Integrating Business and Trade Data to Profile Goods Exporting Firms
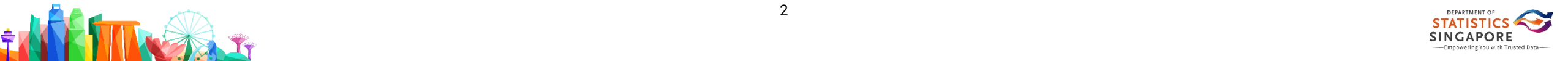
Cui Huimin
Singapore Department of Singapore

7th Meeting of the UN Committee of Experts on Business and Trade Statistics (UNCEBTS)
24 - 26 September 2024

www.singstat.gov.sg

Outline

- Introduction

- International Trade Statistics

- Business Statistics by Industry

- Statistical Business Register (SBR)

- Unique Business Identifier

- Integrating Business and Trade data

- Profiling Goods Exporting Firms in Singapore

- Learning Points

Introduction

- The Singapore Department of Statistics (DOS) is the national statistical authority responsible for official statistics on the Singapore economy and population.

- Official statistics are collected and compiled by the Singapore Department of Statistics (DOS) as well as Research and Statistics Units (RSUs) in the Government, based on various administrative and survey data.

    - International trade statistics are compiled for merchandise trade and trade in services.

    - Business statistics by industry are compiled to reflect the industrial structure and financial performance.

- Statistical Business Register (SBR) is managed by DOS and serves as the backbone for the data collection and compilation of business & economic statistics and supports data integration for in-depth analysis.

International Merchandise Trade Statistics

- Singapore's international merchandise trade statistics (IMTS) are compiled by the Enterprise Singapore based on administrative data from the Singapore Customs.

- International merchandise trade statistics are compiled based on the following international standards:

  - International Merchandise Trade Statistics 2010 (IMTS 2010)

  - Standard International Trade Classification (SITC), Revision 4.1

- The following key indicators are available in the IMTS :

  - Exports and imports of merchandise

  - Exports and imports of merchandise by trading partner

  - Exports and imports of merchandise by commodity

DEPARTMENT OF
STATISTICS
SINGAPORE
—Empowering You with Trusted Data—

International Trade in Services Statistics

- Singapore's international trade in services statistics are compiled by DOS using both survey data and administrative data.

- International trade in services statistics are compiled based on the principles and guidelines set out in the:

  - United Nations Manual on Statistics of International Trade in Services 2010 (MSITS 2010)

  - International Monetary Fund's Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6).

- The following key indicators on international trade in services are available:

  - Exports and imports of services

  - Exports and imports of services by trading partner

  - Exports and imports by services categories

  - Exports and imports of services by extended balance of payments services classification (EBOPS 2010)

DEPARTMENT OF
STATISTICS
SINGAPORE
Empowering You with Trusted Data

Business Statistics by Industry

- Business statistics by industry are compiled by DOS and Research and Statistics Units (RSUs) in the Government. E.g., manufacturing statistics are compiled by the RSU of the Economic Development Board (EDB) while services statistics are compiled by DOS.

- The primary data sources for business statistics are the industry surveys that collect information on the performance of establishments engaged in the respective economic activities.

- The principal statistics are compiled to measure the performance for various manufacturing and services industries, such as

  - Number of establishments

  - Operating receipts

  - Operating expenditures

  - Value added

DEPARTMENT OF
STATISTICS
SINGAPORE
—Empowering You with Trusted Data—

Statistical Business Register (SBR)

- The SBR covers all entities registered in Singapore and serves as the foundational statistical database for the compilation of business and economic statistics.

- SBR's role in statistical production includes:

  - Providing survey frame production used in sample selections for business surveys

  - Facilitating the compilation of business indicators

  - Supporting data integration for in-depth analysis

- Administrative data are the primary sources in the SBR updating, supplemented by statistical surveys conducted by DOS and RSUs. DOS also explores the use of new data sources e.g. big data in updating the SBR.

- The SBR management is based on the principles and guidelines set out in the United Nations Guidelines on Statistical Business Registers.

Unique Business Identifier

- The enterprises in the SBR are identified by **Unique Entity Numbers** (UENs)*, a unique identifier issued to all Singapore-registered enterprises upon their registrations for their transactions with the Government.

- The UEN enables DOS to process and integrate various enterprise-level data across administrative and survey data sources to:

  - Update the SBR with comprehensive coverage of the economic units and detailed information on enterprise characteristics

  - Produce various economic and business statistics for data-driven decision making

  - Compile experimental indicators and conduct pilot studies to meet emerging demands

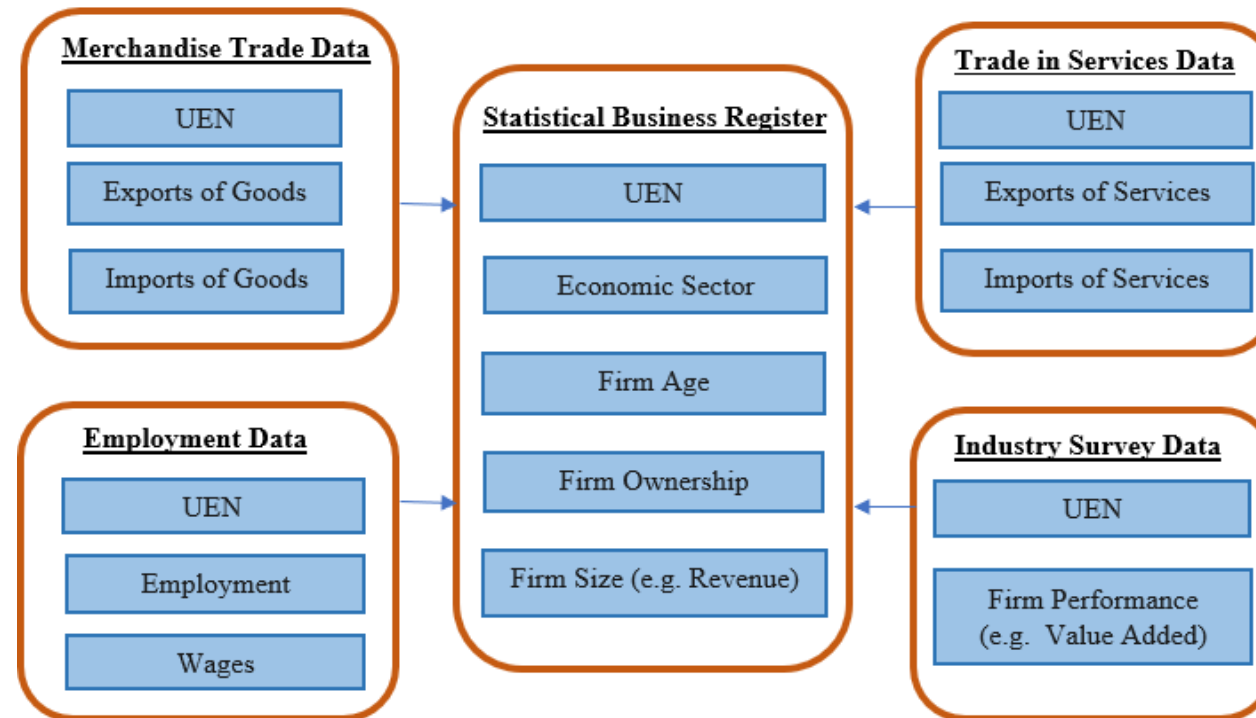* Pls refer to UEN website for more information.

Integrating Business and Trade Data through the SBR

- DOS integrates business and trade data through the SBR to examine enterprise characteristics (e.g. economic sector, firm size) and firm performance (e.g. productivity) of exporting firms for policy insights.

- DOS adopts the methodology of enterprise-level microdata linking by the unique business identifier, based on the guidelines set out in the United Nations Handbook of Integrating Business and Trade Data (HIBTS).

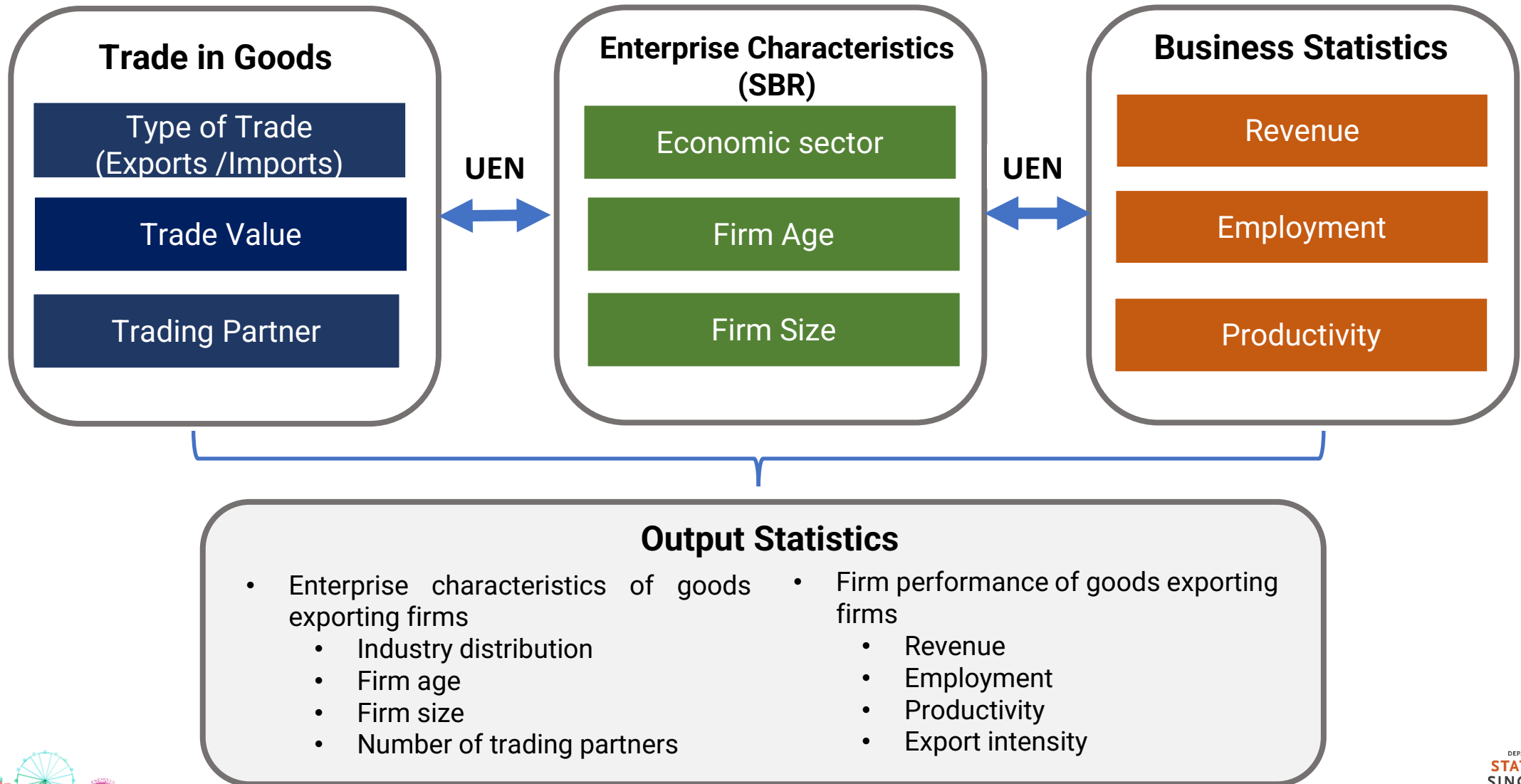**Exhibit 1: Integrating Business and Trade Data through the SBR**

Profiling Goods Exporting Firms in Singapore

- International studies show that exporting firms tend to outperform non-exporting firms. Among the exporting firms, firms exporting to more diversified markets tend to perform better than firms accessing a single market.

- The Government is committed to support Singapore firms in their internationalization efforts to expand their global presence and seize growth opportunities. Against this backdrop, DOS is conducting a study to examine the enterprise characteristics and firm performance of goods exporting firms.

- The project team integrated business data and international merchandise trade data through the Statistical Business Register (SBR). The data integration method is microdata linking by the Unique Entity Number (UEN), which facilitates data integration across statistical domains efficiently and accurately.

- The study findings will provide data insights to support Singapore enterprises in the capability building to grow their businesses, deepen the market presence and expand the global footprint.

Integrating Business and Trade Data to Profile Goods Exporting Firms

Exhibit 2: Integrating Business and Trade in Goods Data

Trade in Goods
- Type of Trade (Exports /Imports)
- Trade Value
- Trading Partner

UEN

Enterprise Characteristics (SBR)
- Economic sector
- Firm Age
- Firm Size

UEN

Business Statistics
- Revenue
- Employment
- Productivity

Output Statistics

- Enterprise characteristics of goods exporting firms
    - Industry distribution
    - Firm age
    - Firm size
    - Number of trading partners
- Firm performance of goods exporting firms
    - Revenue
    - Employment
    - Productivity
    - Export intensity

Profiling of Goods Exporting Firms in Singapore

- Majority (42.8%) of exporting firms are mature firms (> 20 years old) and they accounted for 65.2% of total export value in the study scope[1] [Exhibit 3].

- Exporters with more diversified markets (≥ 10 trading partners) tend to have larger revenue size and higher export intensity[2], as compared to firms with a single market (1 trading partner) [Exhibit 4].
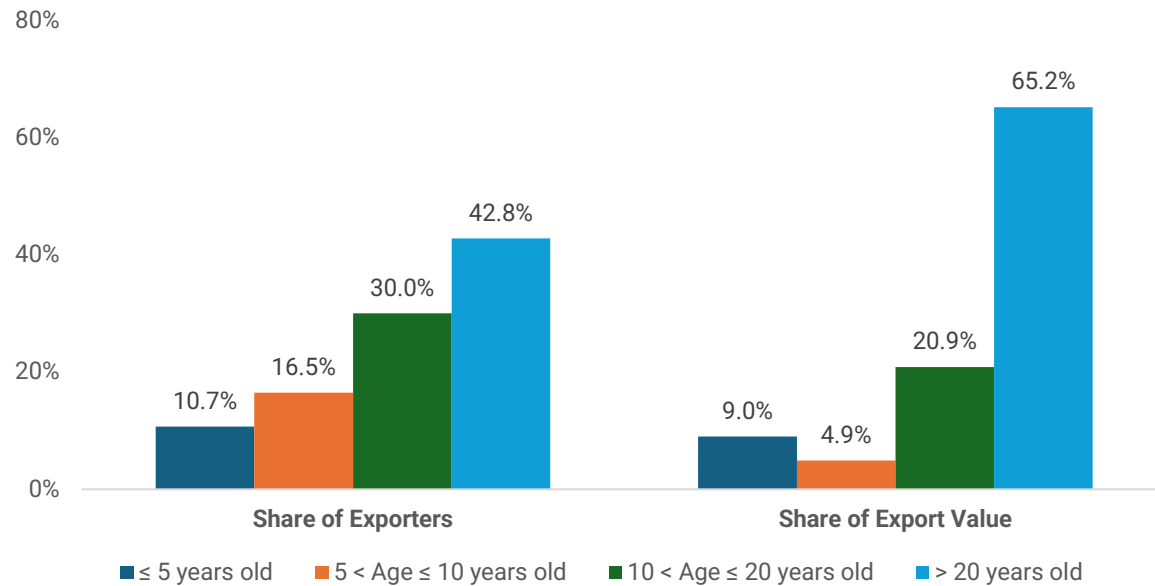

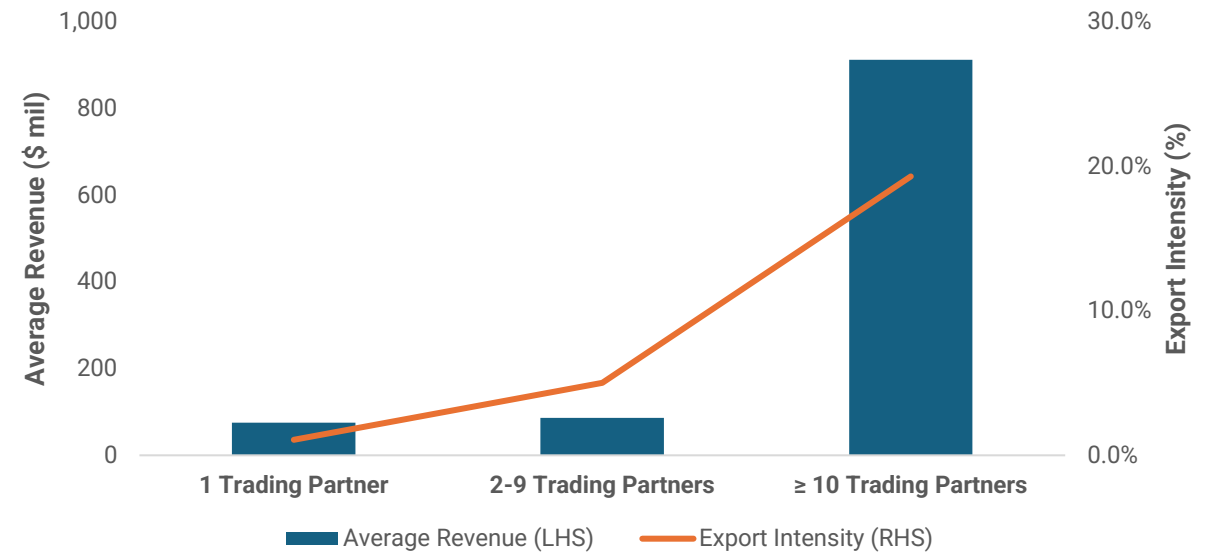Exhibit 3: Share of Exporters and Total Export Value by Firm Age, 2022

Legend: ≤ 5 years old | 5 < Age ≤ 10 years old | 10 < Age ≤ 20 years old | > 20 years old

Exhibit 4: Average Revenue and Export Intensity by Number of Trading Partners, 2022

Legend: Average Revenue (LHS) | Export Intensity (RHS)

Notes:
1. The study covers exporting firms in the manufacturing and wholesale trade industries, whose primarily activities are the production and distribution of goods.
2. Export intensity refers to the ratio of firms' export value to revenue.

Learning Points

- Data integration enables DOS to:

  - Produce new policy insights on emerging topics cutting across statistical domains

  - Leverage existing datasets to meet new data demands promptly, without additional reporting burden

- The unique business identifier - Unique Entity Number (UEN) enables DOS to integrate enterprise-level data across multiple datasets efficiently and accurately.

- The SBR serves as the backbone for data integration across multiple administrative and survey data sources to derive new insights.

- The international statistical manuals such as UN Handbook of Integrating Business and Trade Statistics, UN Guidelines on Statistical Business Registers, and Eurostat Guidelines on Micro Data Linking provide useful information on methodology and country practices for reference.

- DOS will examine the profile and contribution of women-owned exporting firms by integrating gender with business and trade data in the future study.

References

- Economic Development Board, Manufacturing Statistics.

- Enterprise Singapore, Review of 2023 Trade Performance.

- Eurostat, Micro Data Linking

- Singapore Department of Statistics, Singapore's International Trade (Infographic).

- Singapore Department of Statistics, Singapore's International Trade in Services Dashboard.

- Singapore Department of Statistics, Key Indicators of the Services Industries by Major Industry Dashboard

- Singapore Department of Statistics, Experimental Uses of Machine Learning and New Data Sources in Updating the Statistical Business Register, Statistics Singapore Newsletter Issue 1, 2023, page 4 – 7

- Singapore Department of Statistics, Data Stewardship and Governance in the Singapore Department of Statistics, Statistics Singapore Newsletter Issue 2, 2023, page 1 – 6

- United Nations, Guidelines on Statistical Business Registers