

Industrial Policy in Context of Sustainable Development and Industry 4.0

Dr. Svitlana Tarasenko,
International Economic Department,
Sumy State University, Ukraine,
tarasenkosvitlana1@gmail.com

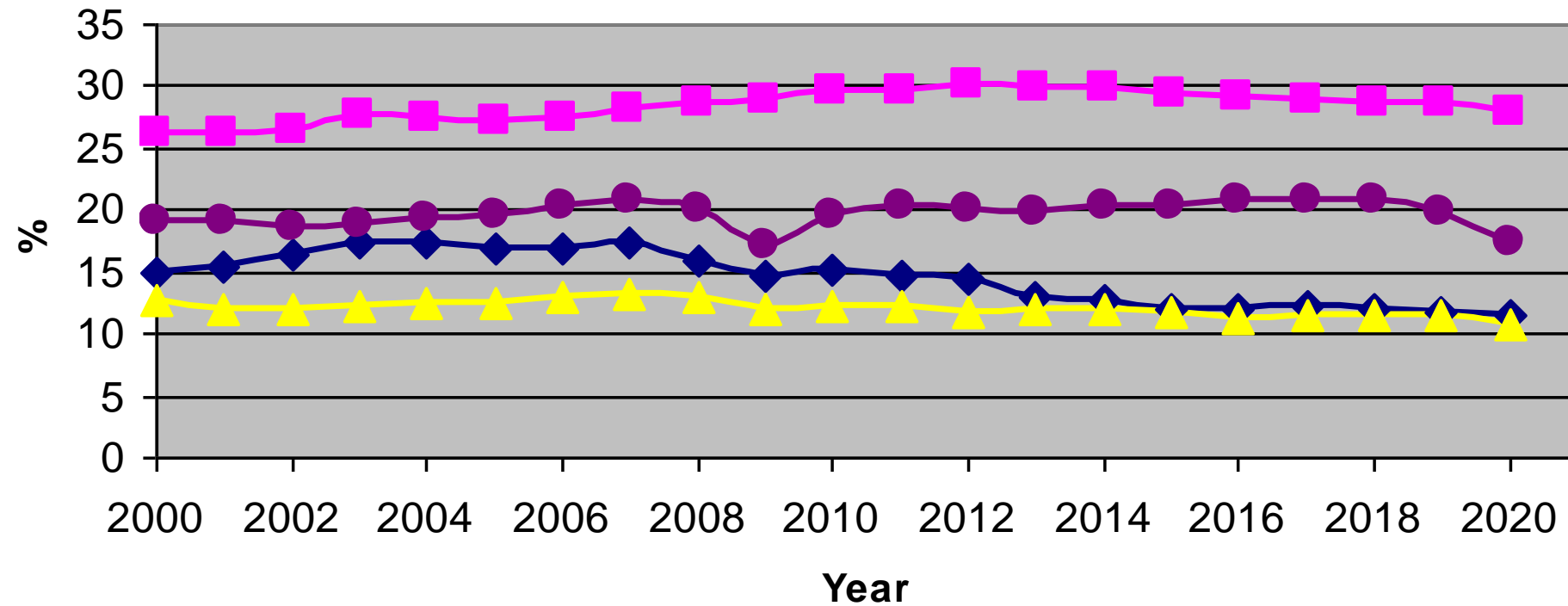
Problem Question

- Industrialization remains the main path of the country's development. It allows creating and developing opportunities to be successful in the new technological paradigm. Industrialization is determined by industrial policy and correlate with Sustainable Development Goal, 9 - industry, innovations, infrastructure. Accordingly, the achievement of sustainable development and the SDG 9 are directly related to the formation of the country's industrial policy.
- At the same time, the industry is now in transitional stage of formation and development, i.e. new technologies of Industry 4.0 are already available, but their diffusion into production processes have just begun. That why new system of industrial policy need to be constructed.
- Purpose: to determine components of Industrial Policy in Context of Sustainable Development and Industry 4.0.
- Research methods: formal logic, dynamic and comparative analysis.

Competitive Industrial Performance Index, 2021

№	Country	Scores	Rank
1	Germany	0,46	1
2	China	0,386	2
3	USA	0,353	3
4	Ukraine	0,035	69

Manufacturing Value Added as a Proportion of GDP, 2000-2020 (UNIDO data)



◆ Ukraine ■ China ▲ USA ● Germany

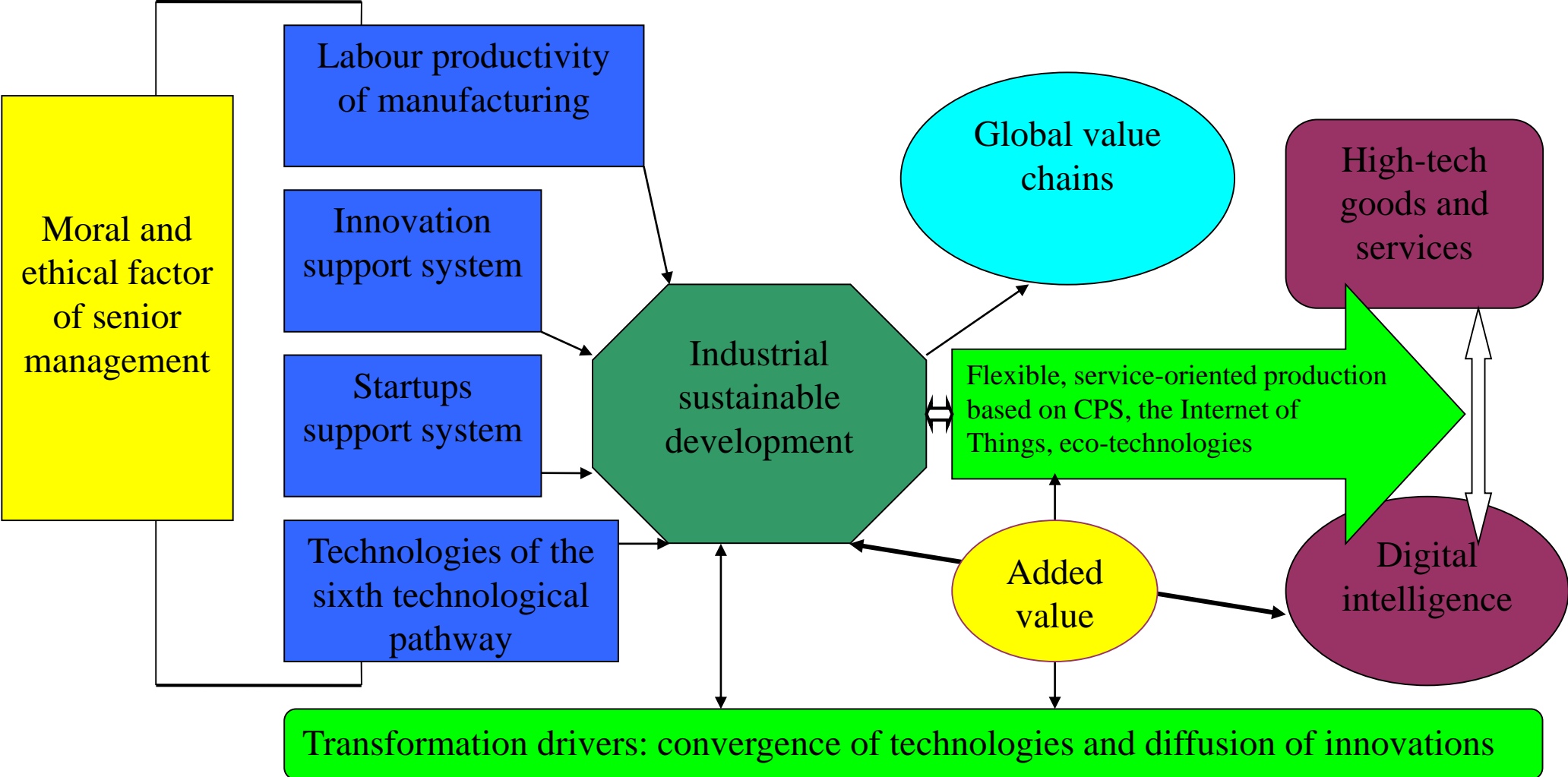
Share of Medium- and High Tech Exports in Total Manufacturing Exports, 2020, % (UNIDO data)

№	Country/Absolute difference	Resource Based	Low Tech	Medium Tech	High Tech	Medium Tech+High Tech
1	Germany	12,2	13,9	52,4	21,5	73,9
2	Ukraine	39,6	25,0	31,7	3,7	35,4
3	USA	26,2	10,2	45,2	18,4	63,6
4	China	9,1	30,6	30,1	30,2	60,3
5	Ukraine/Germany	27,4	11,1	-20,7	-17,8	-38,5
6	USA/Germany	14,0	-3,7	-7,2	-3,1	-10,3
7	China/Germany	-3,1	16,7	-22,3	8,7	-13,6

Indicators for Country's Achievement SDG 9 (UNIDO data)

№	Indicators	Ukraine	China	USA	Germany
1	Manufacturing value added as a proportion of GDP (%)	11,5 (2020)	27,8 (2020)	10,7 (2020)	17,4 (2020)
2	Manufacturing value added per capita (constant 2015, US dollars)	258 (2020)	2822 (2020)	6257 (2020)	7083 (2020)
3	Manufacturing employment as a proportion of total employment (%)	12,4 (2017)	-	10,7 (2019)	18,9 (2019)
4	Proportion of small-scale industries in total industry value added (%)	6,7 (2018)	-	4,8 (2016)	6,3 (2018)
5	Proportion of small-scale industries with a loan or line of credit (%)	12,5 (2019)	11,4 (2012)	-	-
6	Carbon dioxide emissions from fuel combustion (millions of tonnes)	33,7 (2018)	2603,7 (2018)	411,5 (2018)	83,7 (2018)
7	Carbon dioxide emissions per unit of manufacturing value added (kilogrammes of CO2 per constant 2015 US dollars)	2,83 (2018)	0,67 (2018)	0,18 (2018)	0,13 (2018)
8	Proportion of medium and high-tech industry value added in total value added (%)	26,7 (2018)	41,5 (2018)	47,7 (2018)	61,7 (2018)

System of Industrial Policy in Context of Sustainable Development and Industry 4.0



Summary

- Achievement of sustainable development and the SDG 9 deal with formation of the country's industrial policy.
- Country's Competitive Industrial Performance Index positive correlated with manufacturing value added as a proportion of GDP.
- Share of medium- and high tech exports in total manufacturing exports as important factor of country's industrial position (example of Germany) can be eliminated low tech manufacturing value added (example of China). So there are different ways of industrial policy for construction competitive country's industrial position.
- Components of Industrial Policy in Context of Sustainable Development and Industry 4.0 are:
 - 1) Transformation drivers: convergence of technologies and diffusion of innovations;
 - 2) Global value chains;
 - 3) Labour productivity in manufacturing, innovation support system, startups support system, technologies of the sixth technological pathway;
 - 4) Flexible, service-oriented production based on CPS, the Internet of Things, eco-technologies, digital intelligence, high-tech goods and services;
 - 5) Moral and ethical factor of senior management.

Questions?

tarasenkosvitlana1@gmail.com