



THE OFFICE OF  
BAMBANG BRODJONEGORO

# DIGITAL ECONOMY GROWTH IN ASEAN: DYNAMICS AND OPPORTUNITIES OF ARTIFICIAL INTELLIGENCE

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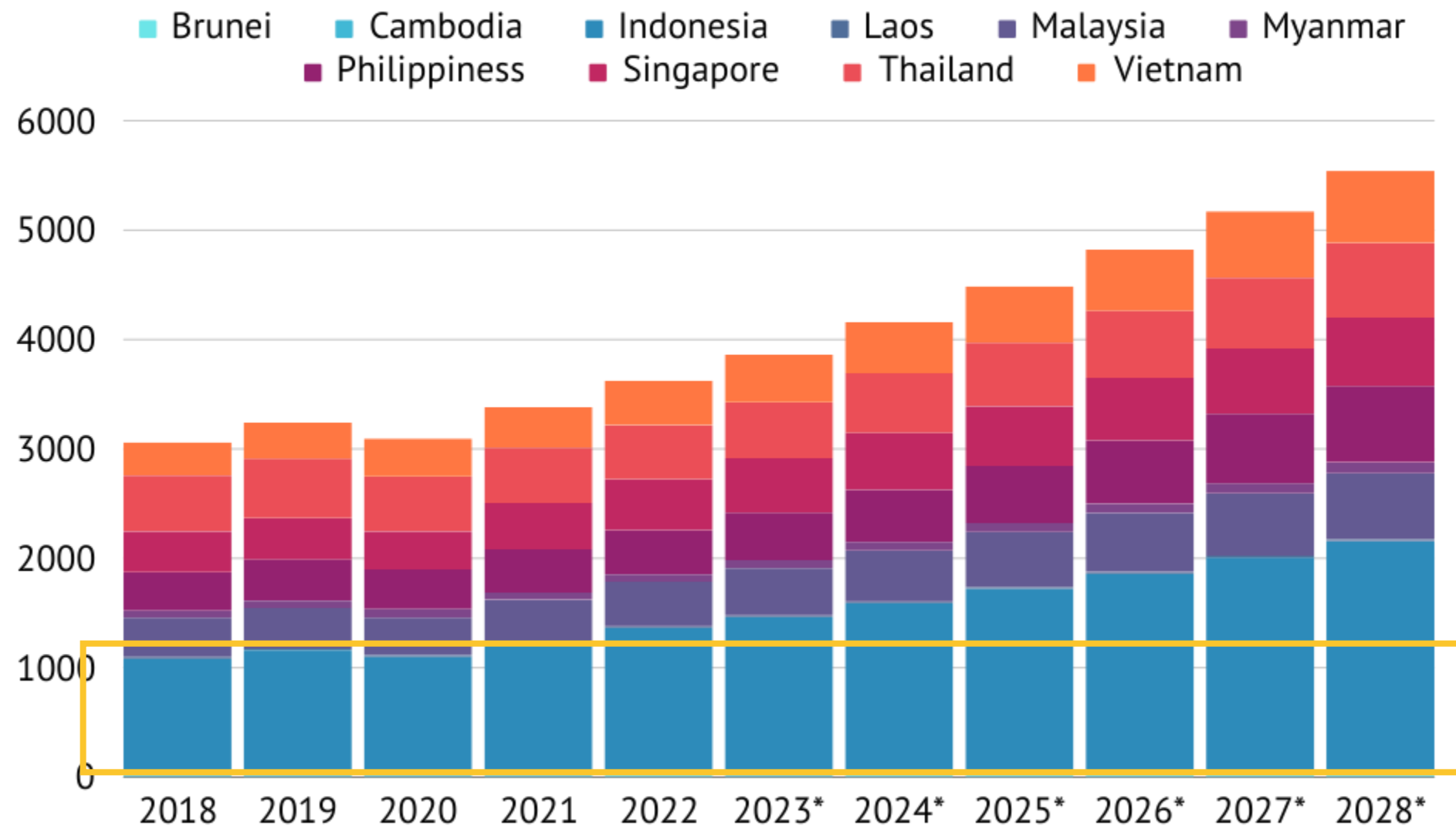


# ASEAN Economic Growth

In 2022, the combined GDP of all ASEAN states reached approximately 3.63 trillion U.S. dollars, marking a significant rise from previous years and positioning the region's economy, led by Indonesia, as the largest in the region. ASEAN GDP growth is also rising and keeping up with world's largest economies.

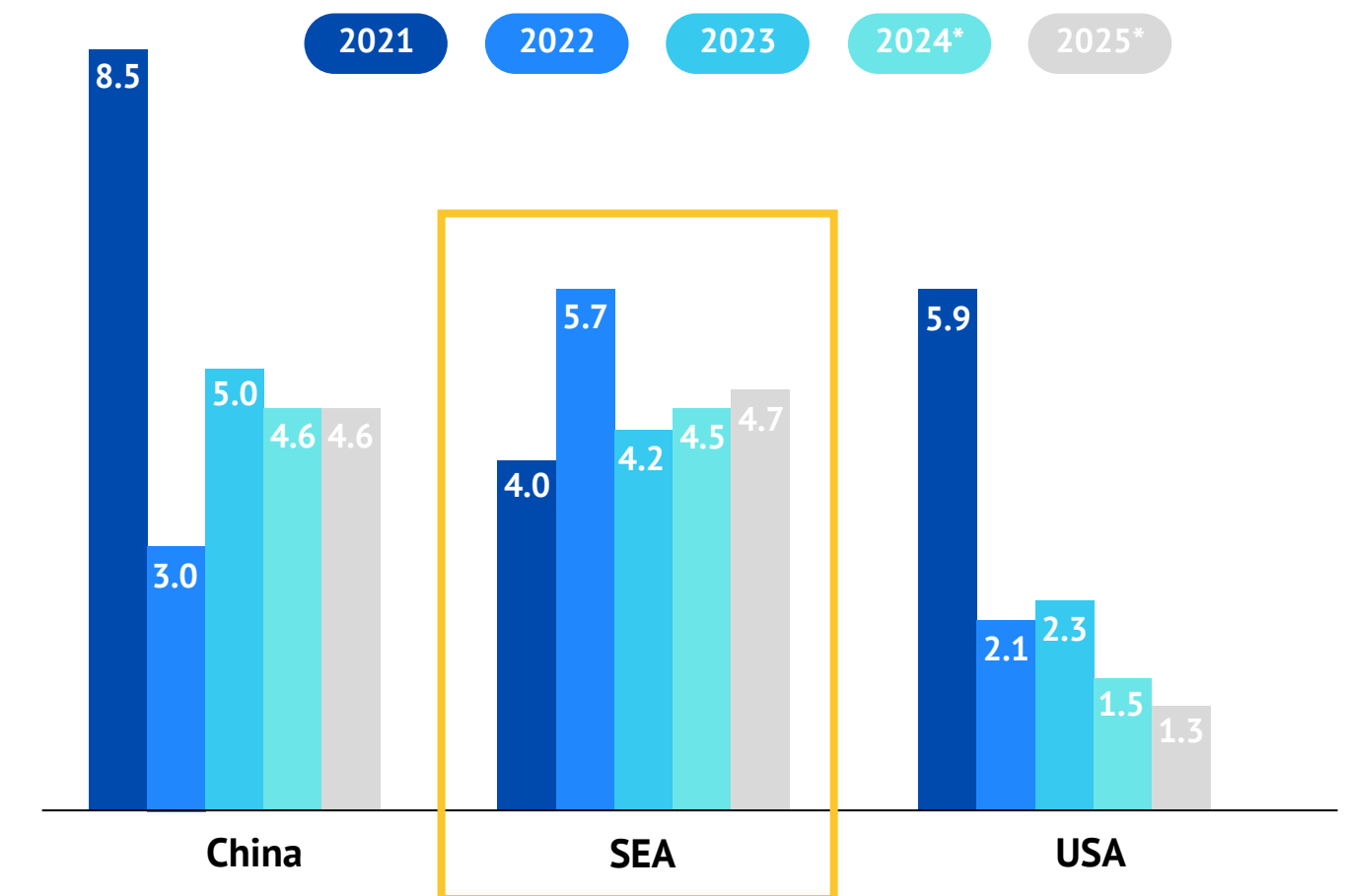
## GDP of ASEAN Member Countries

(in billion U.S. dollars)



\*Data after 2022 are projected value

## ASEAN Real GDP Growth Rate Compared to Some Countries (YoY %)



## ASEAN Growth is Driven By



Favorable  
Demographics



Rapid  
Urbanization



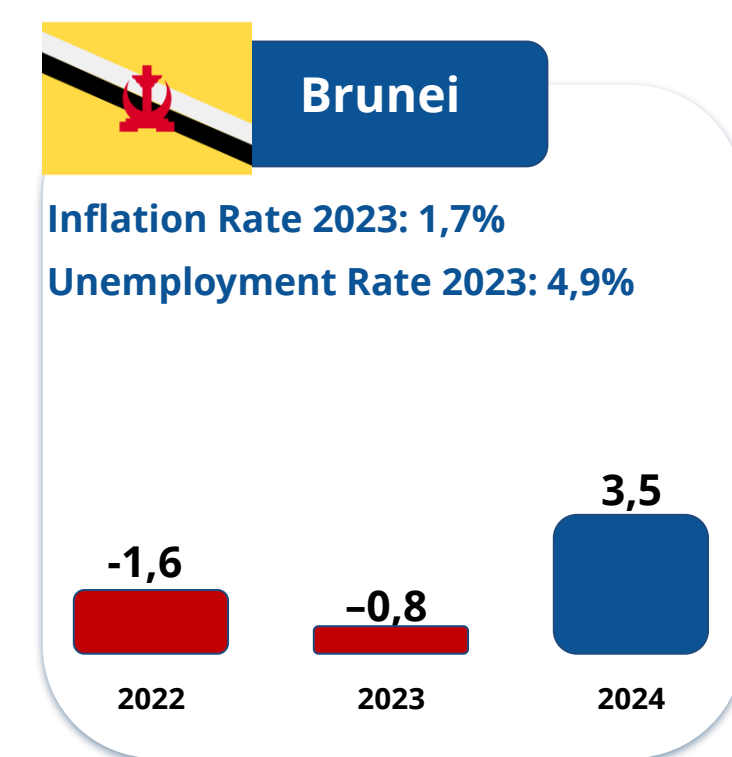
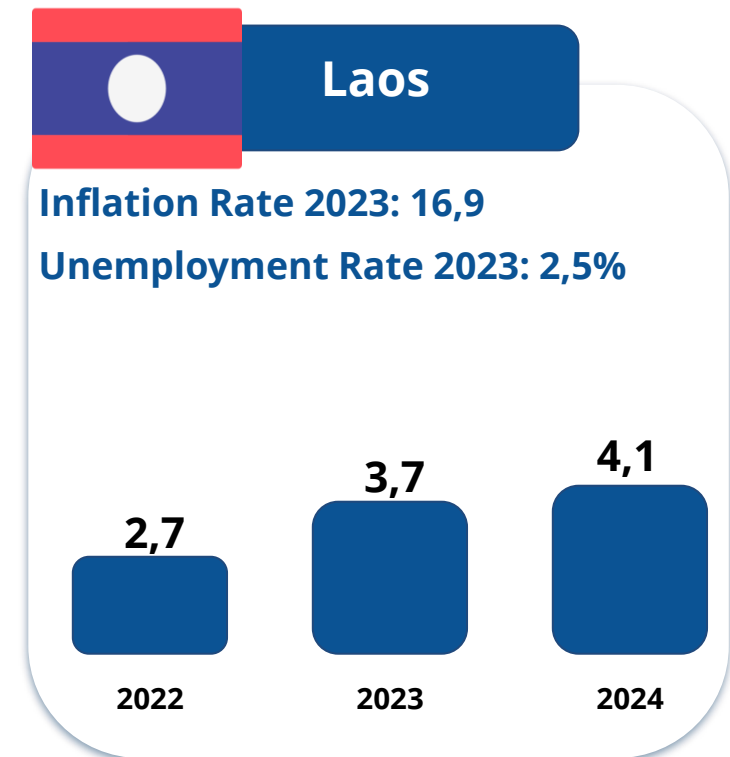
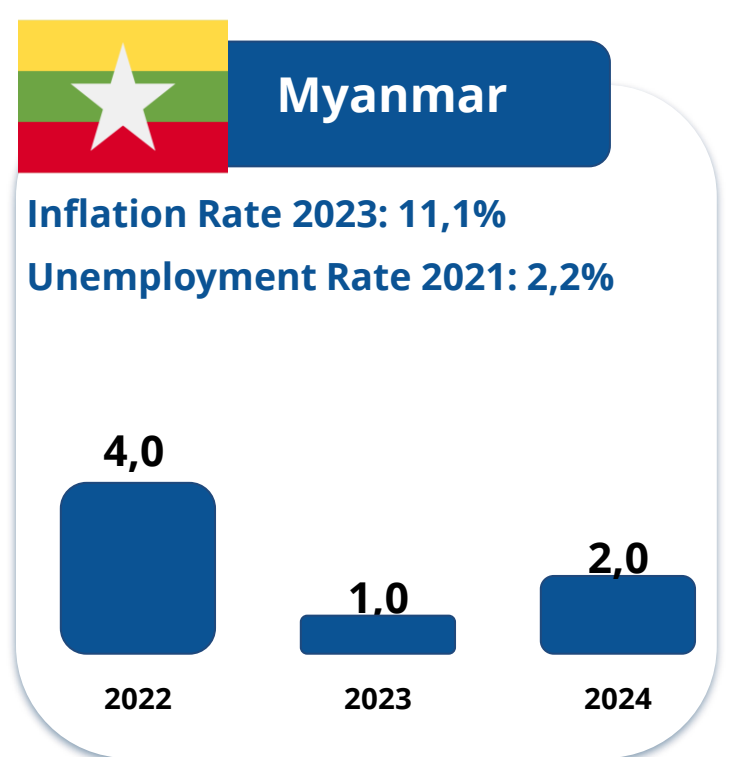
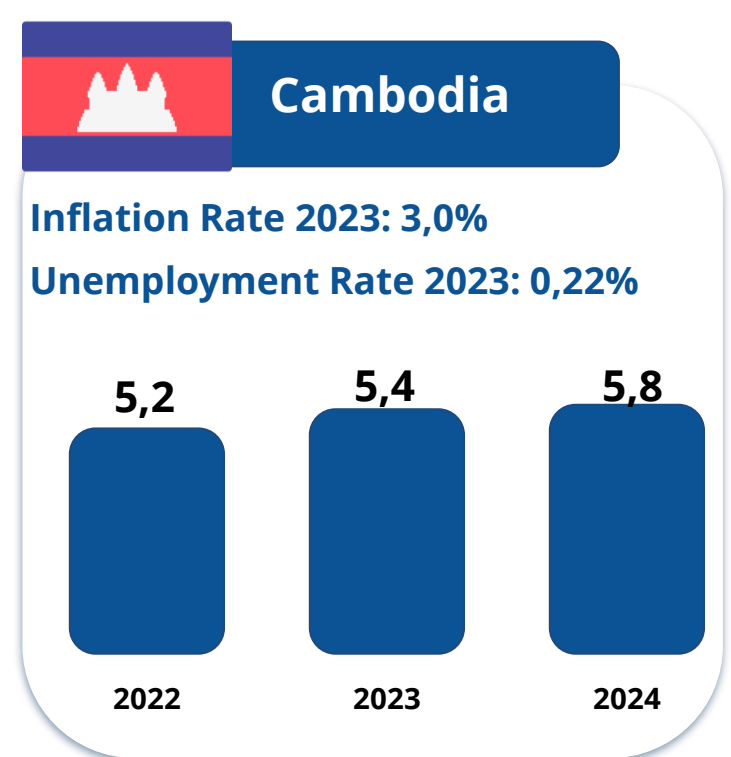
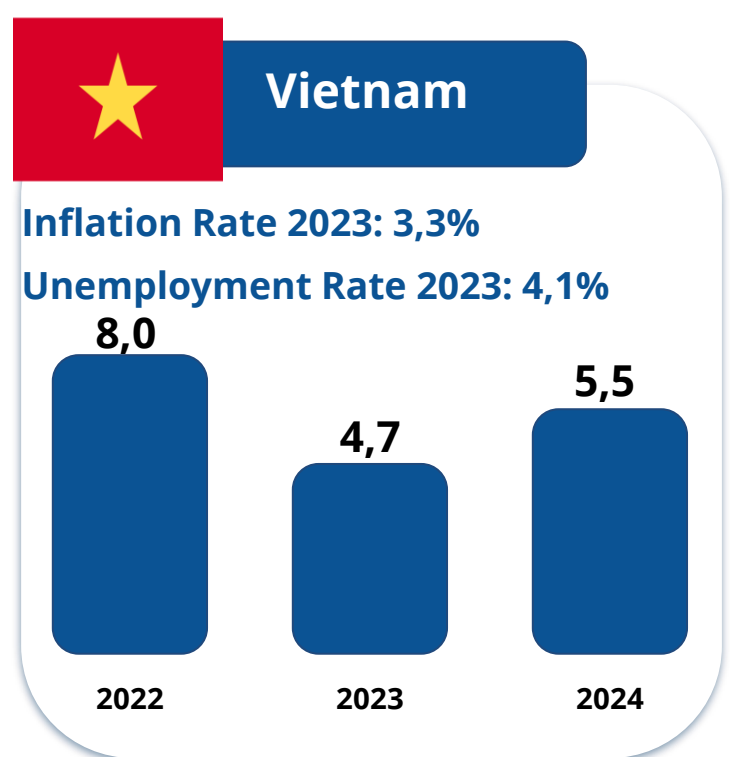
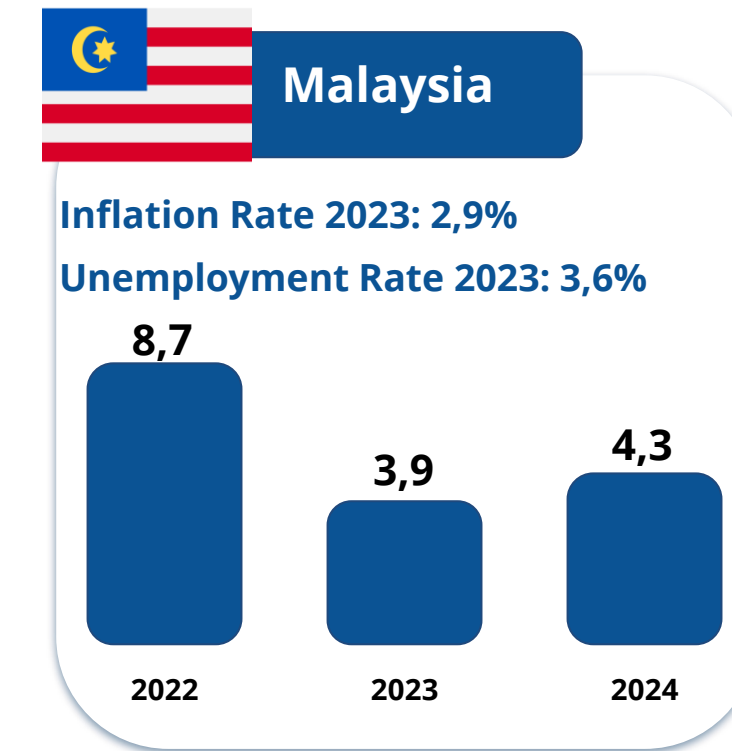
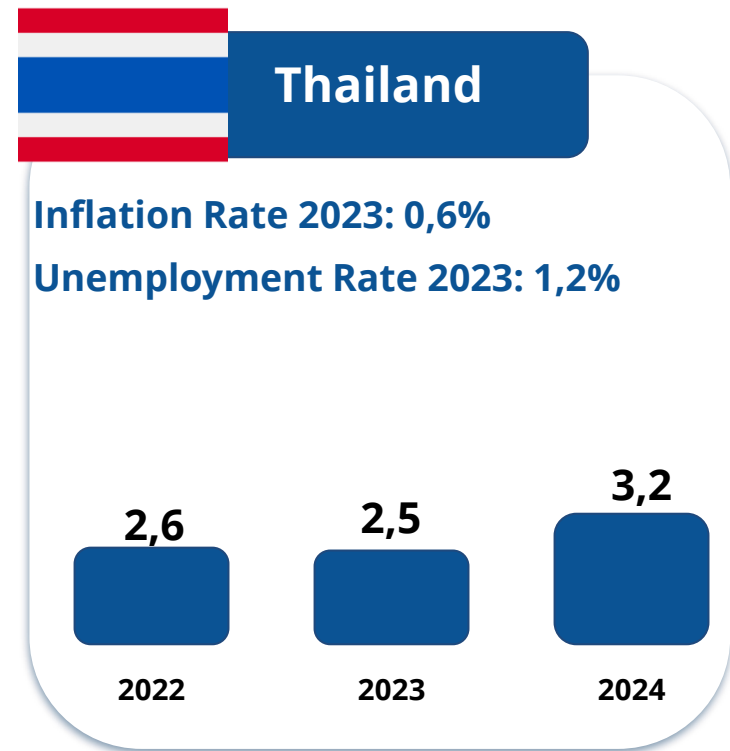
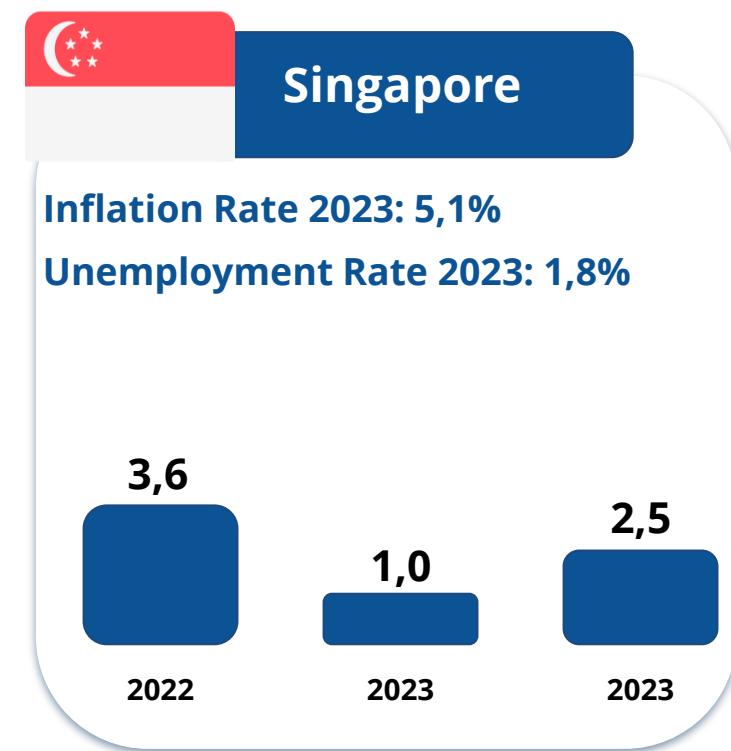
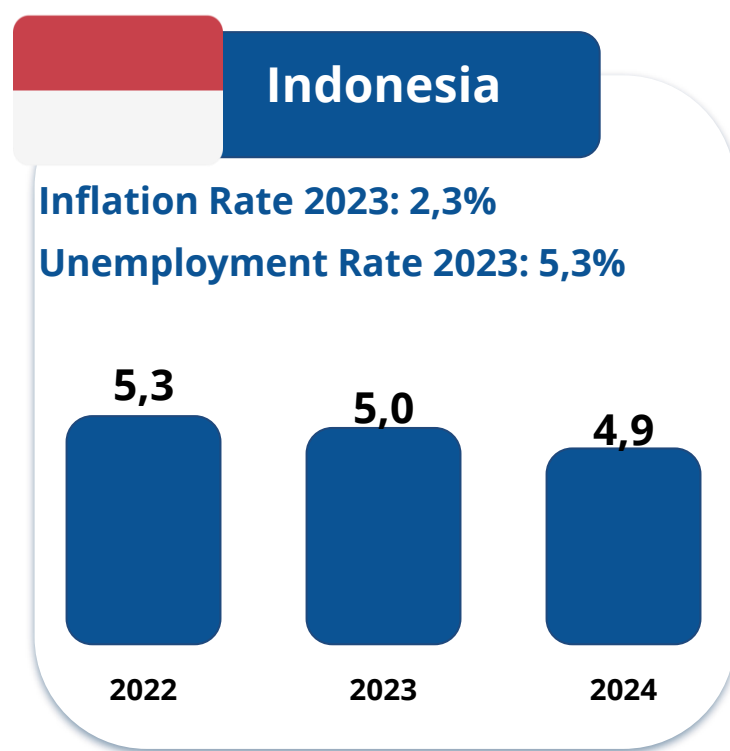
Growing  
Entrepreneurship



Regional Economic  
Partnership



# The real GDP of Indonesia, Vietnam, Cambodia, and the Philippines is projected to grow positively by more than 4.9% in 2024 (World Bank, 2024).



\*During the Asean Summit in Cambodia in 2022, Timor-Leste was admitted in principle as the 11th member of Asean and granted **observer status**.

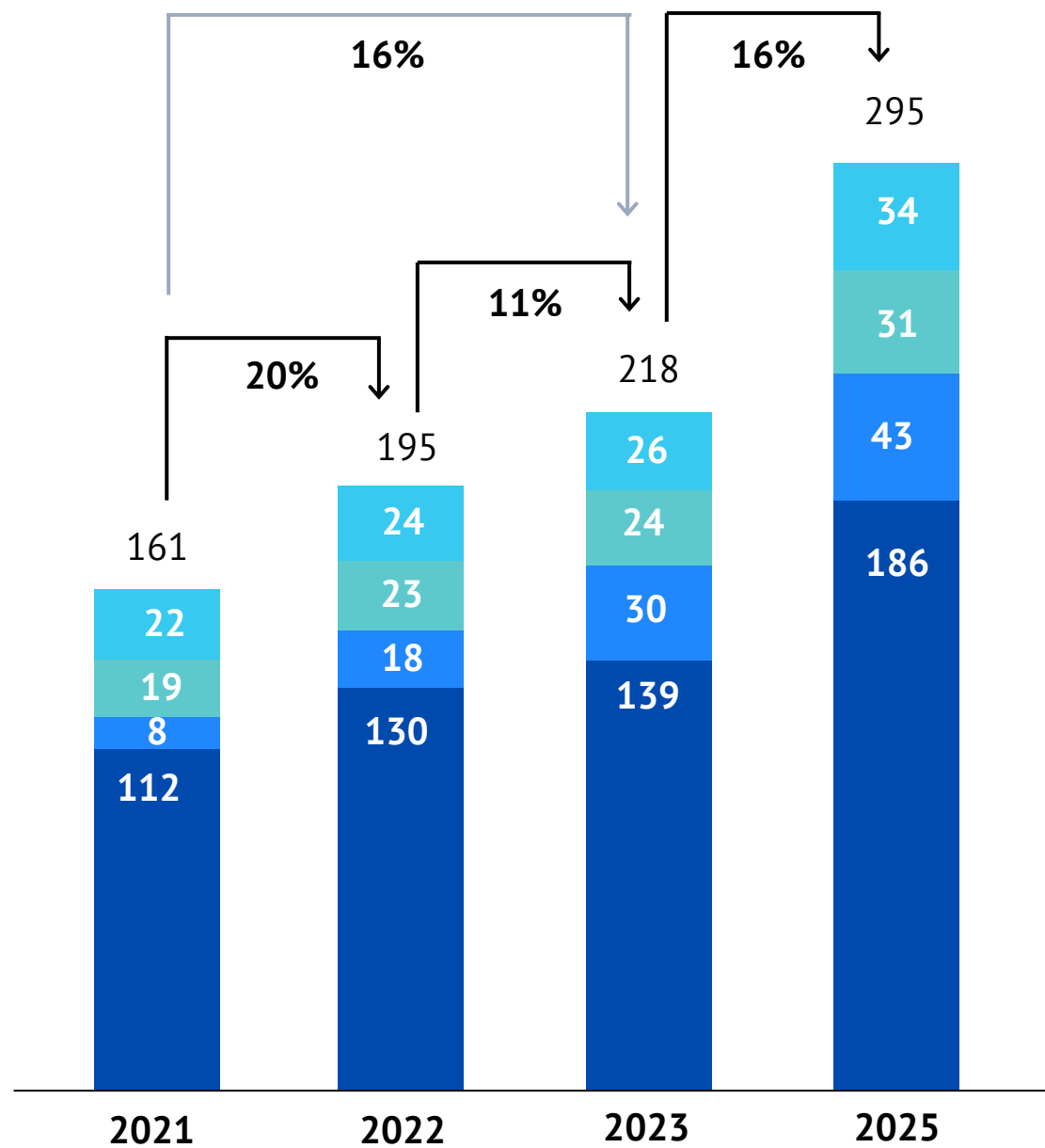


# ASEAN Digital Economy Growth

In 2023 ASEAN's digital economy revenue surged to \$100 billion. The growth of GMV and revenue represents the increasing economic activity within the digital economy sectors of the ASEAN region, indicating thriving digital economy and rising demand for digital products and services.

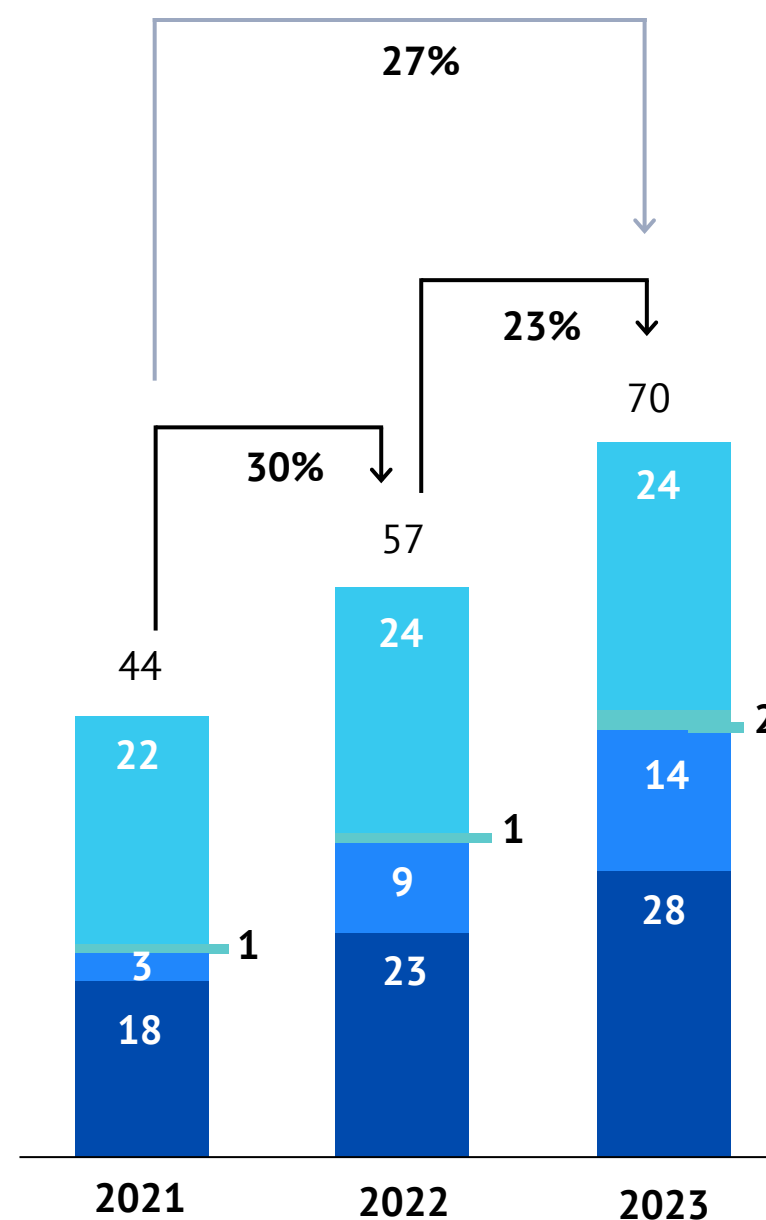
## ASEAN Digital Economy GMV

(in billion U.S. dollars)

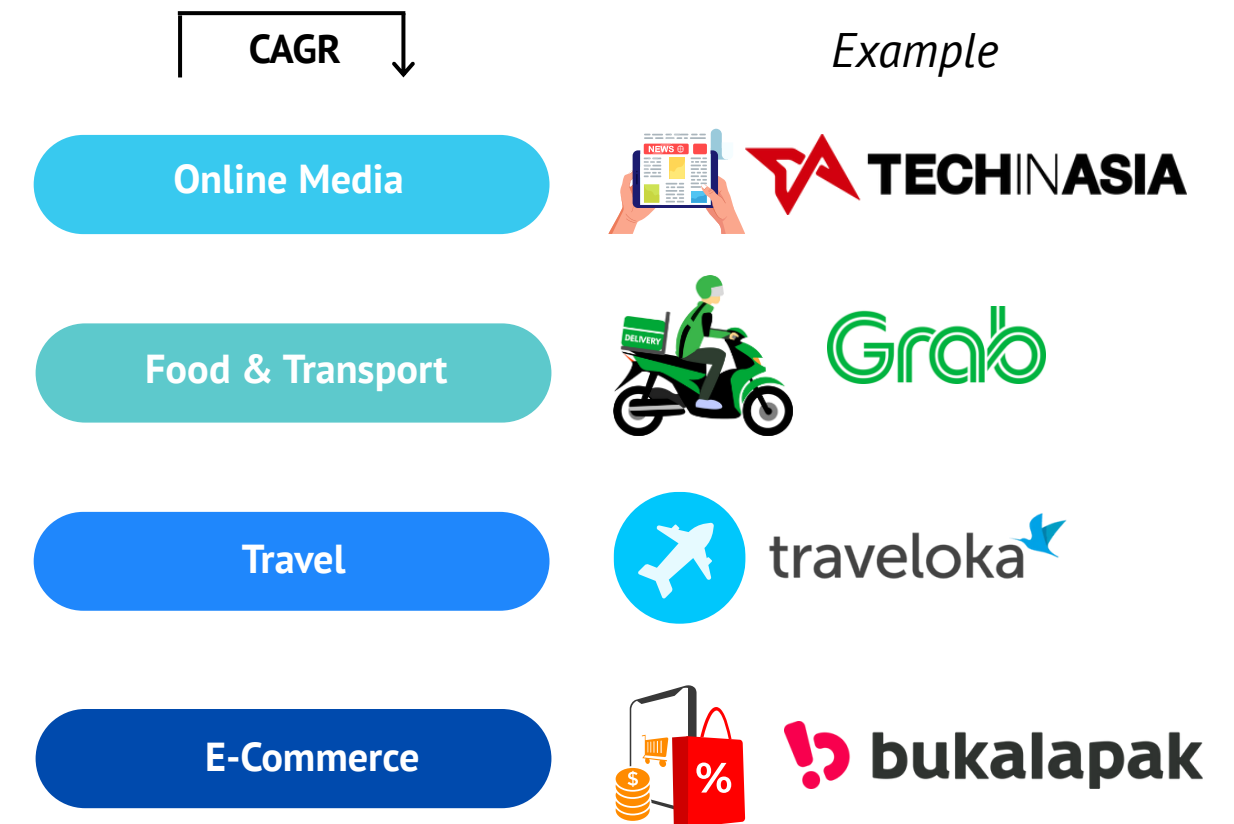


## ASEAN Digital Economy Revenue

(in billion U.S. dollars)



## ASEAN Digital Economy Sectors



## ASEAN Digital Economy Total Revenue in 2023

(in billion U.S. dollars)





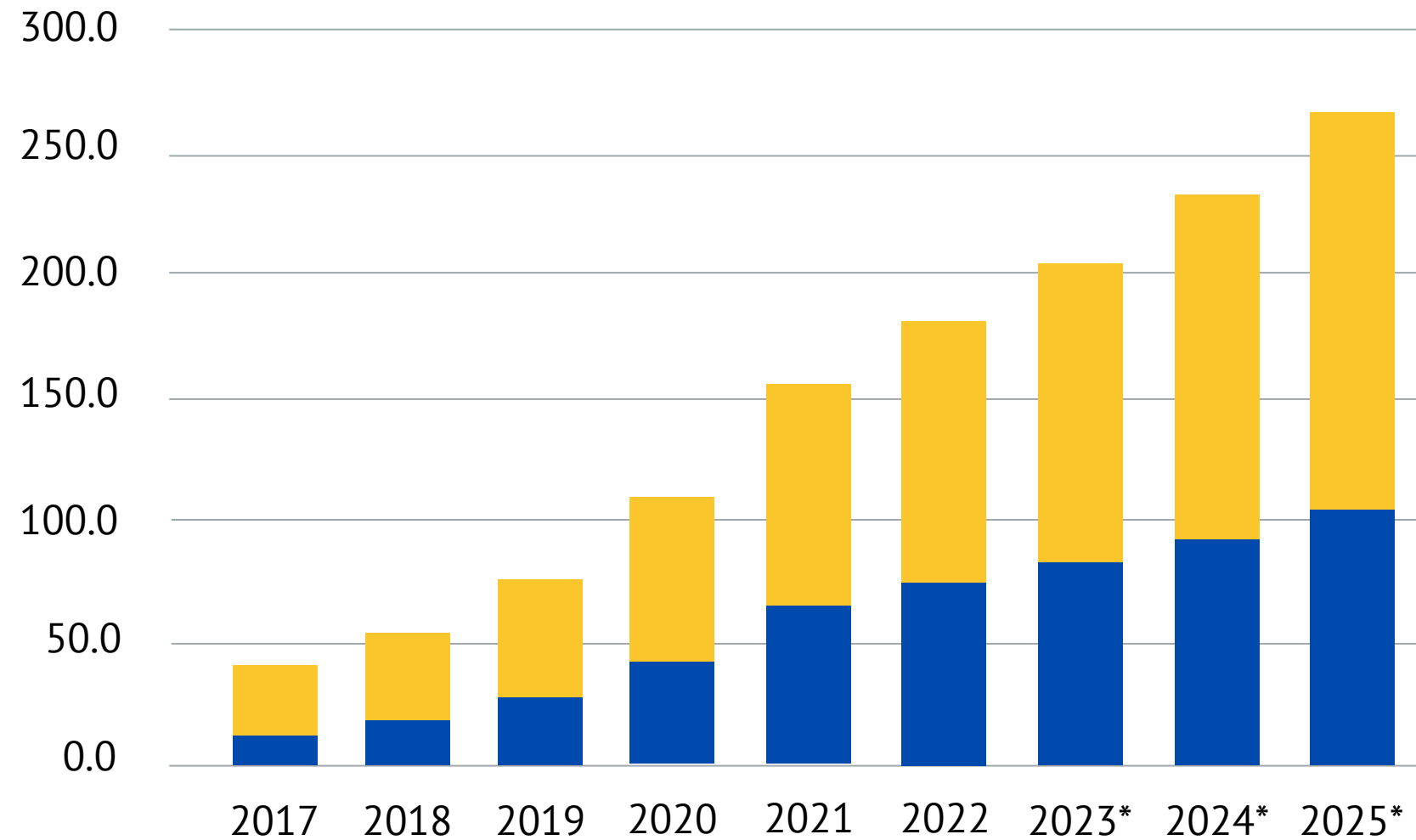
# Indonesia Drives ASEAN Digital Economy Growth

Indonesia leads ASEAN's digital economy, comprising 42% in 2021. Its digital economy to GDP ratio steadily rises, outpacing the ASEAN average, signaling the growing significance of digital sectors in Indonesia's economy.

### The Size of Digital Economy

ASEAN Indonesia

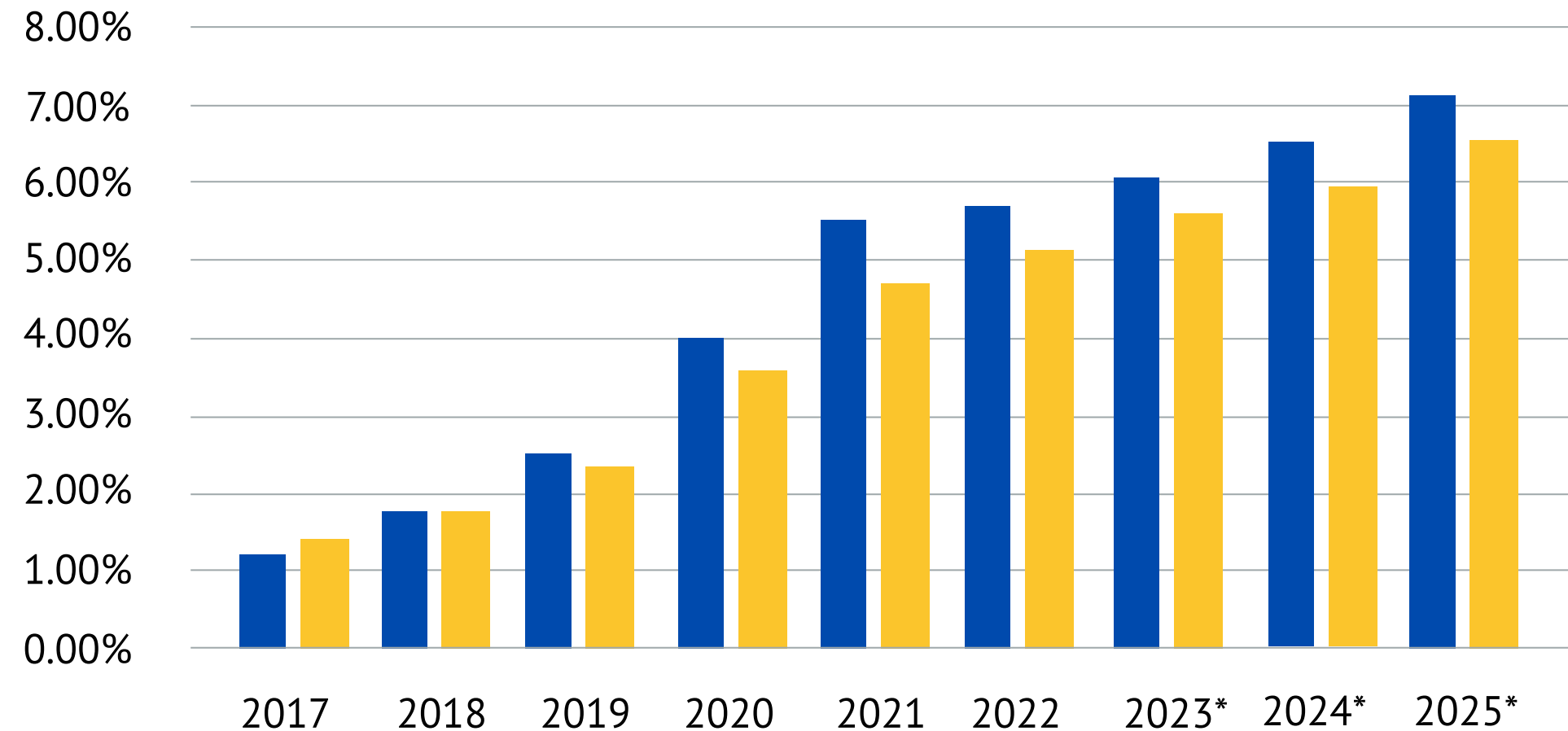
(in billion U.S. dollars)



\*Data after 2022 are projected value

### The Size of the Digital Economy as a Percentage of Total GDP

ASEAN Indonesia



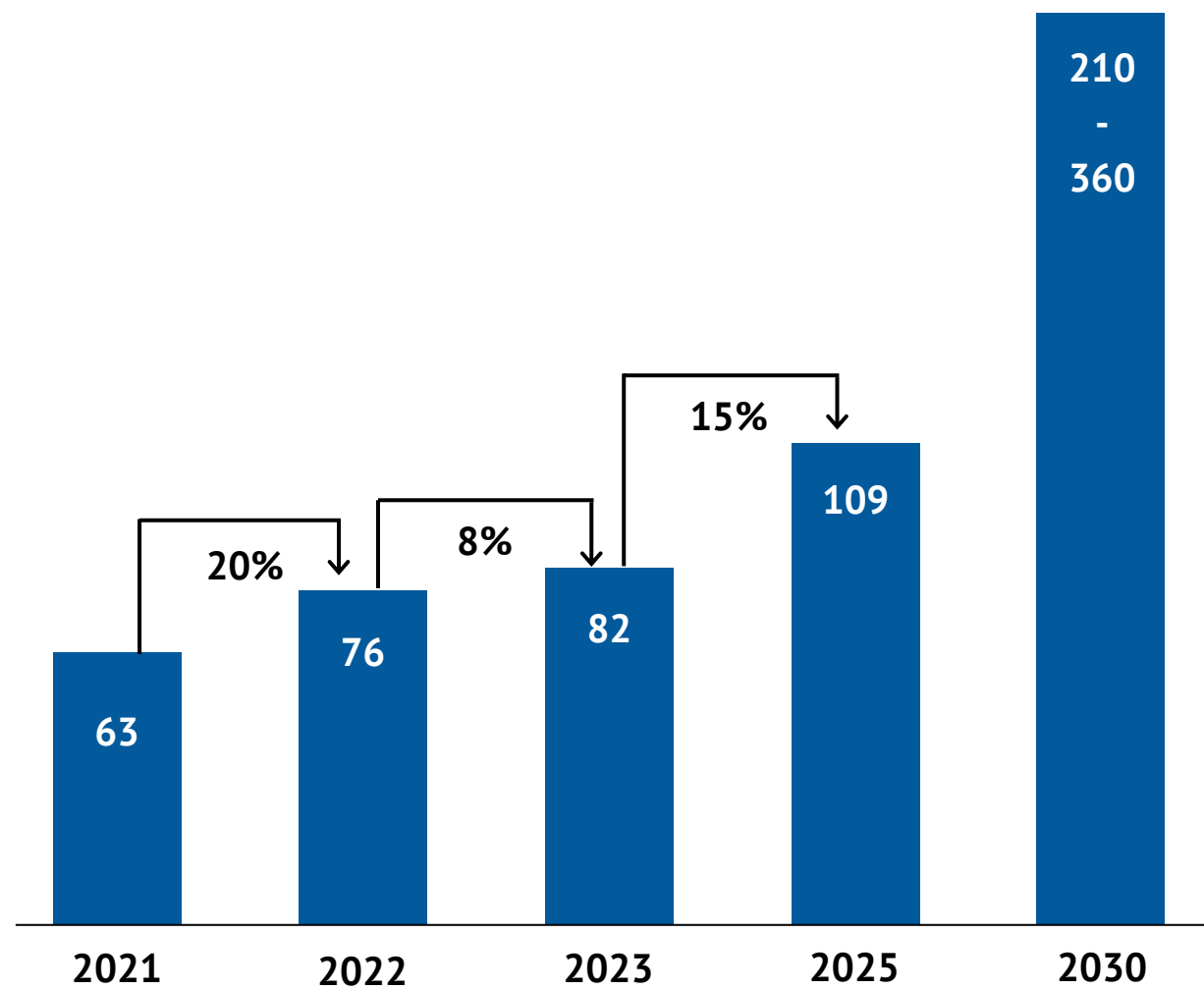
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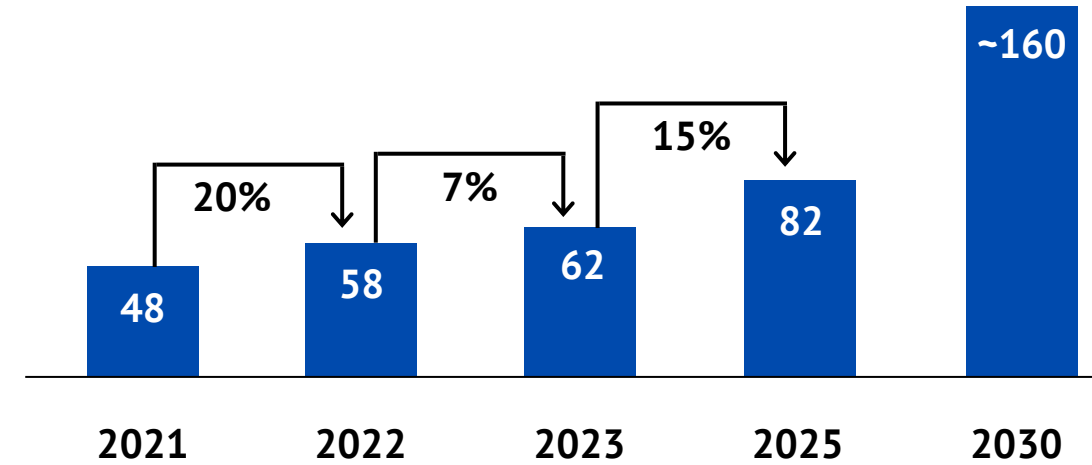
# Key Drivers of Indonesia's Digital Economy

## Overall Digital Economy

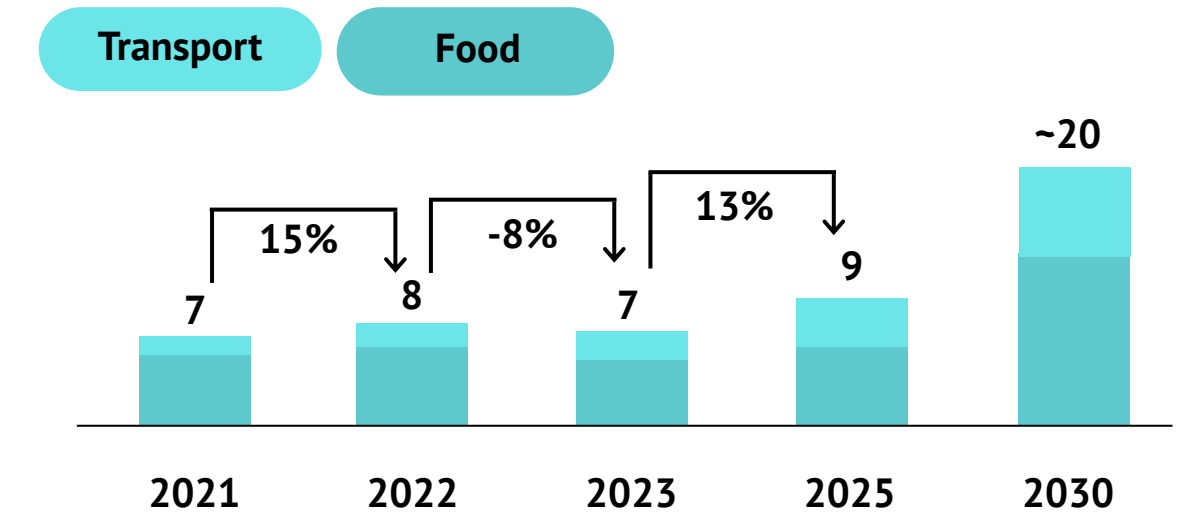
(GMV in billion U.S. dollars) CAGR



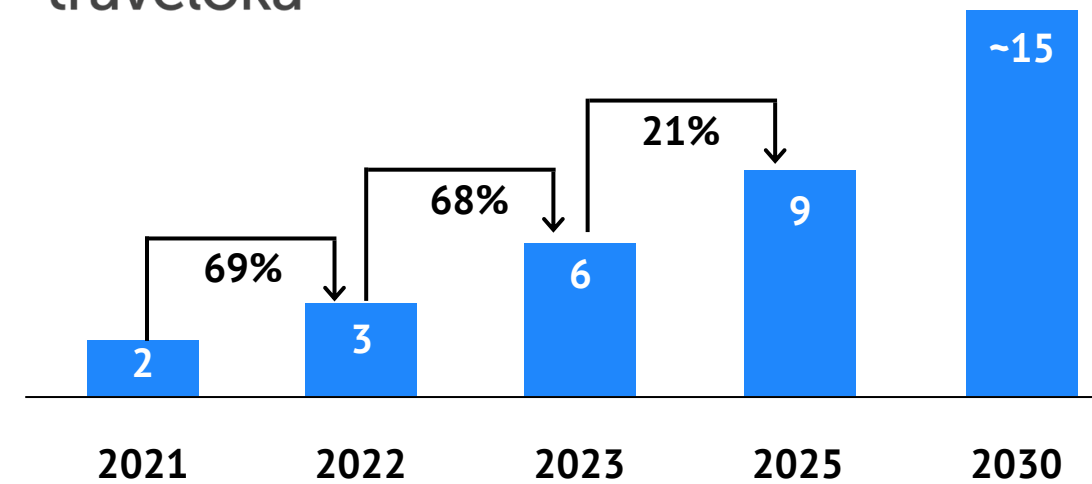
## E-commerce



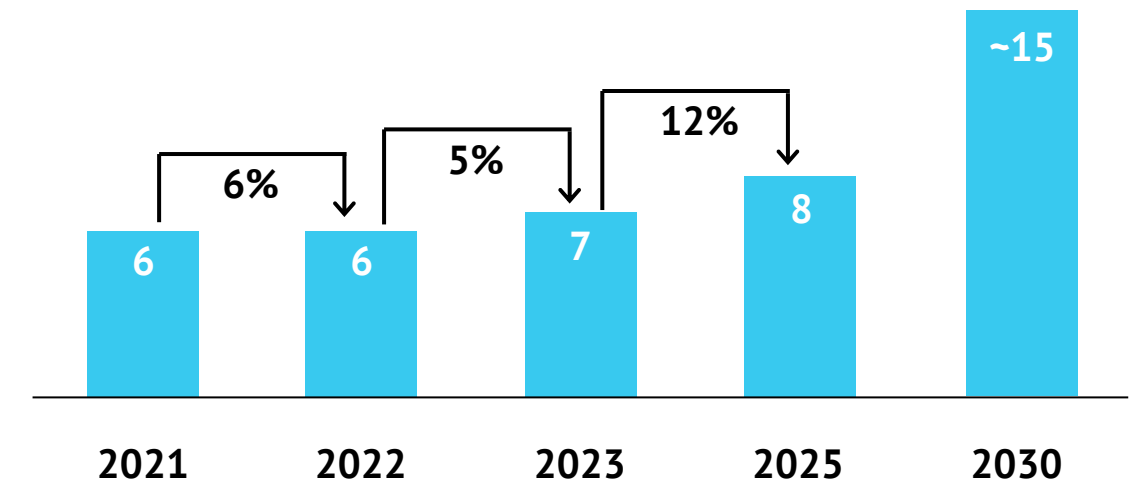
## Transport & Food



## Online Travel



## Online Media





# Artificial Intelligence: Potential for Global Economy

Artificial Intelligence (AI) fundamentally transforms our world by revolutionizing the way we live, work, and interact, reshaping industries, economies, and societal dynamics. The numbers below showcase the significance of AI to our global economy and workforce.



**+14%**

PwC research shows AI could boost global GDP by up to 14% in 2030, adding \$15.7 trillion and positioning it as a significant commercial opportunity in the evolving economy.



**\$15.7 trillion**

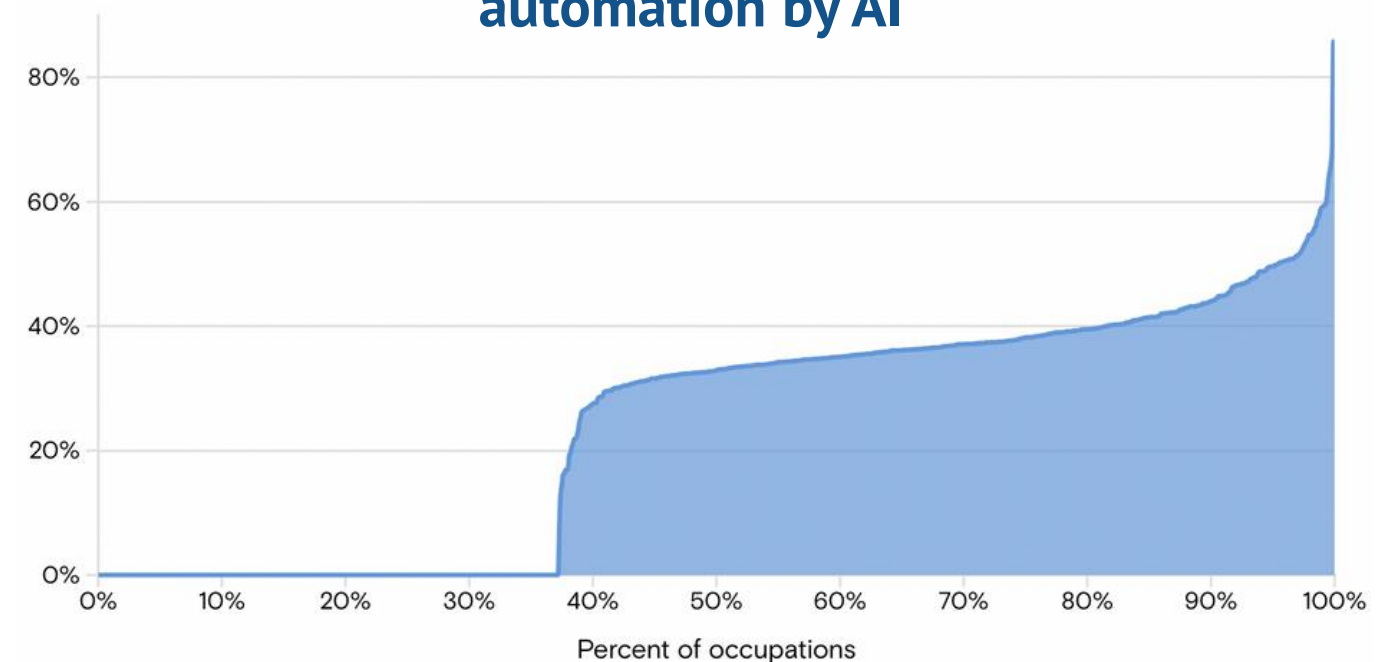
AI is a game-changer, poised to contribute \$15.7 trillion to the global economy in 2030, surpassing the combined output of China and India, with \$6.6 trillion from increased productivity and \$9.1 trillion from consumption-side effects.



**Two Thirds**

of occupations could be partially automated by AI.

**Share of occupational workload exposed to automation by AI**

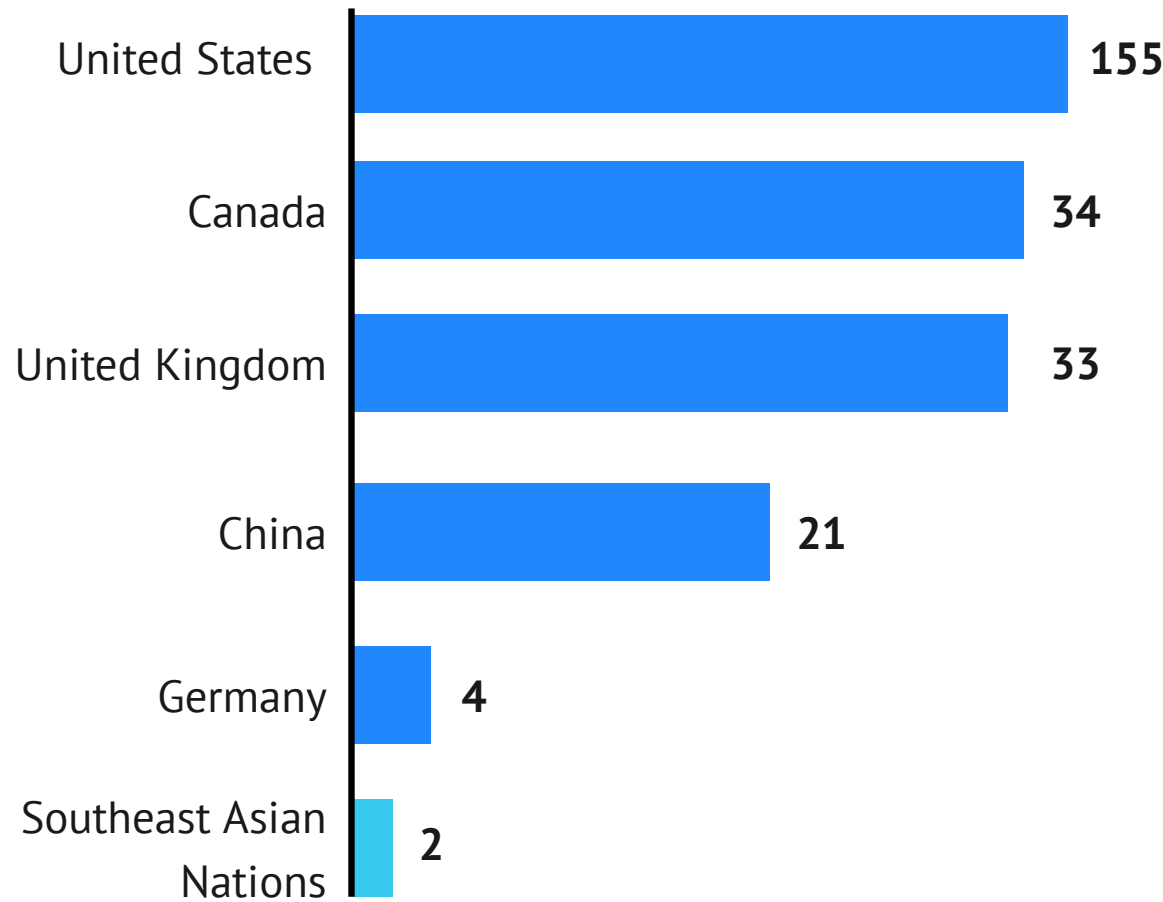




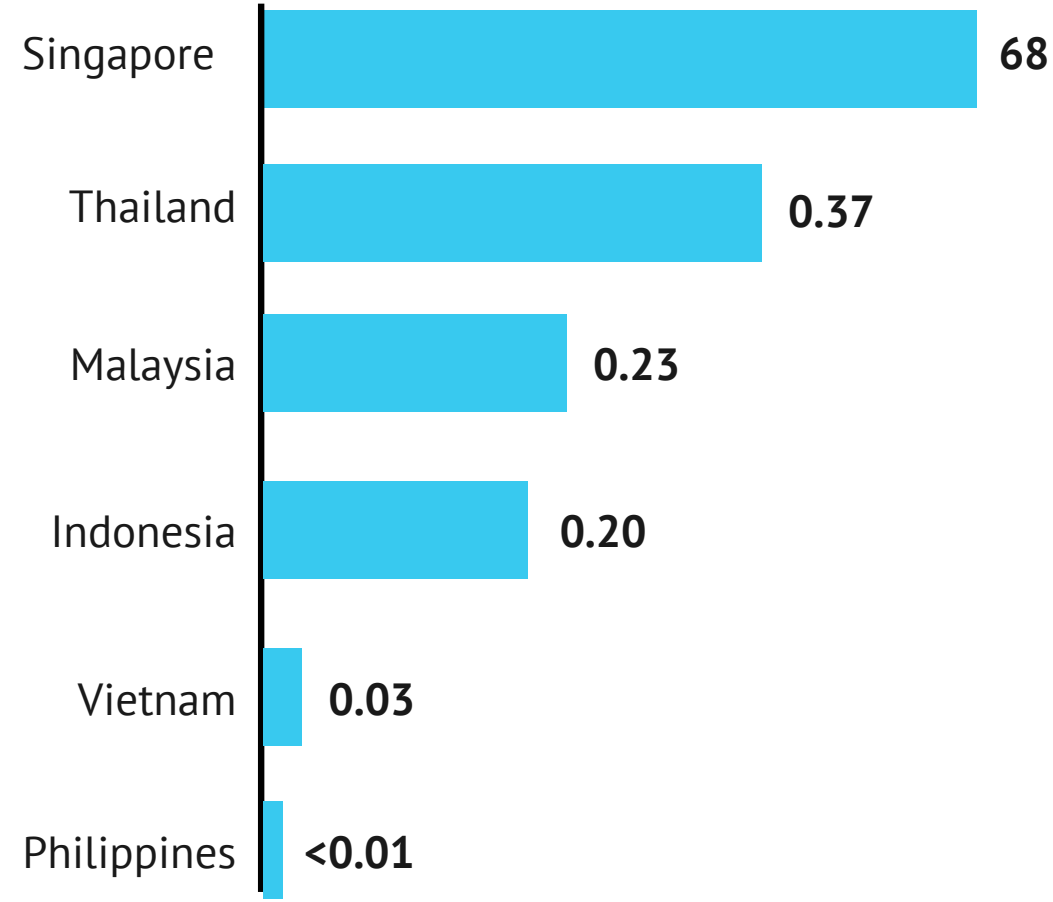
# AI in ASEAN: Nascent but Large Potential

AI holds immense potential to contribute an estimated \$1 trillion to the GDP of the region. This potential has spurred a steady growth in investments in AI solutions providers across the region. Notably, the bulk of these investments are concentrated in Singapore, where local startups are allocating a portion of their revenues towards integrating AI solutions into their operations.

**AI Investments Across the World**  
(\$ per capita, 2019)



**AI Investments Across ASEAN**  
(\$ per capita, 2019)



Source: Kearney and EDBI (2020)

## Economic Impact of AI to ASEAN Countries in 2030 (% of 2030 GDP)





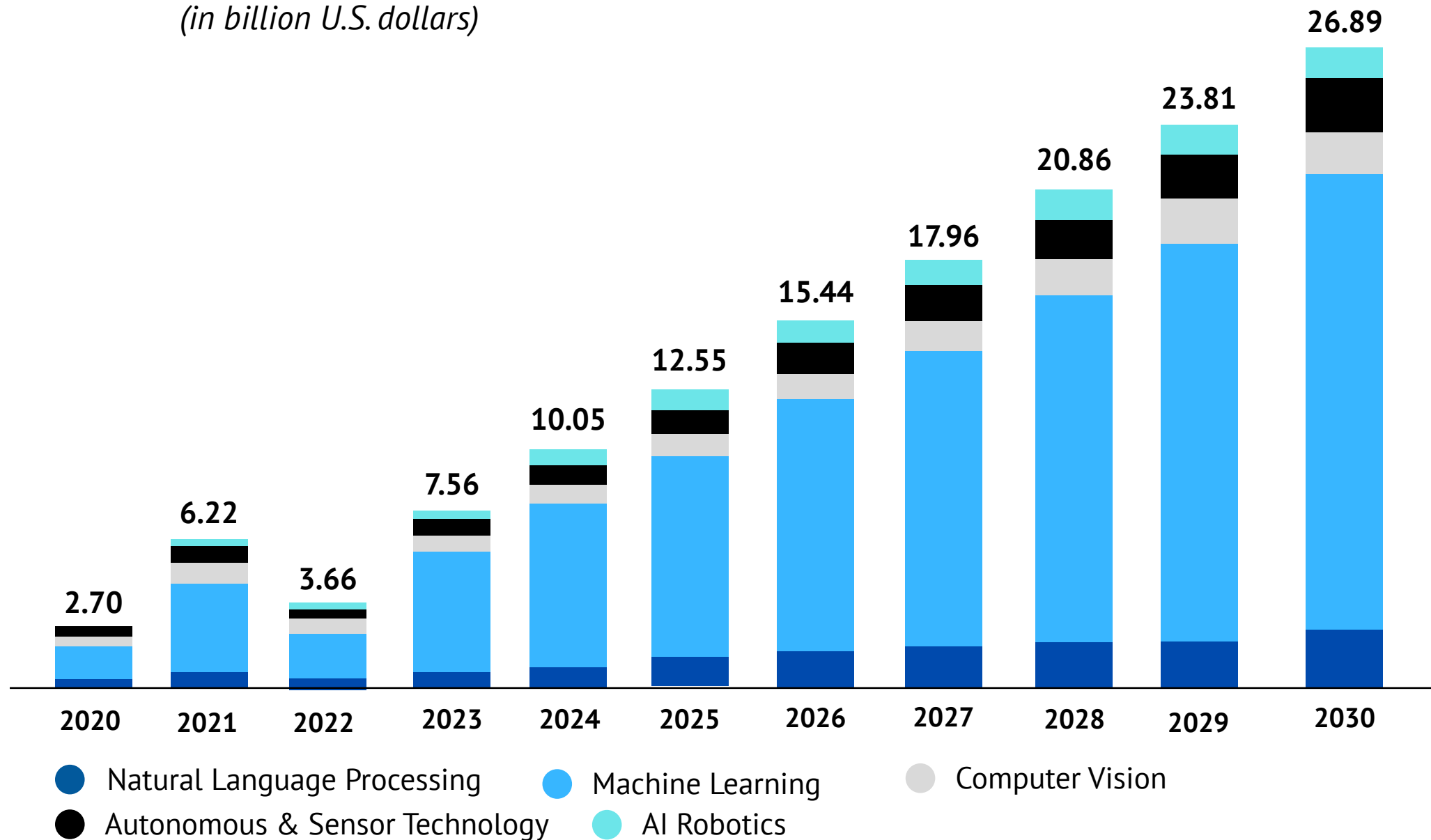


# Market Size of AI in ASEAN

The Artificial Intelligence market in ASEAN region is expected to reach US\$10.05 billion by 2024, with a projected annual growth rate of 17.83% (CAGR 2024-2030), culminating in a market volume of US\$26.89 billion by 2030. This market encompasses software, hardware, and services that facilitate the development and deployment of AI applications.

## AI Market Size in ASEAN Region

(in billion U.S. dollars)



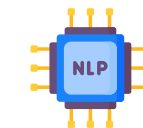
## Six Markets of AI Based on the Technology



**Computer Vision:** This market focuses on technology that helps computers make sense of digital images and videos.



**Machine Learning:** Algorithms teach computer systems to learn from data.



**Natural Language Processing:** This market deals with technology enabling computers to understand and generate human language.



**Artificial Intelligence Robotics:** Combining AI, machine learning, and engineering, this market creates intelligent machines capable of independent tasks.



**Autonomous & Sensor Technology:** Machines and systems equipped with sensors and AI operate independently, responding to changes in their environment.



**Generative AI:** Involving the creation of models that produce new content like images and text, often indistinguishable from human-created content



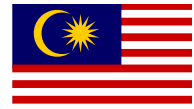






# AI Adoption Across ASEAN

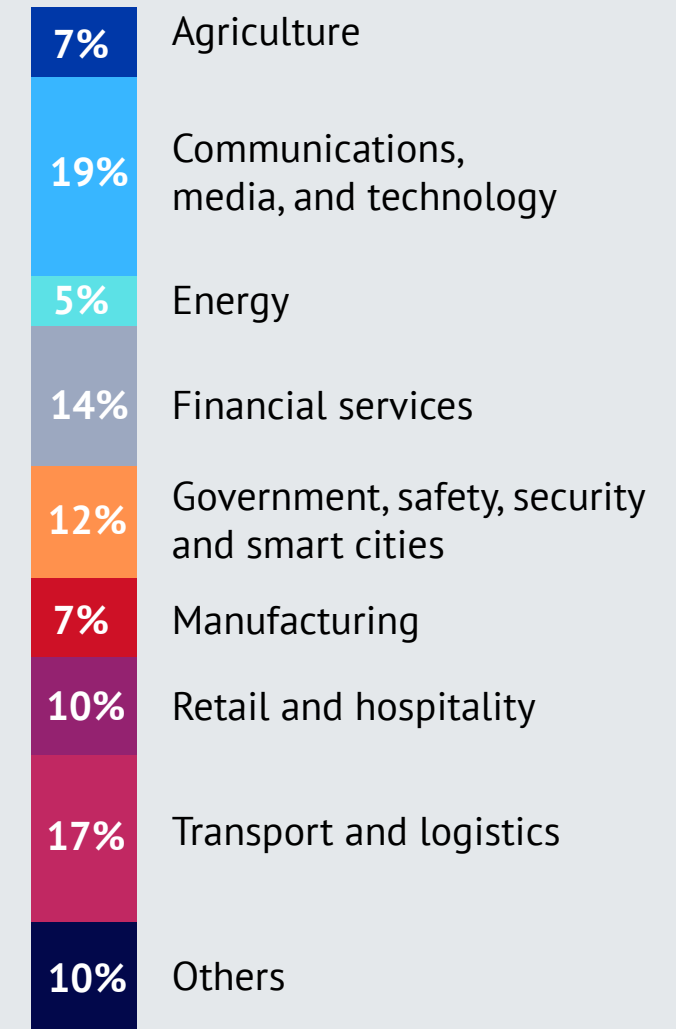
AI adoption in the ASEAN region is still in its early stages, with over 80% of businesses at the initial phase. Notably, companies in the transportation and logistics sectors are among the pioneering adopters.

## Stages of AI Adoption by Countries in the Region

(by % of respondents, region, or country)

		Early Stages: 83% of ASEAN			Advanced Stages: 15% of ASEAN	
		Stage 1 Not interested in investing in AI	Stage 2 Keen to invest / developing AI strategy	Stage 3 Piloting initiatives within discrete activities	Stage 4 Scaling initiatives across discrete activities	Stage 5 End-to-end scaled implementation of AI
	Southeast Asian Nations	2%	27%	56%	9%	6%
	Singapore	2%	22%	58%	12%	7%
	Malaysia	-	26%	56%	9%	6%
	Indonesia	2%	28%	60%	9%	4%
	Thailand	5%	28%	57%	8%	5%
	Philippines	7%	26%	54%	4%	9%
	Vietnam	-	36%	49%	11%	4%

## Advanced Stages by Sectors





# Case Studies: AI Adoption Among ASEAN Government and Startups



## AI for Traffic Management

- Bangkok is implementing AI for traffic management, a collaboration between Bangkok Metropolitan Administration (BMA) and the Office of Transport, Traffic Policy, and Planning.
- AI algorithms will estimate traffic volume, identify bottlenecks, and suggest real-time solutions, like adjusting traffic lights.
- The system will use the city's 1,000 CCTV traffic cameras.

## AI for Poultry Farming



- **Pitik, Indonesian startup**, uses AI to detect and solve issues in chicken coops, improving poultry farming efficiency.
- The AI technology analyzes temperature, humidity, and ventilation, offering actionable advice to farmers.
- Pitik helps farmers supply up to five million chickens monthly in Indonesia, boosting productivity and sustainability in the poultry sector.

## AI for Rice Quality Control



- **Easy Rice, Thai agri-tech startup**, uses AI to inspect rice, ensuring accuracy and reducing human error.
- AI streamlines inspection, boosting efficiency and cutting costs for producers.
- Easy Rice's digitalization allows seamless integration, improving decision-making and quality control in rice production.



## Disparity in AI Readiness within ASEAN

AI integration readiness varies greatly among ASEAN member states due to differences in infrastructure, investment, education, and policies, with some countries like Singapore and Malaysia having robust digital infrastructure while others struggle with disparities.

### Potential Impact of AI Adoption on Employment Patterns in the Region

AI integration in ASEAN has the potential to significantly alter employment patterns by revolutionizing industries, automating tasks, and reshaping work nature. While automation through AI may lead to job displacement in some sectors, it also creates jobs in technology and AI-related fields.

### Tackling Bias and Aligning AI with ASEAN Values

Machine learning, the backbone of AI, is prone to biases that can perpetuate discrimination and inequalities. Tackling biases is essential to ensure fairness and inclusiveness, aligning with ASEAN values.



### Developing AI Policies in Response to Global Regulations

With the global proliferation of AI, policies and regulations on its development and deployment are being established worldwide. Advanced countries have already implemented AI regulations, e.g. the EU AI Act and the Hiroshima AI Process

### Positioning AI within ASEAN's Digital Integration Frameworks

ASEAN's digital integration framework aims to strengthen digital connectivity, promote transformation and innovation, and stimulate economic growth. Integrating AI into this framework requires strong digital infrastructure, human capital development, and responsible AI practices.

# Navigating AI in ASEAN Region



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# THANK YOU



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