNCTAD.
- ▶ **For quantitative work on TiVA in Africa, Eora is the only source available.**
  - ▶ Some work is required to make the data “talk”;
  - ▶ UNCTAD’s indicators are extremely useful.
- ▶ **However, there are some important caveats:**
  - ▶ Essentially all of the trade in services data is estimated or imputed.
  - ▶ IO tables are computed infrequently, so there is again a strong role for imputation.
  - ▶ Eora has rarely been used in published research, unlike the other two datasets, and so has not fully passed peer review.
  - ▶ One view is that aggregate results are likely fairly reliable, but that sectoral data are less so.
  - ▶ By all means work with these data, but important to acknowledge the huge uncertainty that exists around estimates.

# Application Example.....

1

		Kenya				Ethiopia				Nigeria			
		Transport	Finance	Agriculture	Mining	Transport	Finance	Agriculture	Mining	Transport	Finance	Agriculture	Mining
Kenya	Transport	1146.33	181.3	188.16	289.18	313.71	193.49	304.35	260.26	268.41	207.37	214.06	249.03
	Finance	237.96	951.85	168.8	326.76	211.54	186.11	268.33	310.31	277.91	230.31	187.3	212.77
	Agriculture	330.81	341.91	1387.33	435.82	407.48	234.8	349.1	337.75	338.86	291.16	336.58	347.59
	Mining	421.18	309.68	330.64	1705.48	427.1	412.49	479.99	458.68	492.81	274.99	440.42	317.31
Ethiopia	Transport	219.23	182.39	222.91	211.17	914.83	154.91	239.29	228.17	196.2	151.37	184.11	229.55
	Finance	1227.14	1098.41	1112.56	1256.01	1205.32	4556.53	1027.81	1358.1	1218.66	936.21	1170.62	1228.4
	Agriculture	85.95	77.49	66.82	115.9	114.48	88.63	355.08	92.59	117.2	69.85	92.91	72.27
	Mining	88.23	93.48	108.45	114.97	91.82	109.34	97.48	454.65	119.2	93	96.07	85.55
Nigeria	Transport	126.51	137.01	145.55	176.82	174.03	156.23	171.17	175.35	624.65	105.48	119.27	178.97
	Finance	379.71	209.53	279.99	276.93	360.86	218.79	349.86	299.36	371.6	1050.83	245.89	259.43
	Agriculture	344.14	256.5	332.66	323.86	343.16	330.93	380.1	397.97	337.16	207.14	1423.4	343.66
	Mining	708.8	591.46	637.14	545.09	736.66	530.73	588.44	648.83	571.33	409.28	685.35	2708.45

# Application Example.....

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# Result for Ethiopia

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Gross Export	242590.4313
DVA	206342.3211
FVA	36248.11021
Backward Linkages	14.94210221
DVX	46221.41388
Forward Linkages	19.0531
<b>GVC Participation</b>	<b>0.339953739</b>

# Policy Implications

- Not only participation but also **upgrading** in GVCs is very important;
- Trade policy designed with respect to gross trade flows could have the potential to be **overly restrictive** or even impose costs indirectly on domestic production. TiVA thus provides a supplementary, relevant reference for evaluating the economic effect of trade policies;
- No one size fits all strategy-Links among services and other sectors of the economy; **weak linkages** between transport and other service sector of exports; *Capturing local/regional market*;
- Trade facilitation (in the narrow sense i.e. border procedures) measures are essential to facilitate and complement **private** investment in transport services; PPP
- Infrastructural services often are **regulation-intensive sector**, with significant government participation as owner, regulator, and/or customer; thus, necessitate institutional **capabilities** to design & implement effective domestic regulatory frameworks;
- Transport costs, and even access itself, can be more uncertain for a **landlocked country**;
- In addition to trade policy and facilitation, **investment policy** is another vital factor that determines Ethiopia's capacity to participate in and benefit from global production networks;
- Barriers to trade in services are more **complex** than barriers to trade in goods, thus, better participate at the regional level of infrastructure projects with narrow trade facilitation projects (PIDA/TAH);
- Disaggregating transport service **data** helps in understanding how exactly services contribute to total exports in the country (*policy-relevant & understandable*);
- The successful development of transport services requires the adoption of policies at several levels, and Ethiopia's **specific characteristics** are likely to be strong determinants of R/GVCs participation rate differences comparing with other countries: decompose - *policy and non-policy variables*.

# Resources

## Data:

- Eora raw data: <http://worldmrio.org>. Sign up for a trial account!
- UNCTAD Eora GVC indicators: <http://worldmrio.com/unctadgvc/>.
- TiVA: <https://stats.oecd.org/Index.aspx?DataSetCode=TIVA>

## Reading Materials:

- Aqib Aslam et al. (2017) “Calculating Trade in Value Added.” (IMF), <https://bit.ly/2QTCCDO>

# Possible Questions for Discussion

- Domestic regulations;
- Role of PPP? How to capturing local market?
- Compliance with international standards?
- Good statistical data is somewhat difficult to collect:
  - Data Limitations but there is also data opportunity- Innovative Technologies;
  - How much value does transport services add to the economy;
  - Do Transport services have 'high/low' domestic value added content?;
  - How does transport services compare to the rest of the economy?;
  - Why do we care about analyzing RVCs/GVCs? ;
- Governance structure:
  - Relationship between Transport Authority and Regional Transport Bureaus;



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**Thank you!**

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