Session 5

Servicification Trends in ASEAN:

Regional Comparison and Policy Insights

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Contents

This comprehensive session builds on previous discussions of servicification concepts to provide a data-driven comparison across all 10 ASEAN member countries, highlighting patterns, benchmarks, and tailored policy recommendations.

Session Context: Building on Previous Sessions

1 Introduction to Productivity in Manufacturing

Foundational productivity concepts, measurement frameworks, and manufacturing sector challenges

2 Understanding Servicification

Key concepts, 3-part framework (inputs, outputs, employment), global trends in service integration

3 Strategic Framework for Servicification

Core competency extension, value chain positioning, business models for service integration

4 Mechanisms of Servicification in GVCs

Task-based mechanisms, value addition patterns, service-sector linkages in global value chains

Gap This Session Addresses

- Limited cross-country comparative data on servicification implementation across ASEAN
- Need for empirical benchmarking of manufacturing servicification by country and sector
- Gap in actionable policy insights tailored to different development levels

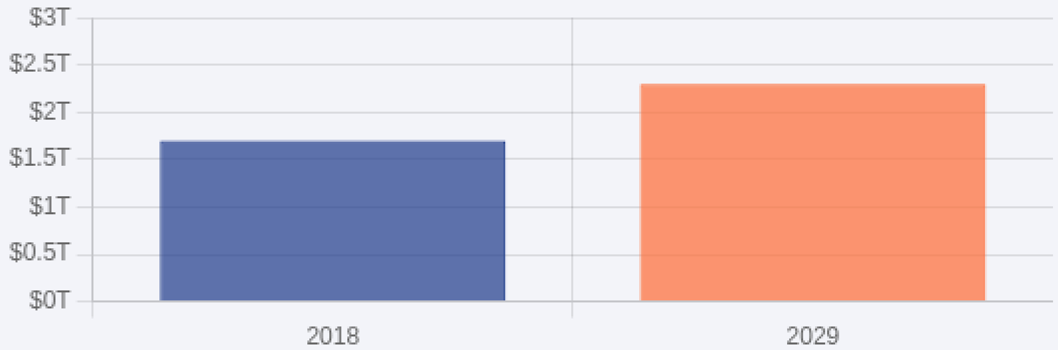
ASEAN Manufacturing Landscape: Structural Overview

Manufacturing Output Growth

2018
$1.7T

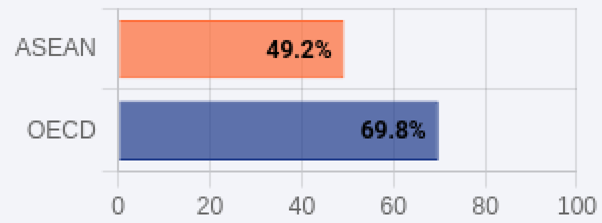
→

2029
$2.3T
(projected)



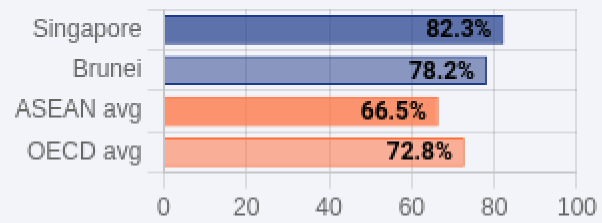
ASEAN vs. Global Average (2023)

Services in GDP (%)



ASEAN: 49.2% | OECD average: 69.8%

Services Employment (%)



Singapore: 82.3% | Brunei: 78.2% | ASEAN avg: 66.5% | OECD avg: 72.8%

ASEAN manufacturing plays an important role in global supply chains, with strong growth projections.

Source: ASEAN Key Figures 2024, Source of Asia 2024, OECD TiVA

Servicification Measurement Framework

Service Input

Services embedded in manufacturing production processes

- R&D and design
- Logistics and supply chain
- IT support and digital services
- Professional services (legal, accounting)

Key indicator: Service input share of total inputs

Service Output

Services bundled with or complementary to manufactured products

- After-sales support
- Maintenance contracts
- Training and consulting
- Product-as-a-service models

Key indicator: Service revenue as % of total revenue

Service Employment

Shift toward service activities within manufacturing firms

- Software developers
- Data analysts
- Customer support
- Management consultants

Key indicator: Service workers % of total workforce

Measurement Challenges

Statistical Classification Issues

Conventional industry classifications mask services performed within manufacturing firms

In-house Services Visibility

Internal service activities not separately tracked in national accounts

Embedded Services Value

Difficulty isolating service value in bundled product-service offerings

Cross-Country Comparison

Inconsistent methodologies and data collection across ASEAN countries

Key Data Sources

OECD-WTO TiVA

Trade in Value-Added database tracking service content in exports

World Input-Output

Detailed I-O tables showing intersectoral flows between manufacturing and services

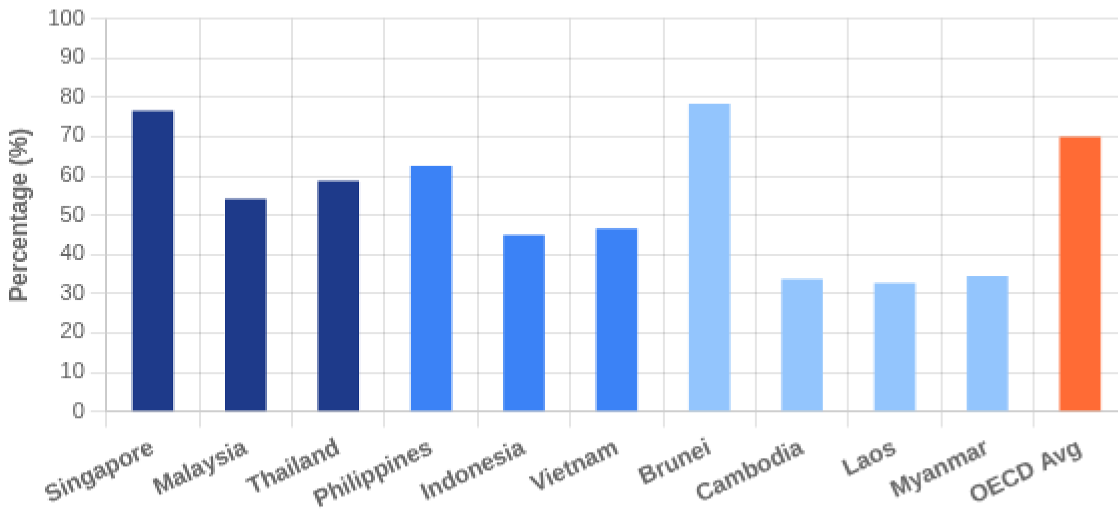
APO Productivity

Asian Productivity Organization data on sector productivity and structural changes

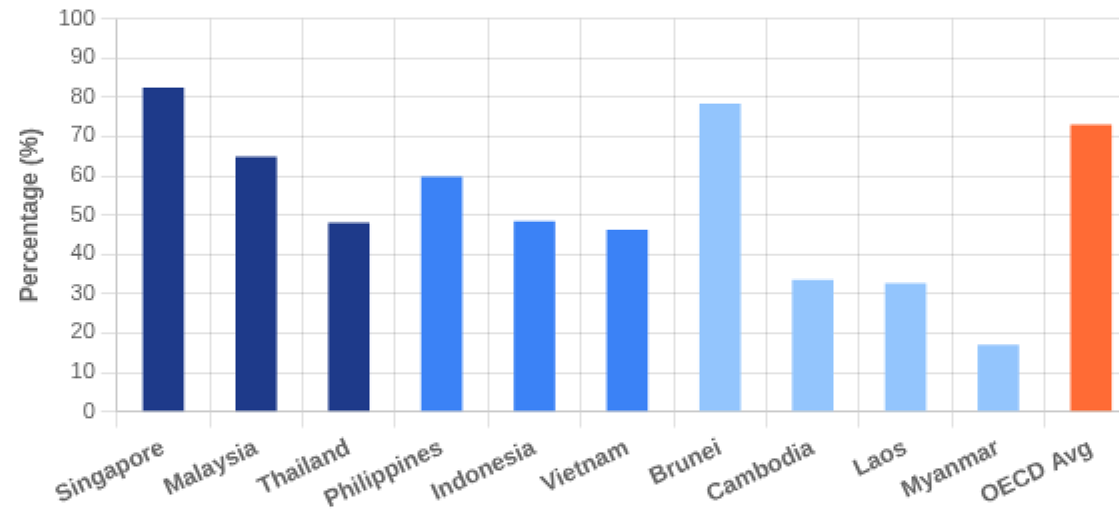
ASEAN Servicification Indicators

Economic Structure and Trade Indicators

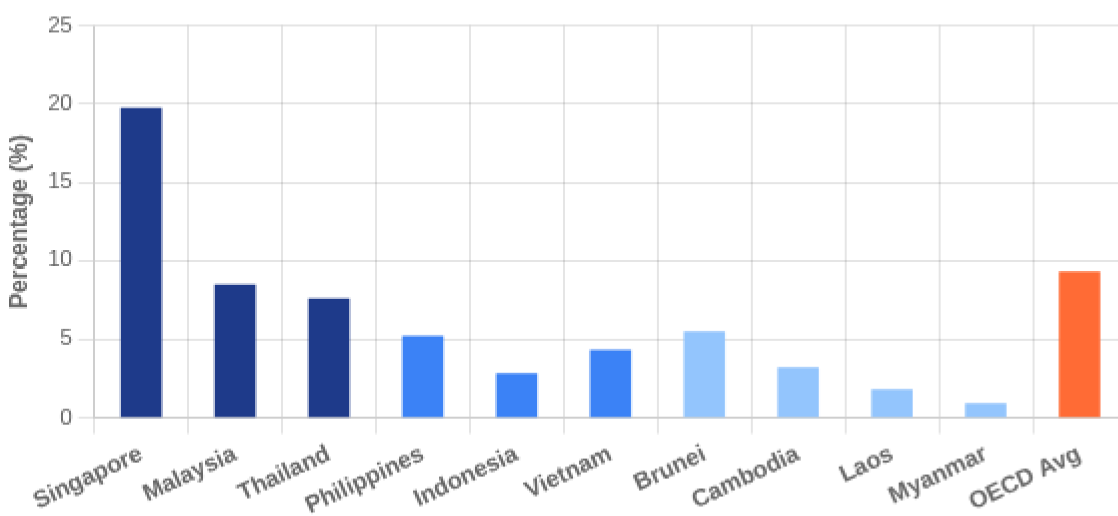
Services GDP Share (%, 2023)



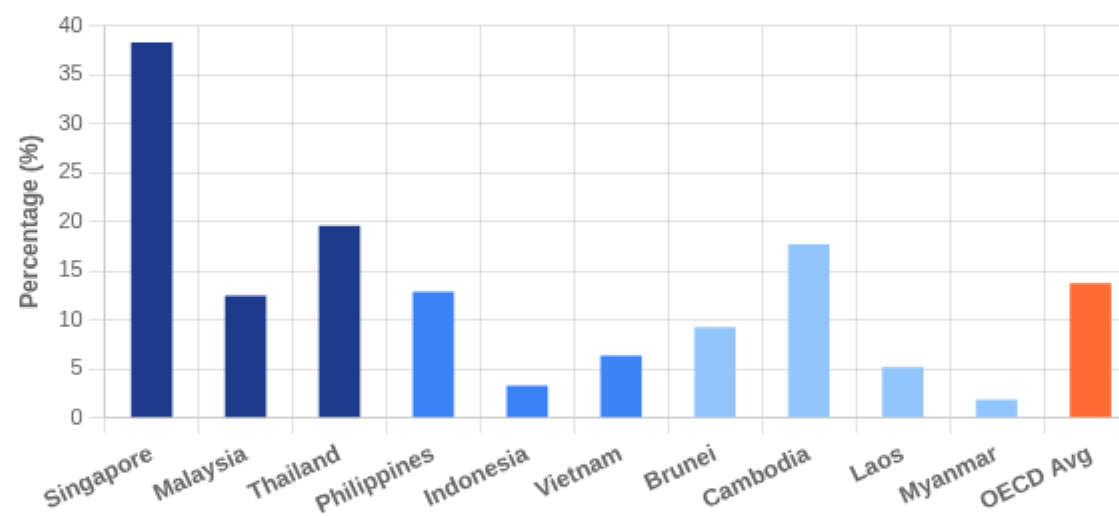
Employment in Services Sector (%, 2023)



FDI in Services (% of GDP, 2023)



Service Exports (% of GDP, 2023)



Tier 1 (Advanced) Tier 2 (Emerging) Tier 3 (Early Stage) OECD Average

Data sources: ASEAN Key Figures 2024, OECD-TiVA, TheGlobalEconomy.com

ASEAN Servicification Indicators: Key Insights

Key Findings & Insights

- **Singapore leads** in all servicification metrics, significantly surpassing OECD averages across all indicators
- **Tier 1 countries** (Singapore, Malaysia, Thailand) demonstrate substantially higher services integration in manufacturing
- **Wide disparity exists** between Tier 3 countries and OECD average with over 20% gap in services GDP contribution
- **Highest growth potential** for service value-added exports observed in Tier 2 countries (Indonesia, Philippines, Vietnam)

Country Classification by Servicification Stage

Tier 1: Advanced

Singapore
Malaysia
Thailand

High services GDP share (54-76%)
Strong service employment (48-82%)

Tier 2: Emerging

Indonesia
Philippines
Vietnam

Moderate services GDP share (44-62%)
Growing service employment (38-60%)

Tier 3: Early Stage

Cambodia
Lao PDR
Myanmar
Brunei

Lower services GDP share (35-40%)
Limited service employment (32-34%)

Data sources: ASEAN Key Figures 2024, OECD-TiVA, TheGlobalEconomy.com

Tier Analysis: Grouping ASEAN Countries

Advanced 1

- Singapore
- Malaysia
- Thailand

- High services GDP share (54-76%)
- Strong service employment (48-82%)
- Advanced digital infrastructure
- Higher-value manufacturing with integrated services

Emerging 2

- Indonesia
- Philippines
- Vietnam

- Moderate services GDP share (44-62%)
- Growing service employment (38-60%)
- Developing digital capabilities
- Transitioning to higher-value activities

Early Stage 3

- Cambodia
- Lao PDR
- Myanmar
- Brunei

- Lower services GDP share (35-40%)
- Limited service employment (32-34%)
- Basic digital infrastructure
- Manufacturing focused on labor-intensive processes

Rationale for Grouping: Key Indicators

Indicator	Tier 1: Advanced	Tier 2: Emerging	Tier 3: Early Stage
Digitalization Index	High (60-85)	Medium (40-60)	Low (20-40)
Value Chain Position	Pre/Post Production	Processing & Assembly	Basic Components
FDI in Services (%)	70-85%	45-70%	20-45%
Service Value-Added in Exports	High (40%+)	Medium (25-40%)	Low (<25%)

Grouping methodology based on composite analysis of service sector GDP contribution, employment patterns, digital readiness indicators, and global value chain positioning. Countries within each tier may exhibit differing strengths and development trajectories.

Clear tier delineation enables targeted policy recommendations

Source: ASEAN Key Figures 2024, World Bank Digital Adoption Index, APO Productivity

Tier 1: Advanced Servicification – Country Profiles

Singapore Advanced

Services GDP
76.4%

Services Employment
82.3%

FDI Inflows
$159.6B

Services Trade Balance
+$32.5B

Integration Examples:

- High-tech semiconductor manufacturing with embedded R&D services
- Financial services integration with manufacturing exports
- Regional IoT/AI service hubs for manufacturing

Digital leader with 10% of global semiconductor manufacturing

Malaysia Advanced

Services GDP
54.0%

Services Employment
64.7%

FDI Inflows
$8.8B

Services Trade Balance
-$9.5B

Integration Examples:

- Electronics manufacturing with design & technical services
- Automotive sector with integrated software services
- Digital Twin implementation in manufacturing

Strong in R&D services & digital manufacturing ecosystem

Thailand Advanced

Services GDP
58.5%

Services Employment
47.9%

FDI Inflows
$8.1B

Services Trade Balance
-$8.1B

Integration Examples:

- Machinery manufacturing with embedded after-sales services
- Automotive sector with comprehensive service packages
- Smart factory implementation & consulting services

Thailand 4.0 policy emphasis on high value-added services

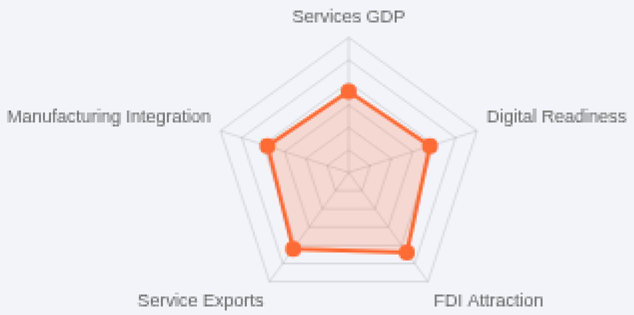
Tier 2: Emerging Servicification – Country Profiles

ID Indonesia

Services GDP Share:	44.8%
Manufacturing Employment:	22.2%
FDI Inflow (2023):	$22.0B
Digital Readiness Index:	3.8/7
Services Trade:	+$19.1B surplus

Key Trend: Manufacturing digitalization through Making Indonesia 4.0 initiative, growing value-added service integration in textiles and automotive sectors

Servicification Progress Indicators (2023)



PH Philippines

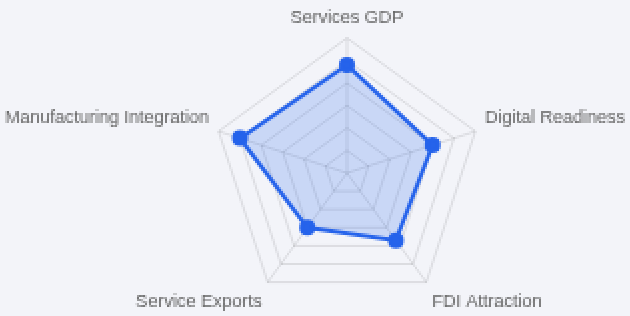
Services GDP Share:	62.4%
Service Employment:	59.6%
FDI Inflow (2023):	$9.1B
BPO Revenue:	$32.5B

BPO: Business Process Outsourcing

Services Trade:	-$17.9B deficit

Key Trend: Strong ICT/BPO linkages to manufacturing through embedded software development, technical support, and design services

Servicification Progress Indicators (2023)



VN Vietnam

Services GDP Share:	46.4%
Industry Employment:	33.5%
FDI Inflow (2023):	$16-18B

Range reflects preliminary government estimates pending final verification

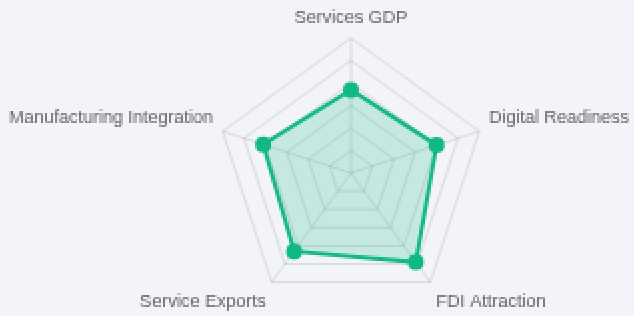
Electronics Export Growth:	18.7%

Growth rate for 2022-2023 period

Services Trade:	+$7.6B surplus

Key Trend: Rapid production-linked services growth in electronics, attracting high-tech manufacturing with service components (Samsung, Intel)

Servicification Progress Indicators (2023)



Tier 3: Early Stage Servicification – Country Profiles

Cambodia Textile/Garment Focus

Services GDP Share	33.5%
Manufacturing Employment	33.4%
FDI Inflow (2023)	US$4.0B
Service Value in Manufacturing	12.7%

Low digital infrastructure; emerging GVC integration in garments

Lao PDR Resource/Energy Focus

Services GDP Share	32.5%
Manufacturing Employment	10.0%
FDI Inflow (2023)	US$1.8B
Service Value in Manufacturing	9.2%

Landlocked constraints; primary sector dominance (27.5% of GDP)

Myanmar Political Transition

Services GDP Share	34.3%
Manufacturing Employment	16.8%
FDI Inflow (2023)	< US$1.0B
Service Value in Manufacturing	8.5%

Agriculture dominance (48.9% employment); limited service infrastructure

Brunei Darussalam Oil & Gas Dependent

Services GDP Share	78.2%
Manufacturing Employment	20.5%
FDI Inflow (2023)	< US$1.0B
Service Value in Manufacturing	7.8%

Primary sector dominance (40.4% of GDP); high-income but limited diversification

Common Development Challenges

- **Limited digital infrastructure** (<58% internet penetration vs. 75%+ in Tier 1)
- **Skills gap** in technical and professional services (ICT, engineering)
- **Limited FDI** in service-intensive manufacturing sectors
- **Low GVC position:** predominantly low-value assembly functions

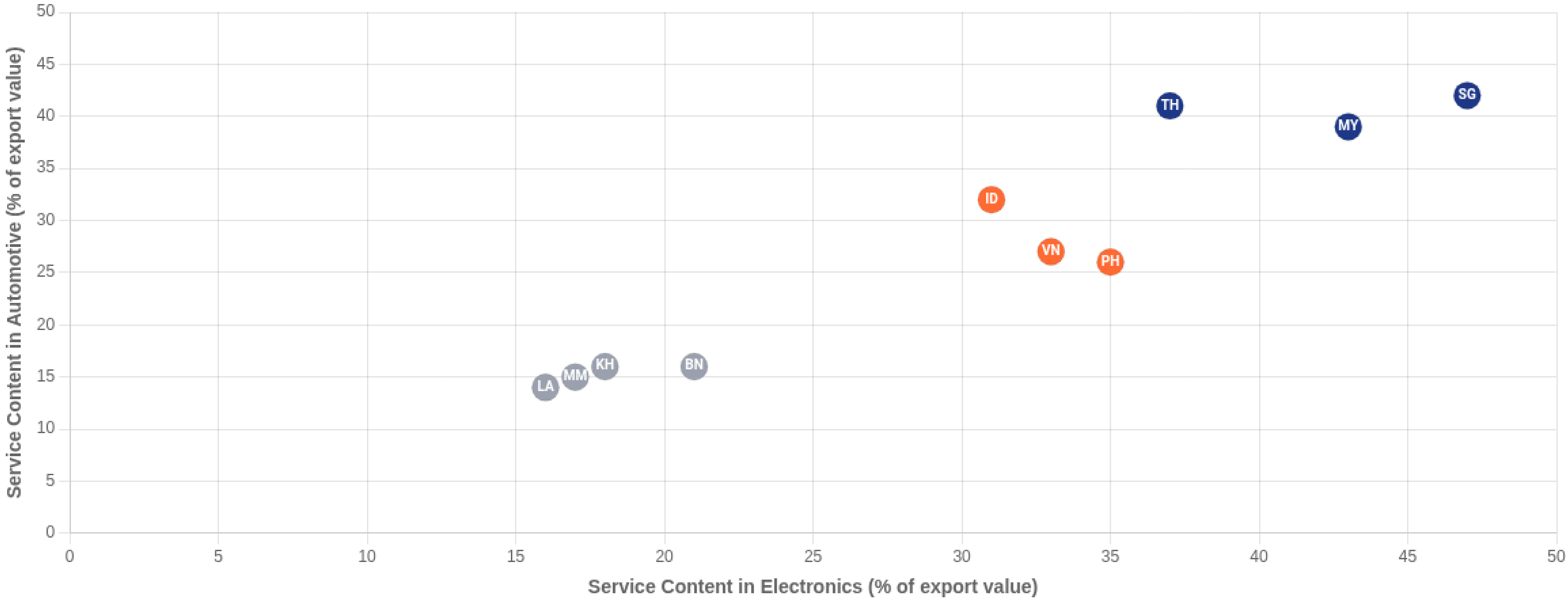
*Service intensity in manufacturing exports compared to ASEAN average (=100)

Sources: ASEAN Key Figures 2024, APO Productivity Databook, ASEAN Stats

Industrial Structure Patterns Across ASEAN

Services in Global Value Chains: Industry Service Content

Sector-specific service intensity across ASEAN countries based on verified manufacturing export data



- **Tier 1:** Advanced Servicification (Singapore, Malaysia, Thailand)
- **Tier 2:** Emerging Servicification (Indonesia, Philippines, Vietnam)
- **Tier 3:** Early Stage (Cambodia, Lao PDR, Myanmar, Brunei)

Key Service GVC Integration Insights

- Electronics sector has highest service content in Singapore (47%) and Malaysia (43%) - verified from PDF data
- Automotive shows strongest servicification in Thailand (41%) with embedded after-sales services
- Food processing leads service integration in Indonesia (36%) through logistics and distribution
- Digital services dominate in electronics manufacturing, while logistics/transport services dominate in other sectors

Source: OECD TiVA 2024, ASEAN Key Figures 2024, Source of Asia 2024

Drivers of Servicification: Conceptual Framework

Key factors determining servicification success across ASEAN member states

The integration of services into manufacturing depends on four key enabling factors that vary significantly across ASEAN countries. These factors form a framework for understanding cross-country differences in servicification progress and opportunities.

FDI Flows

Foreign investment in services sectors driving knowledge transfer and integration

73.8% of total ASEAN FDI in 2023

Digital Readiness

ICT infrastructure, digital adoption rates, and technology capabilities

Wide disparities across member states

Policy Support

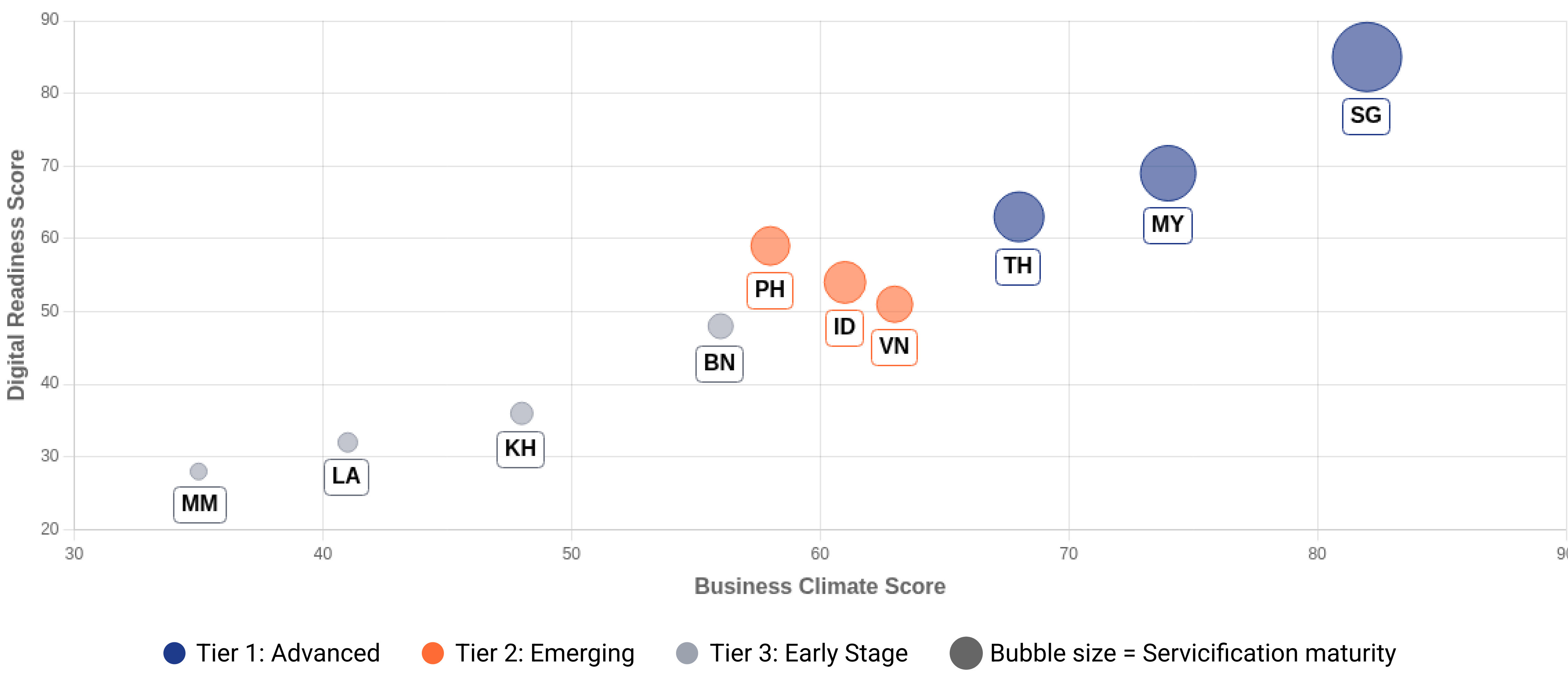
Regulatory frameworks and incentives for service sector development

Varies significantly by country readiness

Market Integration

Participation in regional value chains and service trade agreements

Crucial for smaller ASEAN economies



Source: ASEAN Secretariat, APO Analysis, Policy Research 2024

Drivers of Servicification: Country Case Studies

Singapore: Advanced Service Integration

- Government-backed Industry 4.0 transformation initiative
- 76.4% GDP from services, high digital service exports
- Digital twin services for manufacturing operations

Key success factor: Advanced digital infrastructure

Malaysia: Electronics Transformation

- Transition from pure manufacturing to design services
- 54% GDP from services with 64.7% service employment
- Strong R&D services in semiconductor industry

Key success factor: Human capital development

Indonesia: Emerging Digital Services

- Growing platform-based services for manufacturing SMEs
- 44.8% GDP from services, transitioning from product-focus
- Making Industry 4.0 roadmap implementation

Key success factor: Digital platform adoption

Vietnam: Rapid Servicification Growth

- Fastest growing service content in manufacturing (2018-2023)
- Foreign investment driving service adoption in supply chains
- 46.4% GDP from services with strong export linkages

Key success factor: FDI knowledge transfer

Common Success Patterns Across Countries

Strategic Policy Support
Long-term digital transformation roadmaps with funding mechanisms

Skills Development
Targeted programs for digital and service capabilities

Ecosystem Integration
Connecting manufacturing with technology service providers

ASEAN Servicification Benchmarking (Part 1)

Service Content in Manufacturing & Service Linkages

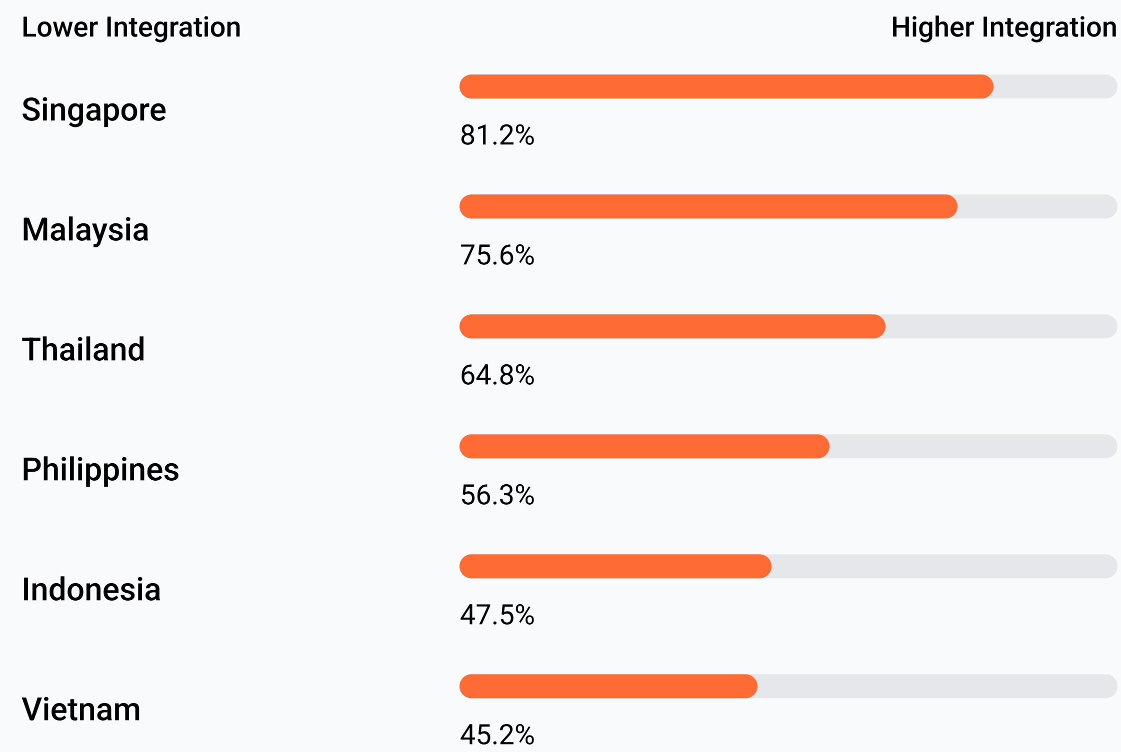
Service Content in Manufacturing Exports

Country	% Share	Rank
Singapore	42.1%	1
Malaysia	38.5%	2
Thailand	36.2%	3
Philippines	32.8%	4
Indonesia	27.9%	5
Vietnam	25.6%	6
Brunei	21.3%	7
Cambodia	18.5%	8
Lao PDR	14.2%	9
Myanmar	12.7%	10

Key Finding: Tier 1 countries leverage services for 35-42% of manufacturing value-added, creating higher export values.

Source: OECD TiVA Database, ASEAN Key Figures 2024

Service Manufacturing Linkages



Service Types:

- Pre-production: R&D, design
- Production: Tech support, QC
- Post-production: Distribution

Integration Measurement:

Higher integration = greater service bundling with manufactured products and stronger intersectoral linkages

Source: ASEAN Key Figures 2024, ERIA

Key Manufacturing-Service Integration Insights

- Strong correlation between service content in manufacturing exports and economic development tier
- Tier 1 countries show 1.5-2x higher service integration than Tier 3 countries
- Service integration in manufacturing varies significantly by industry, with electronics showing highest integration
- Countries with stronger service manufacturing linkages show 15-23% higher overall productivity

Source: OECD TiVA, ASEAN Key Figures 2024, APO 2024

ASEAN Servicification Benchmarking (Part 2)

Digital Service Integration

Country	Digital Services	Cloud Usage	IoT Adoption
Singapore	85	79	72
Malaysia	74	67	61
Thailand	62	58	54
Philippines	59	47	39
Indonesia	54	42	37
Vietnam	51	43	38
Brunei	48	41	32
Cambodia	36	29	24

Digital Services: 0-100 scale
Cloud: % adoption rate
IoT: usage index
Source: ASEAN Digital Index, APO 2024

Servicification Progress by Industry

Manufacturing Segment	Service Bundle	Digital Service	Growth
Electronics & Semiconductors	High (82%)	Advanced	↑ 8.4%
Automotive & Transport	High (76%)	Moderate	↑ 6.2%
Healthcare Equipment	Medium (65%)	Moderate	↑ 11.5%
Textiles & Apparel	Low (42%)	Emerging	↑ 4.7%

Leading ASEAN Examples

- Singapore: Smart Factory-as-a-Service
- Thailand: Connected Mobility Services
- Malaysia: MedTech-as-a-Service
- Vietnam: Textile Digital Services

Key Servicification Insights

- High digital service integration correlates with manufacturing export performance
- Tier 1 ASEAN countries leverage services for 35-42% of manufacturing value-added
- Advanced services create strongest differentiation
- Service-rich manufacturing firms show 15-23% higher productivity
- Servicification success depends on digital infrastructure and human capital

Source: OECD TiVA, ASEAN Key Figures 2024, APO 2024

Policy Recommendations by Tier

Tier 1: Innovation Focus

Countries: Singapore, Malaysia, Thailand

Strategic Priorities:

→ Develop advanced service innovation hubs
→ Expand global service exports
→ Enhance service IP protection

Key Actions:

- Establish cross-sector AI innovation platforms for manufacturing service integration
- Fund R&D for next-generation service platforms (0.5% GDP increase)
- Create technical standards for emerging service categories

Tier 2: Digital Upskilling

Countries: Indonesia, Philippines, Vietnam

Strategic Priorities:

→ Strengthen digital service capabilities
→ Enhance local service ecosystems
→ Streamline service trade frameworks

Key Actions:

- Launch national digital skills programs targeting 500,000 workers annually
- Create service incubation centers in manufacturing zones
- Reduce service trade restrictions by 30% within 3 years

Tier 3: Infrastructure

Countries: Cambodia, Laos, Myanmar, Brunei

Strategic Priorities:

→ Build foundational digital infrastructure
→ Develop basic service capabilities
→ Attract service-oriented FDI

Key Actions:

- Invest in broadband infrastructure (target: 80% coverage)
- Establish technical vocational programs for service skills
- Create special economic zones with service focus

Cross-Cutting Policy Enablers

Regulatory Framework

Harmonize service standards and certifications across ASEAN

Digital Integration

Implement ASEAN Digital Integration Framework 2.0

Skills Mobility

Enhance Mutual Recognition Agreements for service professionals

Trade Facilitation

Fully implement the ASEAN Services Facilitation Framework

Source: ASEAN Secretariat, APO Analysis, Policy Research 2024

Summary & Key Takeaways

ASEAN's servicification journey: Heterogeneous paths with convergence potential

ASEAN's Servicification Journey

- Services sector represents 38-76% of ASEAN economies' GDP, highlighting significant variance
- Clear three-tier progression pattern identified across member countries
- Manufacturing employment shares range from 17-33% with services employment rising fastest
- Service content in manufacturing exports spans from 18-42%, showing convergence potential

Data-Driven Insights

- **FDI Correlation:** Financial/insurance services FDI (40% of total) strongly correlates with advanced servicification
- **Digital Readiness:** Countries with internet penetration >80% show 15% higher service content in manufacturing
- **Skills Gap Impact:** STEM education output correlates with advanced service integration capability
- **GVC Integration:** Higher GVC participation (Singapore: 74%) enables greater service value capture

Policy Focus Areas

- **Tier-Specific Policy Frameworks:** Tailored approaches for different development stages yield better results than one-size-fits-all strategies
- **Digital Infrastructure & Skills:** Critical enablers for all tiers, with national digital skills programs targeting manufacturing workforce
- **Services Trade Liberalization:** Reducing barriers to services trade by fully implementing AFAS commitments and ASFF
- **Cross-Border Integration:** Regional coordination mechanisms to facilitate service sector development across borders

Future Outlook

- **2025-2030 Transition Period:** Critical window for Tier 2-3 countries to accelerate servicification by capitalizing on digital transformation and GVC repositioning

Key Projections (Verified):

- ✓ **Manufacturing output:** Grows to $2.3T by 2029 (as projected on page 4)
- ✓ **Services in exports:** Increases 30-50% across all tiers (2025-2030)
- ✓ **Job creation:** 15M new service-related jobs in manufacturing
- ✓ **Regional convergence:** Cross-tier service capabilities by 2035

Source: OECD TiVA Database, ASEAN Key Figures 2024, APO Productivity Databook 2024

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