



MINISTER OF INDUSTRY
REPUBLIC OF INDONESIA

INDUSTRY 4.0 TO DRIVE ECONOMIC GROWTH AND TRANSFORM INDONESIAN WORKFORCE

Delivered on:

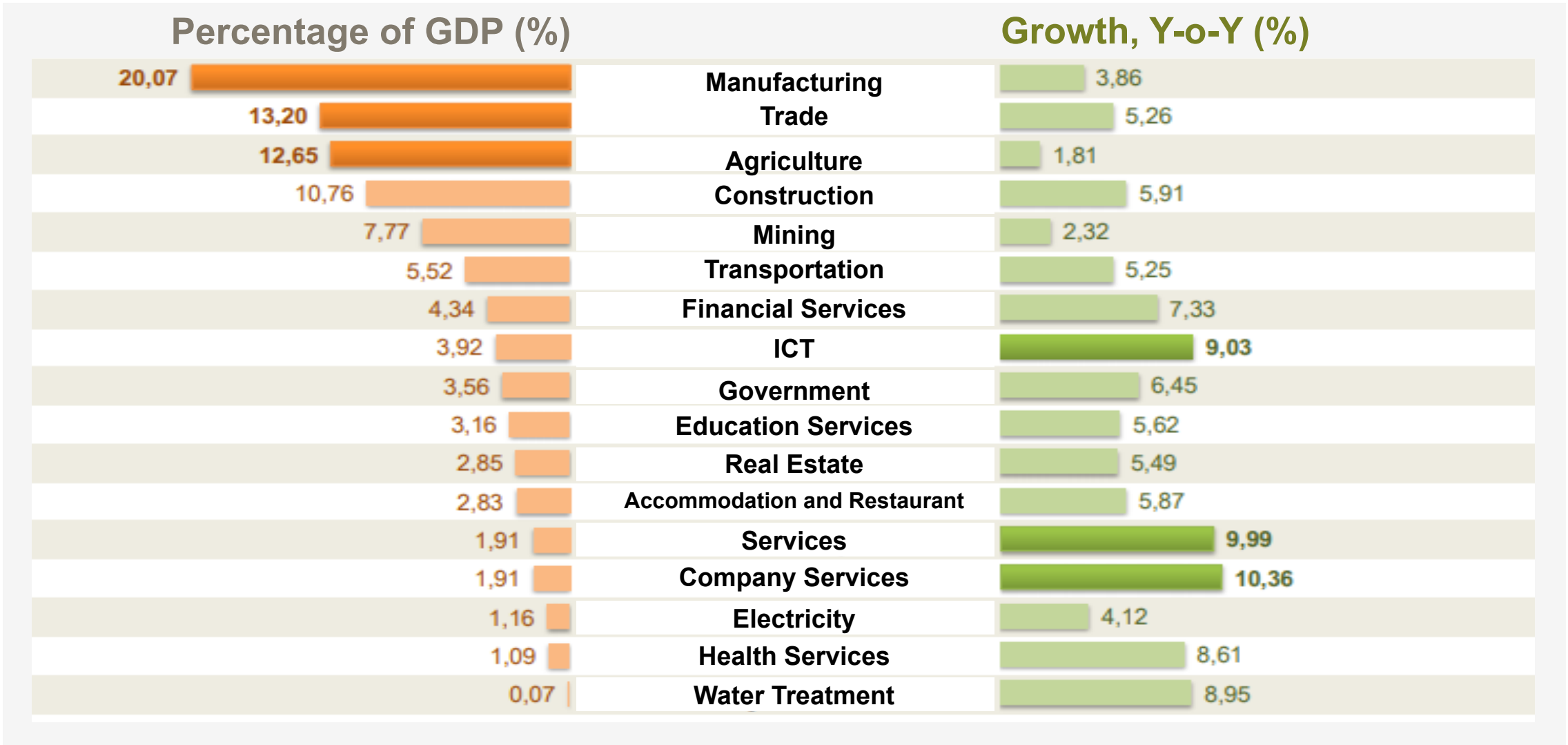
Indonesia Development Forum 2019
Ministry of National Development Planning

Airlangga Hartarto
Minister of Industry

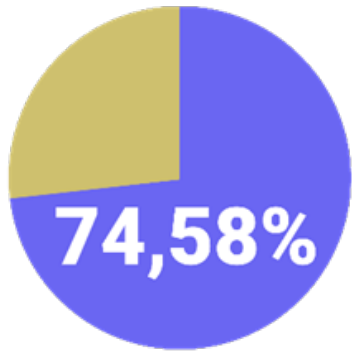
Jakarta, 22nd July 2019

The Contribution of Manufacturing Sector toward Indonesia's GDP

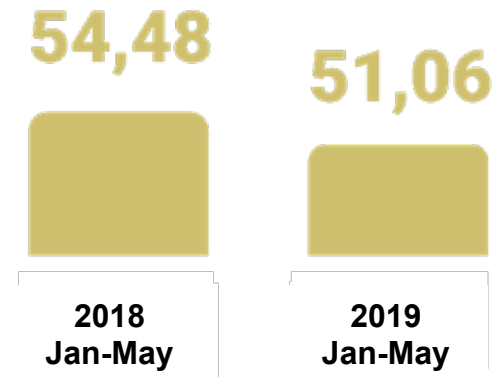
Indonesia's manufacturing sector contribution toward GDP is 20,07% during The First Quarter of 2019. Policies in a country in promoting manufacturing sector is one of the influential factors.



Industrial Export Jan – May 2019 (US\$ Billions)



Until May 2019, Industries export US\$ 51,06 Billions, down 6,28% from same period on 2018 which reached value US\$ 54,08 Billions. Industrial exports contribute 74,58% of national export until May 2019 that reached value US\$ 68,46 Billions.

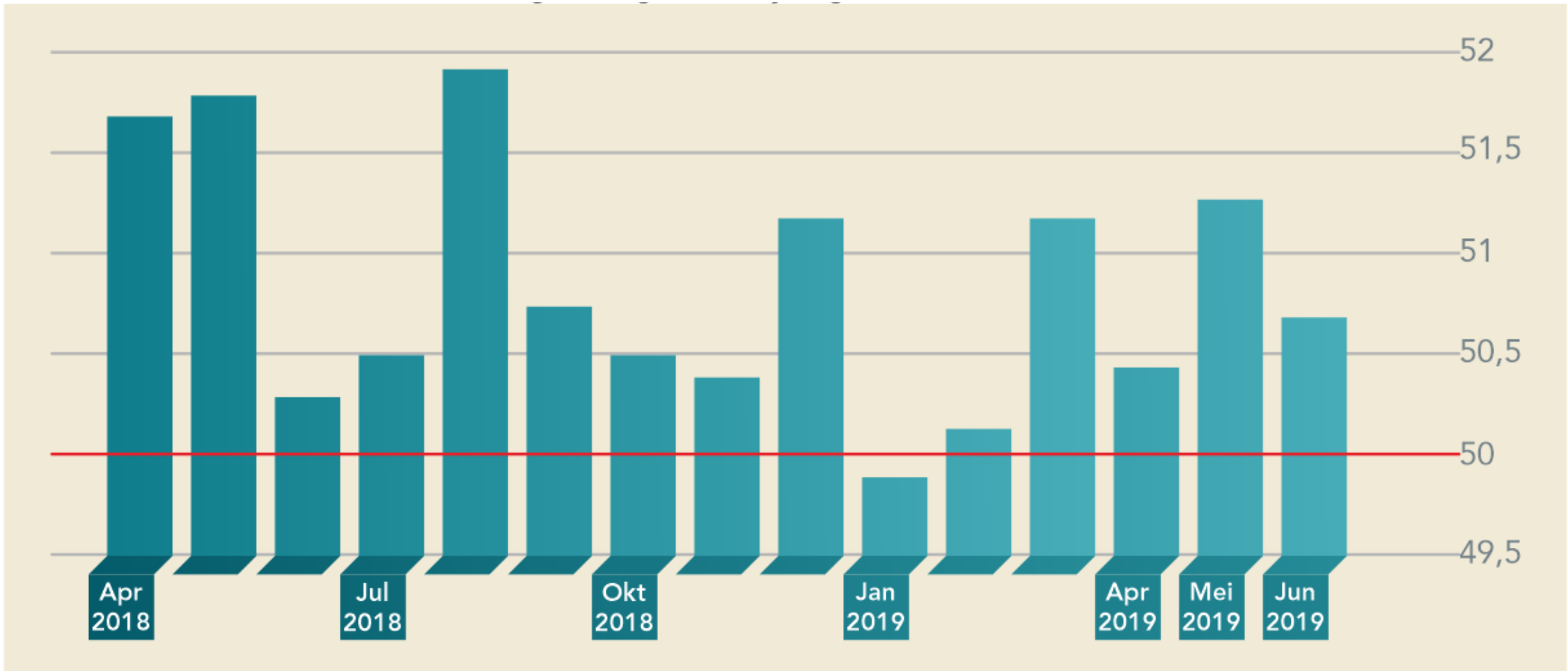


Top 5 Exporting Industries (US\$ Billions)

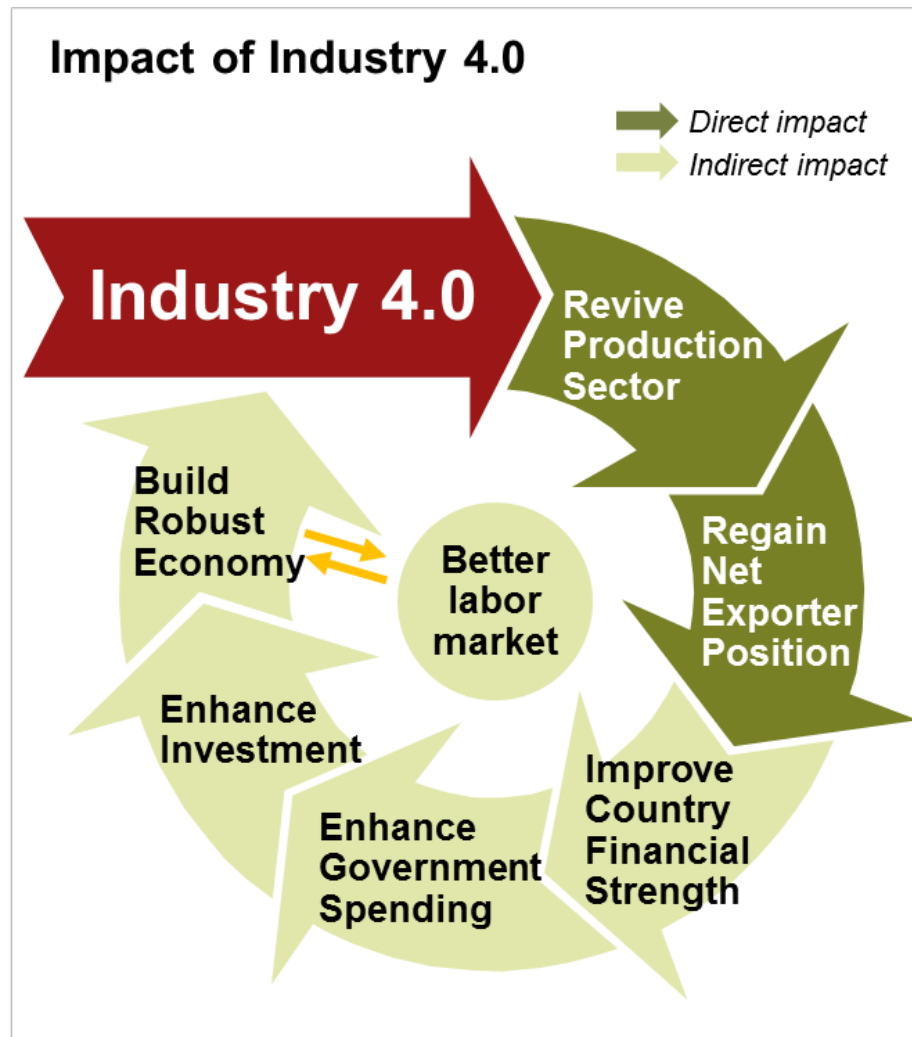
1.Food Industries	10,56
2.Basic Metal Industries	6,52
3.Chemical and Chemical Product	5.38
4.Apparel Industries	3,55
5.Paper & Paper Products Industries	3,01

Purchasing Manager Index Indonesia (2018 - Juni 2019)

Indonesia PMI shows an expansion performance, this can be seen through the PMI, on average, above 50



Industry 4.0 can revive the Indonesian manufacturing sector; Indonesia should launch “Making Indonesia 4.0” initiative



“Making Indonesia 4.0” can create massive uplift in overall GDP, manufacturing contribution & employment opportunity

Estimated Benefits¹ of “Making Indonesia 4.0” Implementation

GDP Growth

+1-2% p.a.
incremental GDP
growth from
baseline in 2018-
2030

- Improve real GDP growth from ~5%² to 6~7% YoY between 2018-2030

Job Creation

>10 Million³
additional
employment
opportunity from
baseline by 2030

- Increase new employment from +20 mn to >30 mn additional jobs by 2030

Manufacturing GDP Contribution

>25% of
manufacturing GDP
contribution by
2030

- Boost manufacturing contribution to GDP from ~16%² to >20% by 2030

1. Benefits are estimated based on the incremental difference between the aspirational case and the base case in A.T. Kearney economic models

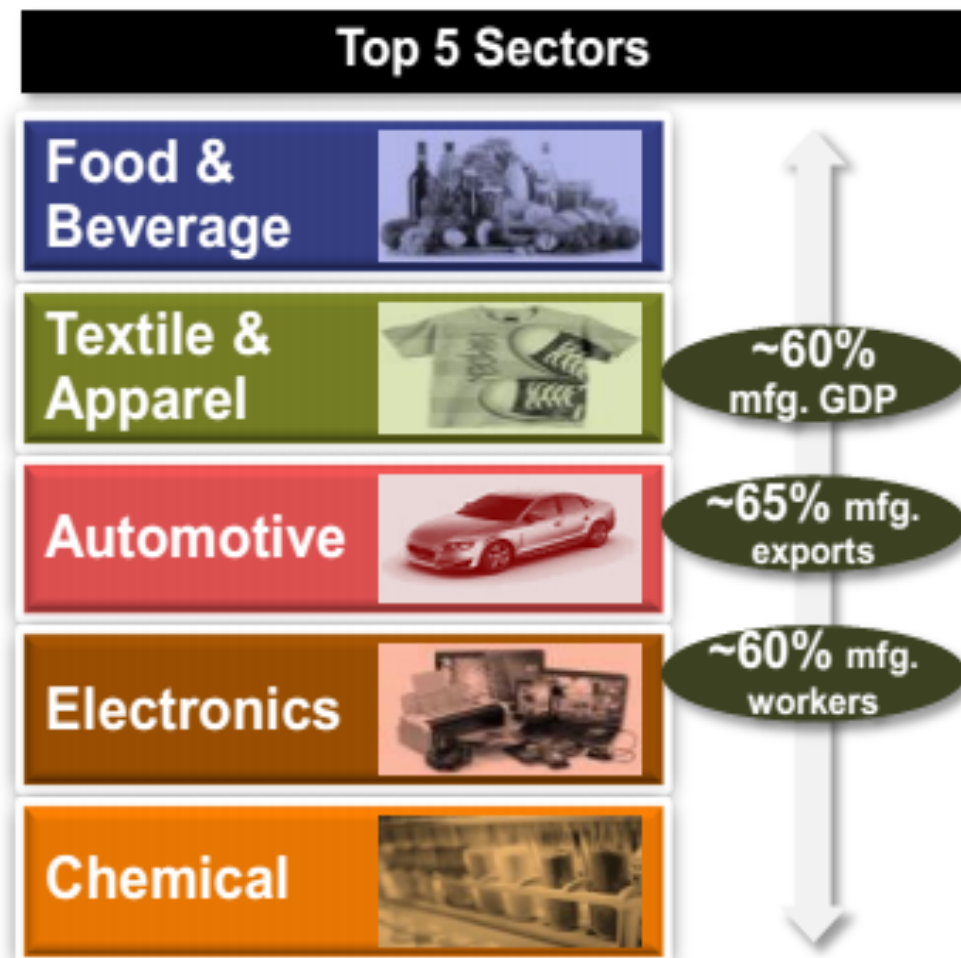
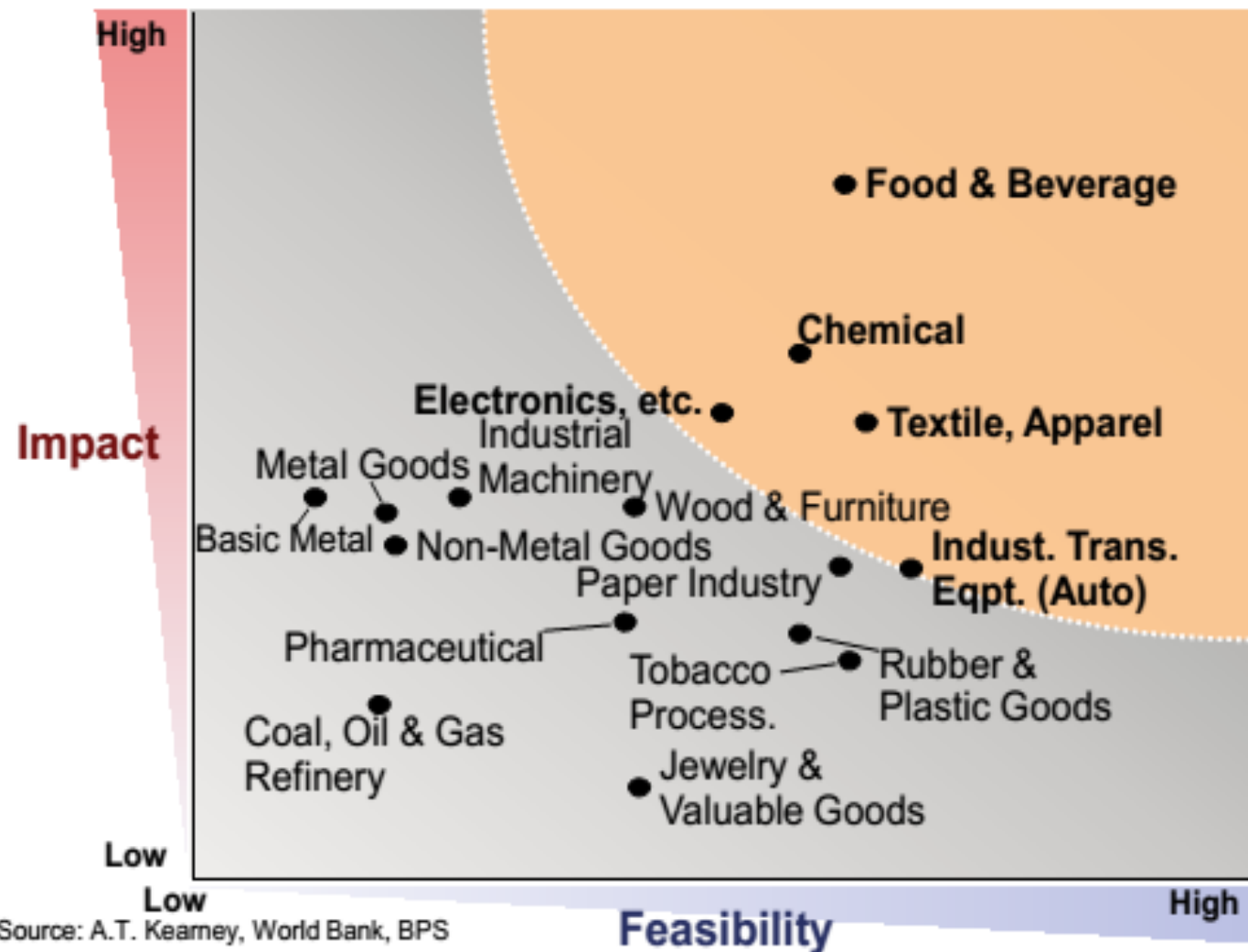
2. In the base case, real GDP growth is estimated at ~5% YoY between 2018-2030, additional jobs created is estimated at ~22 million by 2030 and manufacturing contribution is estimated at ~16% of total Indonesian GDP in 2030

3. Industry 4.0 implementation can absorb 30~50% of the 30 million additional working age population by 2030; The rest of the workforce are already absorbed in the base case scenario

Source: World Bank, Badan Pusat Statistik, Ministry of Industry, A.T. Kearney

5 sectors were selected for “Making Indonesia 4.0”

Sector Prioritization Matrix



Policy Direction 2020-2024

#1



Increasing Productivity

Fact 1

Indonesia real labor productivity has **stagnated** in the past decade. China increased real labor productivity by 2X

Fact 2

Product design and **core manufacturing skills are limited**. Assembly/after-sales services dominate skills landscape

#2



Increasing Manufacturing Export Competitiveness

Fact 1

Manufacturing export share is 73 percent of total export; but Indonesia is significantly outcompeted by peers in manufacturing exports, and >50 percent of export are commodity-related

Fact 2

Indonesian Export/GDP ratio (19%) is **well below** Thailand (69%), Vietnam (93%) and Singapore (172%)

#3



Strengthening Strategic Upstream Industries

Fact 1

71 percent of Indonesia total imports are for **raw materials and intermediate input products**

Fact 2

69 percent of Chemical import are subject to **Non-Tariff Measures**, further reducing firms cost competitiveness

Source: BPS, World Bank, WITS, Economist Intelligence Unit, Atlas of Economic Complexity, APINDO, Bappenas-ERIA Joint Study (2018), Bappenas-ADB Joint Study (2018), Bappenas-JICA Joint Study (2017)

6 Key Strategies

#1 Strengthening Investment Climate, Trade Openness and Involvement in Global Production Network

#2 Strengthening RD&D Capabilities, Innovation Drive and Acceleration of Technology Adoption

#3 Increasing Economic Diplomacy and Utilization of Free Trade Agreements

#4 Optimizing Potential Sources of Economic Growth

#5 Strengthening the Supporting Pillars of Manufacturing Sector Growth

#6 Creating Conducive Macroeconomic Policies to Support Manufacturing Development

SUPER TAX DEDUCTION



**Vocational Development
(DEDUCTION UP TO 200%)**



**Labor Intensive Industry
(DEDUCTION UP TO 60%)**



**Research and Development
(DEDUCTION UP TO 300%)**

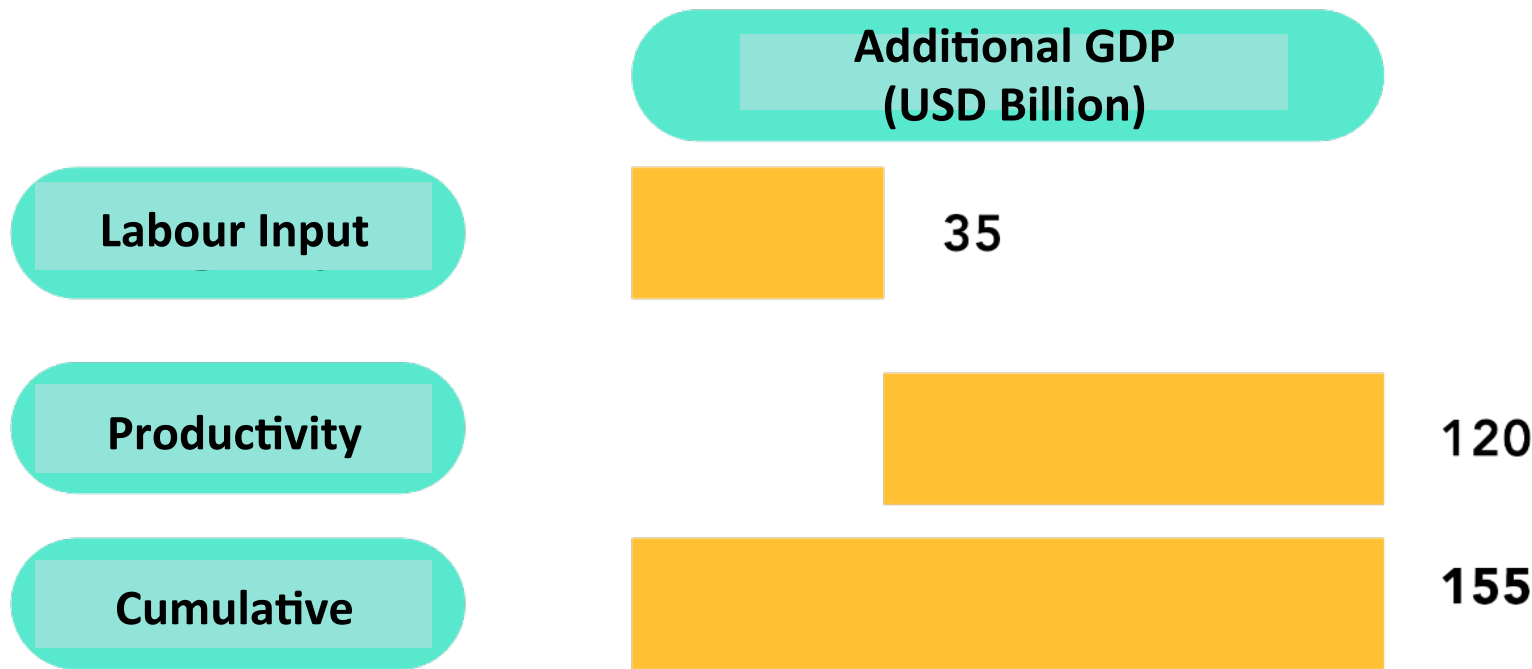
To strengthen the quality of Indonesia human resources and innovation as well as the development of labor intensive industry with export orientation



Regulate in Government Regulation No.
45/2019

INDONESIA HAS OPPORTUNITY TO GET ADDITIONAL GDP OF USD 155 BILLION BY 2025

Through the implementation of Industry 4.0, the additional GDP will be gained from Labour Input and Productivity Enhancement



Source: Global Insight (WMM), IHS data, Euromonitor International, Team analysis

Addition of Digital Workforces:



Source: McKinsey,



At the WEF Annual Meeting of the New Champion held in China this year, the WEF established 10 new pilot companies in terms of implementing Industry 4.0 according to their respective fields. Of the 10 companies, 2 (two) companies are from Indonesia, namely:

PT. Schneider Electric Manufacturing Batam

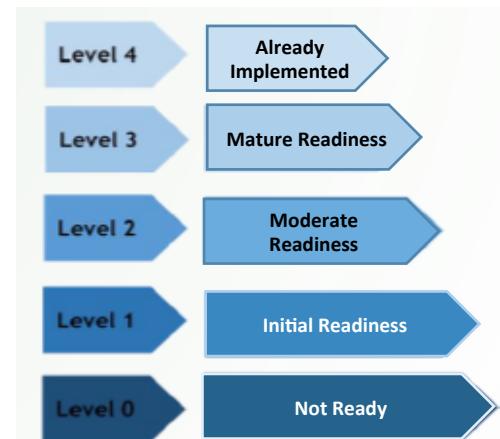
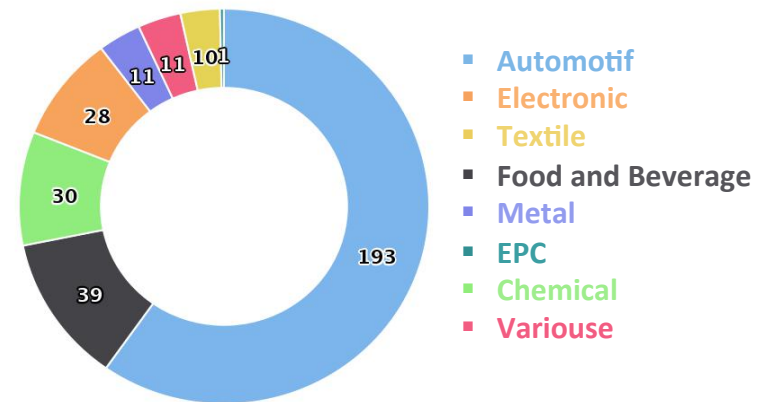


PT. Petrosea, Tbk.



INDI 4.0 *Self-Assessment* Result on 323 Companies

*INDI 4.0 : Indonesia Industry 4.0 Readiness Index



Industrial Sector	Total	INDI 4.0 Value
Food & Beverages	39	2,47
Textiles	10	2,51
Chemicals	30	2,31
Automotive	193	1,72
Electronics	28	1,84
Metal	11	1,57
Various	11	1,97
EPC	1	2,74
Mean		1,89

INDUSTRY 4.0 TRANSFORMATION MANAGER TRAINING



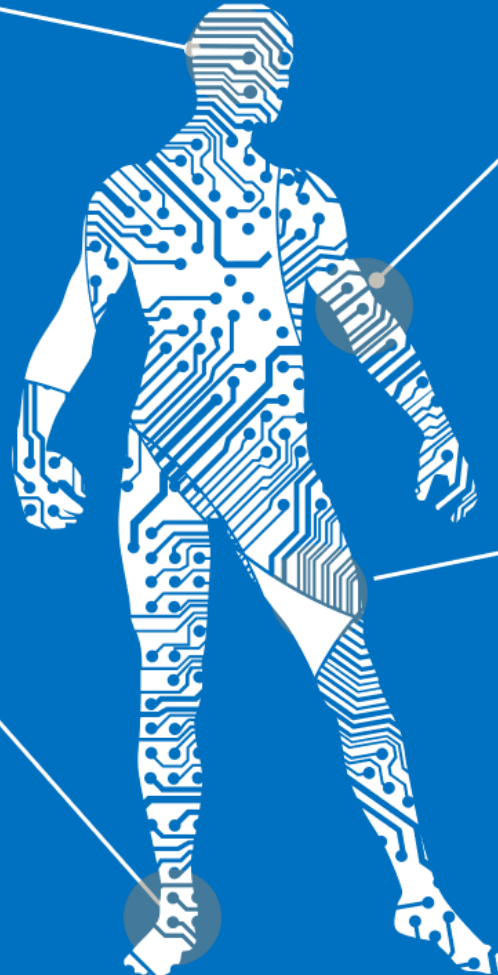
KNOWLEDGE MANAGEMENT

- Vertical and Horizontal Integration
- Main Technology for Industry 4.0
- Smart Factory
- Industry 4.0 Impact
- Key Performance Indicator
- Cyber Security



Industry 4.0 Transformation Manager

- To lead and drive the implementation of industry 4.0 for the company



Industry 4.0 Transformation Expert

- Acknowledgement from a renowned certification institute with the qualification in accordance with industrial needs



Industry 4.0 Transformation Manager

- Understand the digital necessity for production, logistic as well as the challenge



INDUSTRIAL VOCATION REVITALIZATION PROGRAM

MINISTRY OF INDUSTRY 2020-2024



175 Politechnic



Strengthening of 2.612
Vocational high School



1.553.500
Labour Force



Competent Industrial Workforce



Vocational High
School, Community
Academy and
Polytechnic

Industrial Chamber of
Commerce, Industry &
Professional Association,
Industry Actor

Ministry of
Industry

Ministry of
Education and
Culture

Ministry of
Manpower

Ministry of Technology
Research & Higher
Education

Digital Capability Center Permata Hijau, Jakarta



SERVICES

1.DEVELOPMENT OF INDUSTRIAL TECH.:

- Product and process design
- Production technology
- Production planning and monitoring
- Quality assurance and maintenance
- Green Industry

2.DEVELOPMENT OF INDUSTRIAL HR:

- Agent of *Industry 4.0* Transformation Process
- Smart Factory training
- Robotics and Automation training
- Industrial Internet of Things training
- Additive Manufacturing training
- Cyber Security training
- Data Analytics training

3.DIGITAL TALENT INCUBATION

- System integration for business process

Organizational Program

- a. Public Private Partnership
- b. Focal Point of Industry 4.0 in MoI

Focussed Technologies:

- a. *Cyber Physical Research & Learning Factory*
- b. *Machining & Robotic Center*
- c. *Process Automation Center*
- d. *Quality control & maintenance*
- e. *Simulation Center & Additive Manufacturing*
- f. *Metrologi Center*
- g. *Big Data dan Analityc Center*
- h. *Mini Plant Fast Moving Consumer Goods & Smart Packaging*

Mini Plant and Polytechnics

- a. Textiles & Clothing 4.0 Mini Plant in Bandung Textiles Polytechnics (STTT)
- b. Footwear Technology 4.0 Mini Plant in ATK Yogyakarta
- c. Advanced Manucfaturing Mini Plant in ATI Makassar Polytechnics
- d. Data and Analytic Center in BCIC, Denpasar

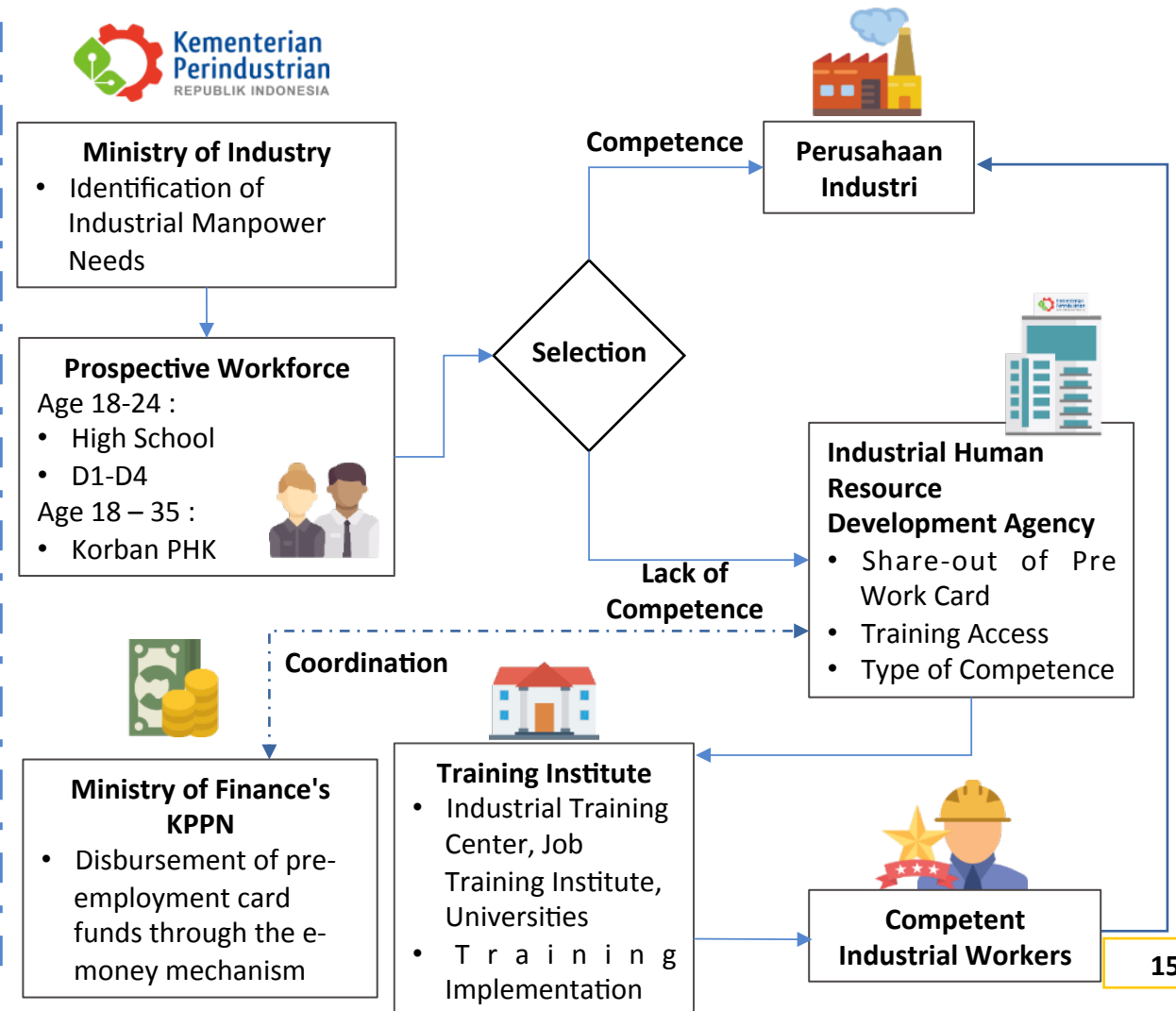
PRE-JOB CARD OF INDUSTRIAL WORKER



Preparation of competent industrial workforce as much as 1,587,500 for 5 years. For 2020 there are 317,500 people to be placed to work in the Industry, as follows :

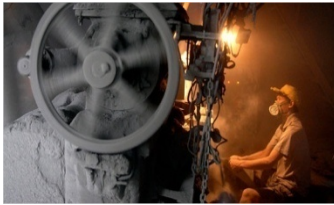
- **Training 3 in 1 (Training, Certification, & Job Placement)** for 100,000 prospective industrial workers and persons with disabilities. **(Rp. 7,000,000 per person)**
- **Pre Work Card for training 100,000 Indonesian Prospective Workers** in the entire Industry. **(Rp. 7,000,000 per person)**
- **Retraining / Reskilling / Upskilling for 10,000 industrial workers.** **(IDR 10,000,000 per person)**
- **Competency Certification for 100,000 Industrial Workers.** **(IDR 1,000,000 per person)**
- **Vocational Education Program D1 & D2 Based on Competence for 7,500 Students.** **(Rp. 10.000.000 per person)**

DIAGRAM OF PRE-JOB CARD OF INDUSTRIAL WORKER





THANK YOU



MINISTRY OF INDUSTRY OF THE REPUBLIC OF INDONESIA

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