The Potential Impact of AfCFTA on Trade in Kenya: A GTAP-HET Analysis

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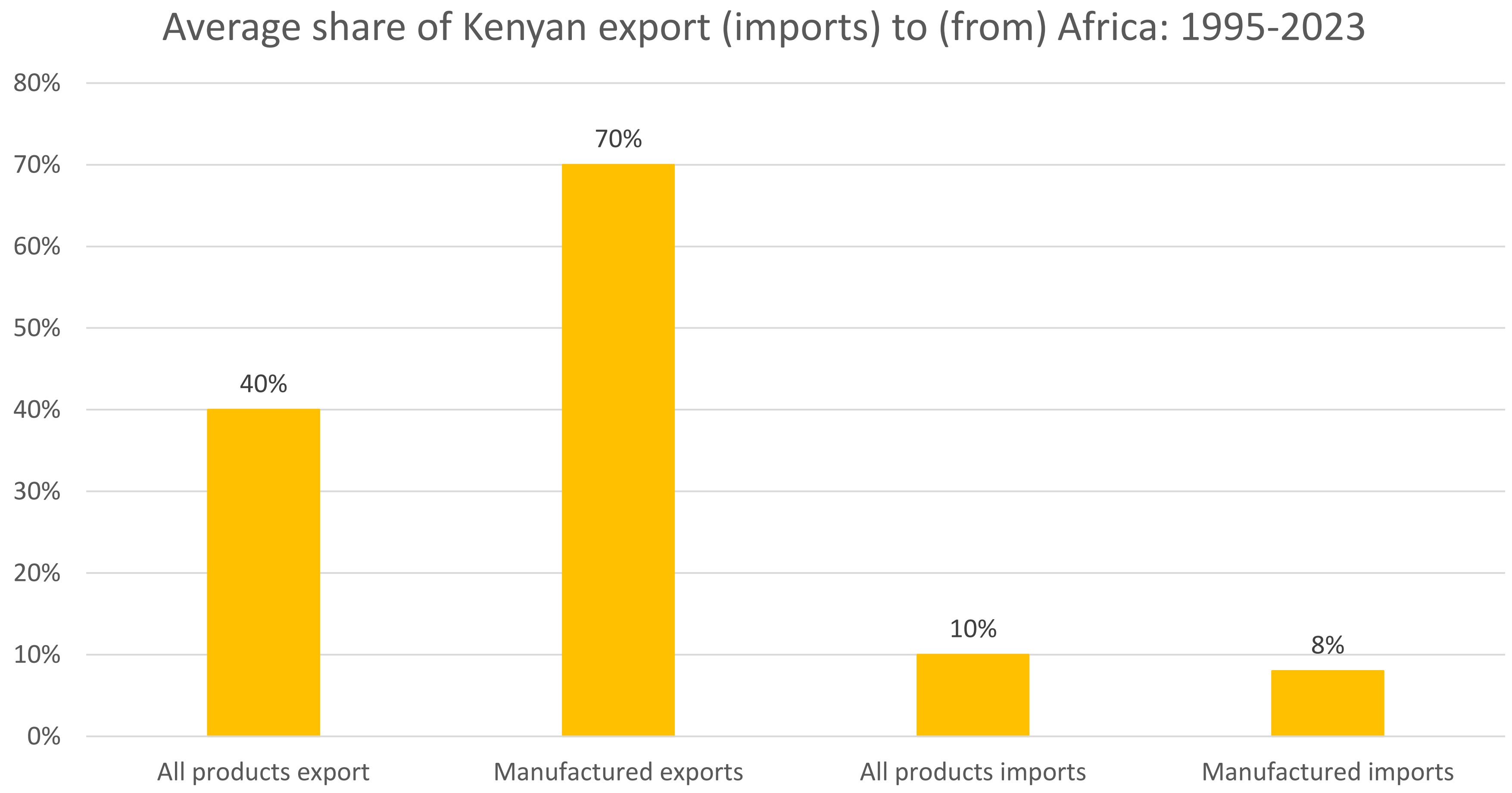
Agenda

- Background
- Model Overview
  - GTAP-HET Model
- Empirical Methodology
  - Power law distribution
  - Global SAM
- Data and Policy Experiment
- Results

Africa is an important export market for Kenya



- In 2023, Number of African countries that were in top 10 Kenya export destinations:
  - All products – 5;
  - Manufactured products – 8

- In 2023, number of African countries that were in top 10 Kenya import origin countries:
  - All products: 2
  - Manufactured products - 2

AfCFTA - Opportunity for Kenya’s Manufacturing sector

- AfCFTA – Launched in 2019; Kenya ratified on May 6, 2018 and deposited the instrument on May 10, 2018.
- Largest agreement by number of signatories – 54 countries.
- A market with combined GDP of $1.3 trillion and a population of 1.2 billion.
- Five areas of focus: Trade in goods and services; investment; intellectual property rights; competition policy; dispute settlement mechanism. Added later: digital trade, and women and youth in trade.
- Aims to progressively eliminate tariffs on intra-African trade.
- **Objective**: Investigate the potential impact of AfCFTA on manufactured output, productivity, and employment.

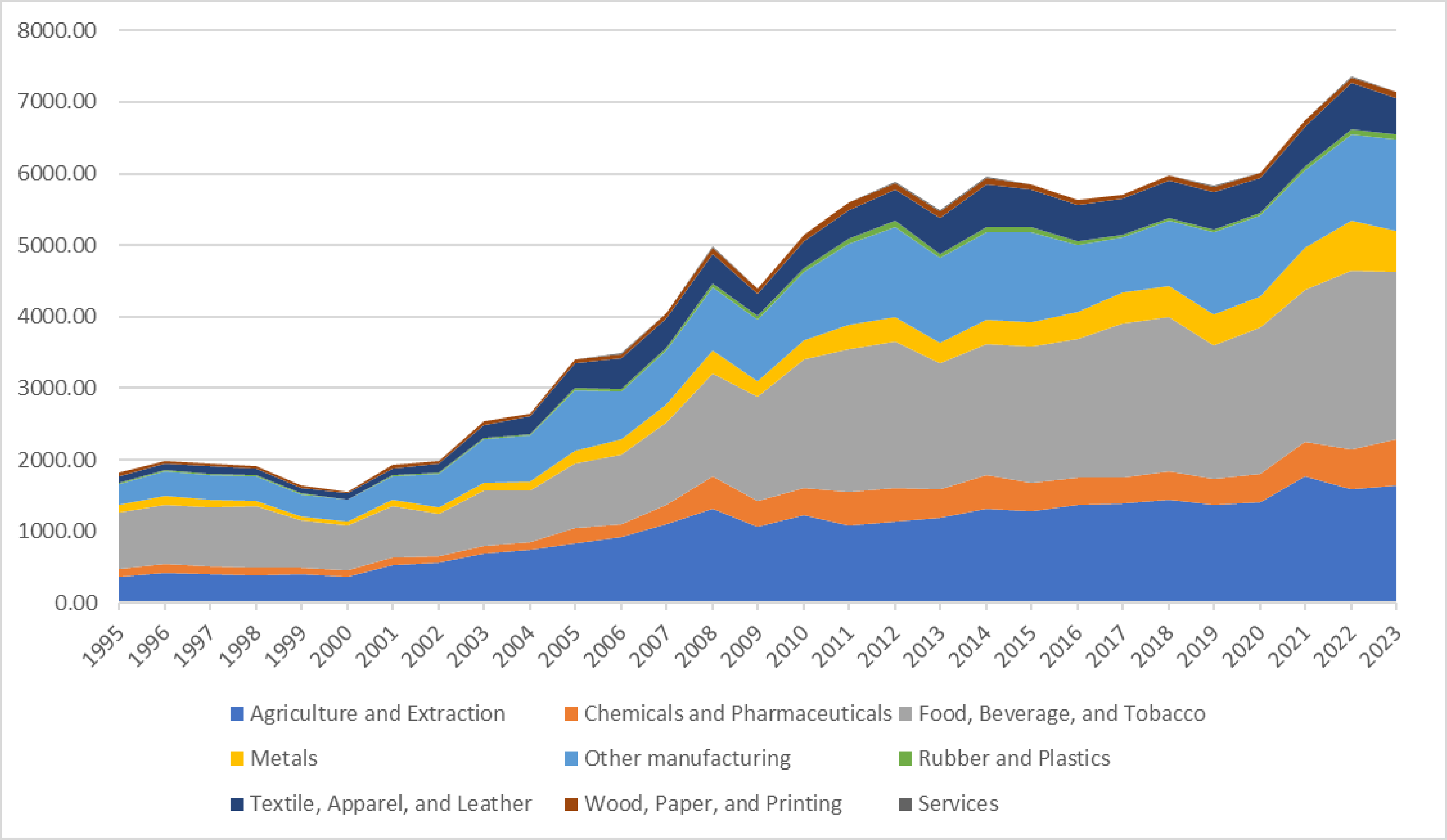
Trade policies in Kenya

- Three phases in trade policies:
  - Import substitution policies in 1960-80 – policies strongly biased against exports
  - Unilateral and multilateral liberalization in 1980 – 2000
  - Investment climate since 2000
- In Kenya, various policy to support the sector exist:
  - Kenya National Trade policy 2017
  - Integrated National Export Development and Promotion Strategy (NEDPS) – exports growth – 25% ; import growth – 0% between 2017 and 2022. Positive trade balance by 2022

Kenya trade structure

- Kenya share of merchandise exports globally – 0.03 % since 1990.
- Share of primary exports in total export from Kenya – 70.7% - 1995 and 65.6 % - 2019.
- Share of primary imports in total import to Kenya – 25.9% - 1995; 33% in 2019.
- Manufactured exports are dominated by low-technology products – 60% of total manufactured export
- African and Europe absorbed 2/3rd of Kenya exports in 2019.
  - Eastern African – 76.11% of Kenya export to Africa;
  - Continental and western Europe – 85.61% of Kenya export to Europe.
- Export growth rate – 3.2% against a target of 25%
- Import growth rate – 5.5% against a target of 0%

Exports by sector in Kenya (USD millions), 1995 - 2023



Source: UNCTADstat database

Model Overview: GTAP-HET

Standard GTAP model

- Perfect competition
- Identical firms and varieties
- Productivity – exogenous
- Intensive margin of trade

GTAP-HET Model

- Monopolistic competition –
  - fixed costs – domestic and export market
  - Scale economies
- Productivity – endogenous
  - Firm self-selection to domestic and export markets
- Heterogenous firms and varieties
- Intensive and extensive margin of trade
  - Firm entry and exit in markets
- Love of variety

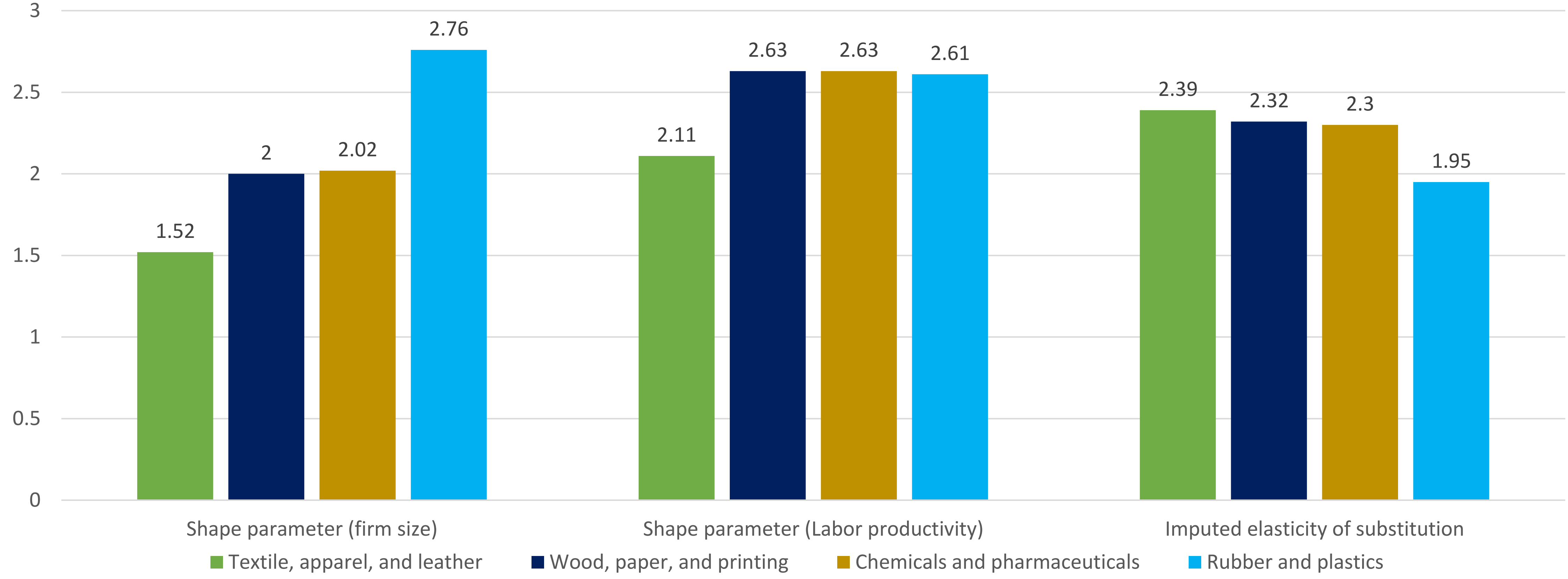
Empirical methodology – GTAP to GTAP-HET

- **Key parameters**: Shape parameter of productivity distribution and elasticity of substitution
- **Steps**: Assumes firm size and productivity are Pareto distributed
  - Estimate the shape parameter for firm size using sales and number of employees.
  - Estimate the shape parameter for firm productivity using labor productivity
  - Impute the values for elasticity of substitution
- Incorporate the key parameters into GTAP.

Data and Policy Experiment

- 2018 Kenya Census of Industrial Production – Key parameters
  - Number of employees and sales per firm in 2017.
  - Industrial classification – ISIC 2
- GTAP database version 11 – Base year - 2017
  - 141 regions – 5 regions: Kenya, Northern Africa and Western Africa (NAWA); Central Africa and Southern Africa (CASA); East Africa; and Rest of the World.
  - 65 sectors – 9 sectors: Agriculture and extraction; services; food, beverage, and tobacco; textile, apparel, and leather; wood, paper, and printing; chemical and pharmaceuticals; rubber and plastics; metal; and other manufacturing
  - Heterogenous sectors: textile, apparel, and leather; wood, paper, and printing; chemical and pharmaceuticals; and rubber and plastics.
- **Policy experiment**: 100 percent reduction in tariffs among African countries in all sectors due to AfCFTA.

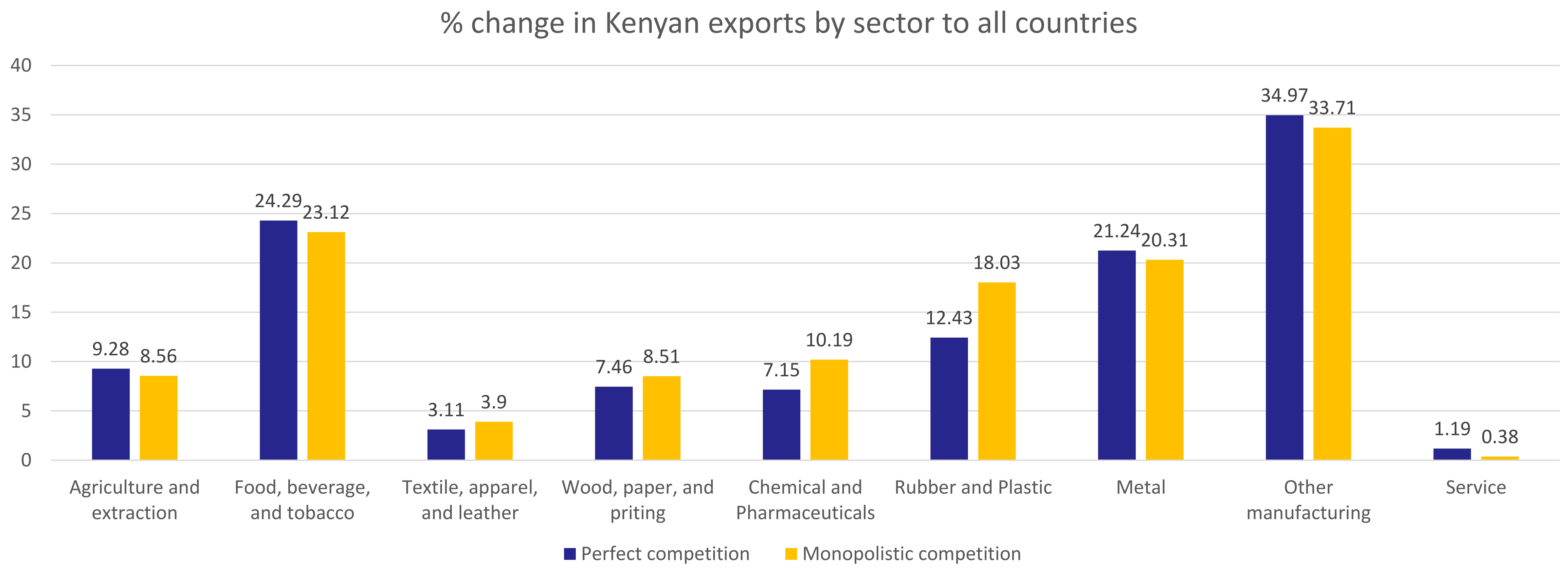
Results: Shape parameters and elasticity of substitution



- Firm size – highest in rubber and plastic – less heterogeneous – similar number of employees.
- Labor productivity – highest in wood, paper, and printing and chemicals and pharmaceuticals – less heterogeneous.
- Elasticity of substitution – highest for textile, apparel, and leather – more price responsive.

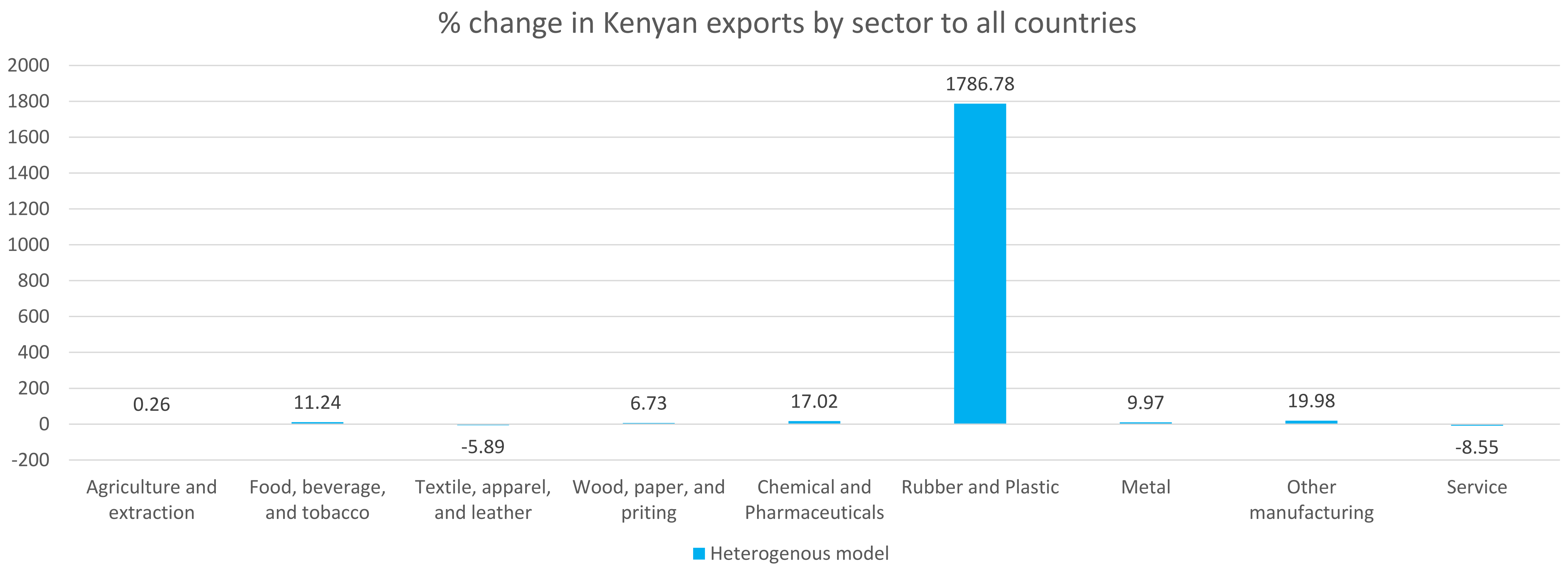
Results: AfCFTA will increase exports in Kenya

- % change in total exports: **perfect competition** – 8.17%; **monopolistic competition** – 7.7%; **heterogeneous firms** – 20.44%

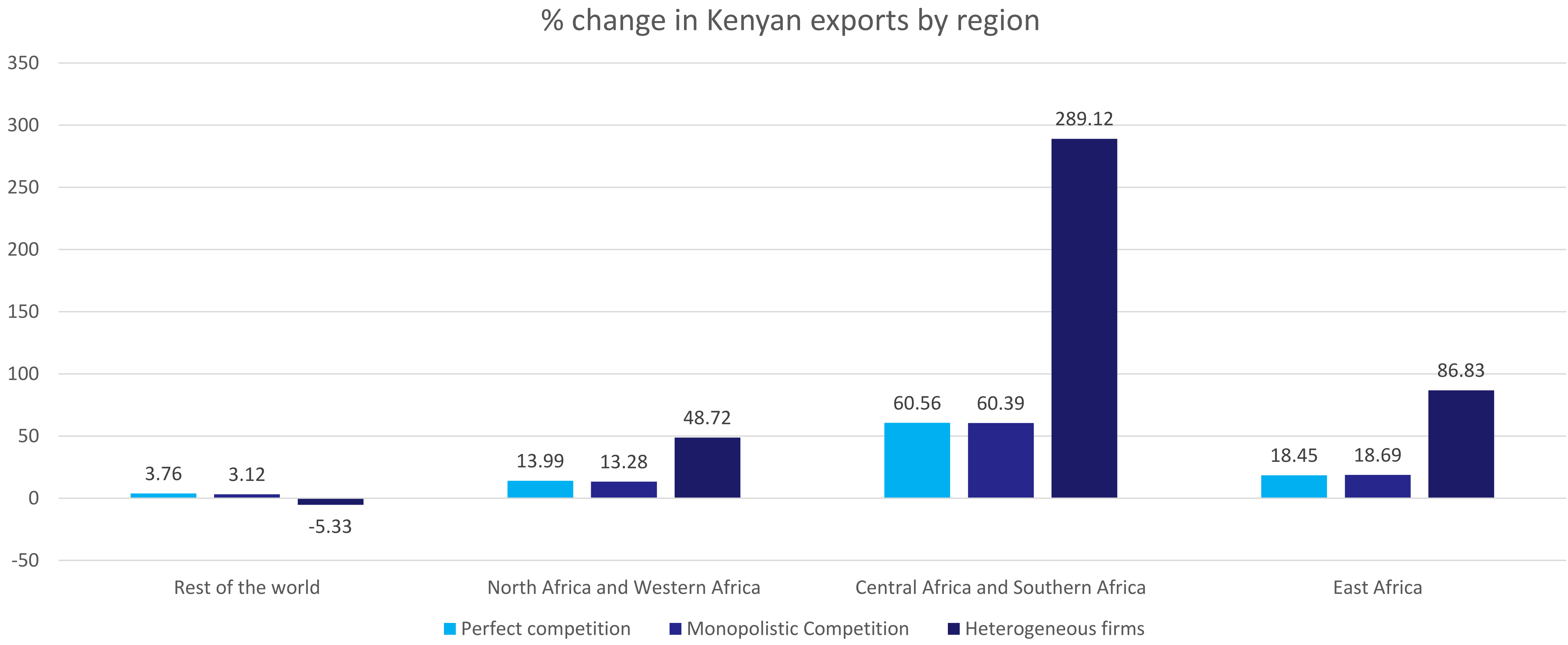


Results: Heterogeneous firm model, exports

- % change in total exports: **perfect competition** – 8.17%; **monopolistic competition** – 7.7%; **heterogeneous firms** – 20.44%

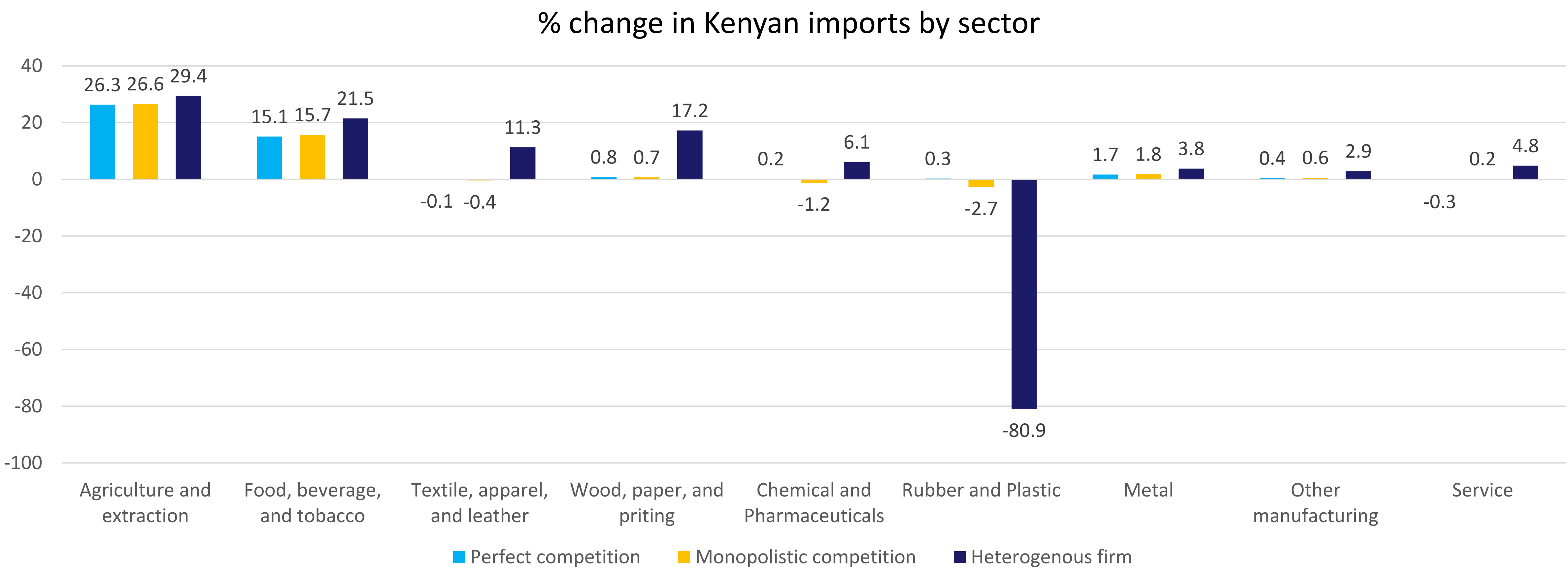


Results: Kenyan exports to all regions will increase

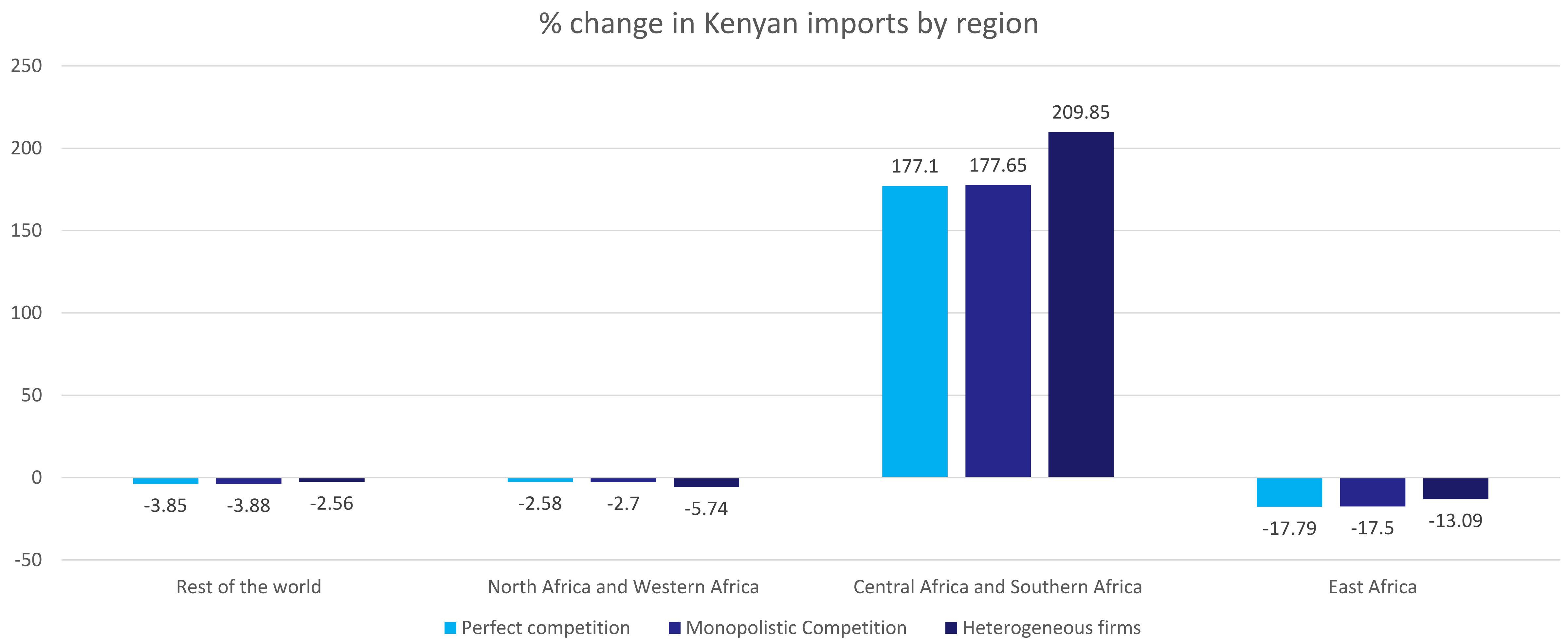


Results: AfCFTA will increase imports

- % change in total imports: **perfect competition** – 3.42%; **monopolistic competition** – 3.42%; **heterogeneous firms** – 6.18%



Results: Imports changes by region



Conclusions

- Significant increase in Kenyan exports – Food, beverage, and tobacco, chemical and pharmaceutical, rubber and plastic and other manufacturing sector benefit most.
- Kenyan imports will marginally increase – higher competition in agriculture and extraction and food, beverage, and tobacco sectors. Government support to allow adjustment.
- Kenya will expand its trade with Central Africa and Southern Africa.