

**MIER NATIONAL ECONOMIC
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TECHNOLOGICAL CHANGE AND MARKET
EFFICIENCY**

Premature Deindustrialization

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Industrialization vs Deindustrialization

- Industrialization:
 - Manufacturing-based economy
 - Increasing manufacturing shares of employment and/or GDP
 - Faster manufacturing labour productivity growth
- Deindustrialization:
 - Decreasing manufacturing shares of employment
 - Decreasing manufacturing shares of GDP?
 - manufacturing labour productivity growth?

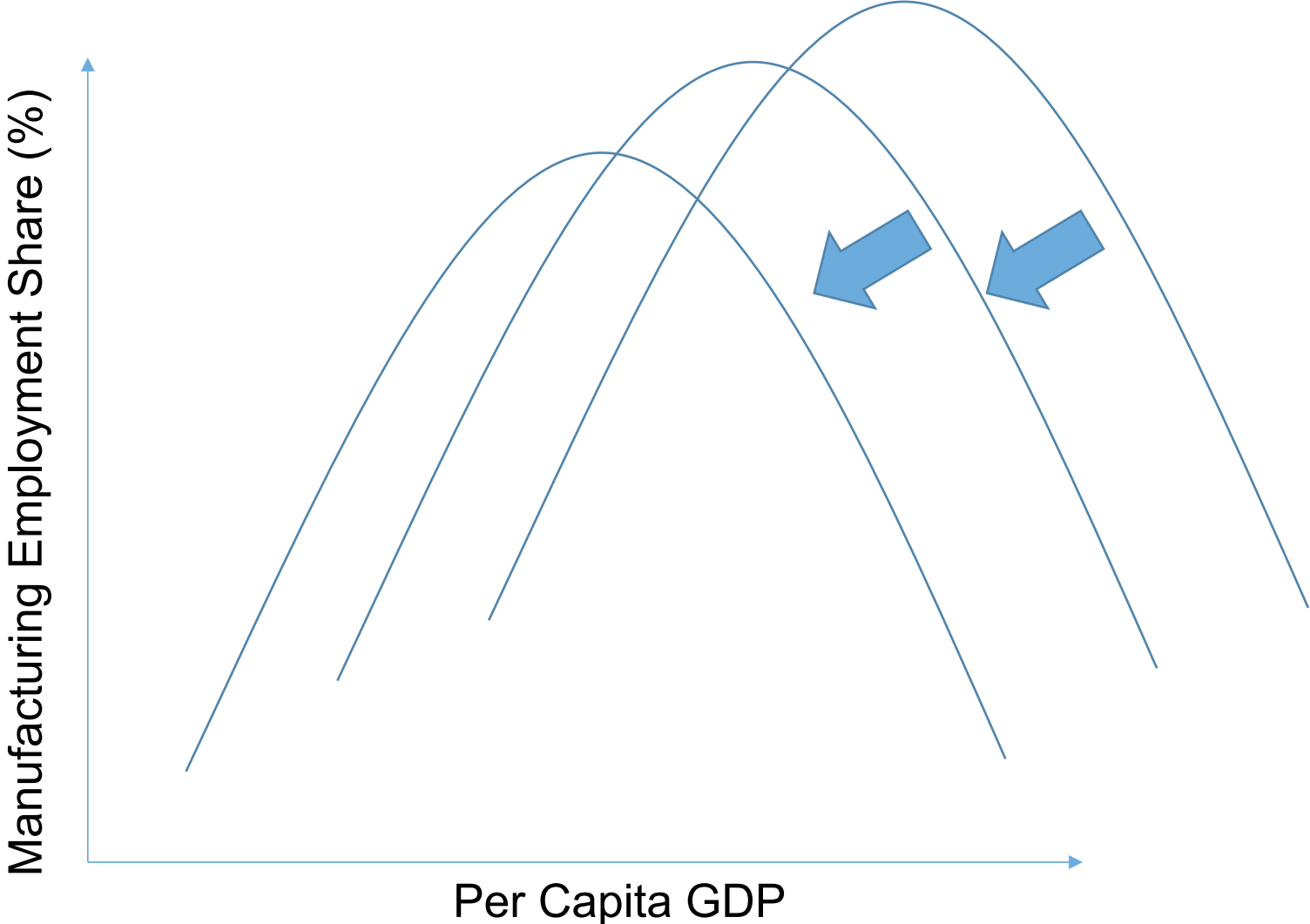
Reasons for Deindustrialization

- Technological progress - labour-saving technology and capital intensity
- Trade and globalization – change in production process, eg. GVC
- Trade has lowered the relative share of the manufactured goods due to larger increment in trade in the services
- Firms reallocating their production capacity to:
 - Avoid environment tax
 - Manipulating natural resources of the foreign countries
- Change in relative demand for the manufactured goods within the developed nations and between the developed and developing nations due to the rise in income inequality - shifted away from labour-intensive manufactured goods

Premature Deindustrialization

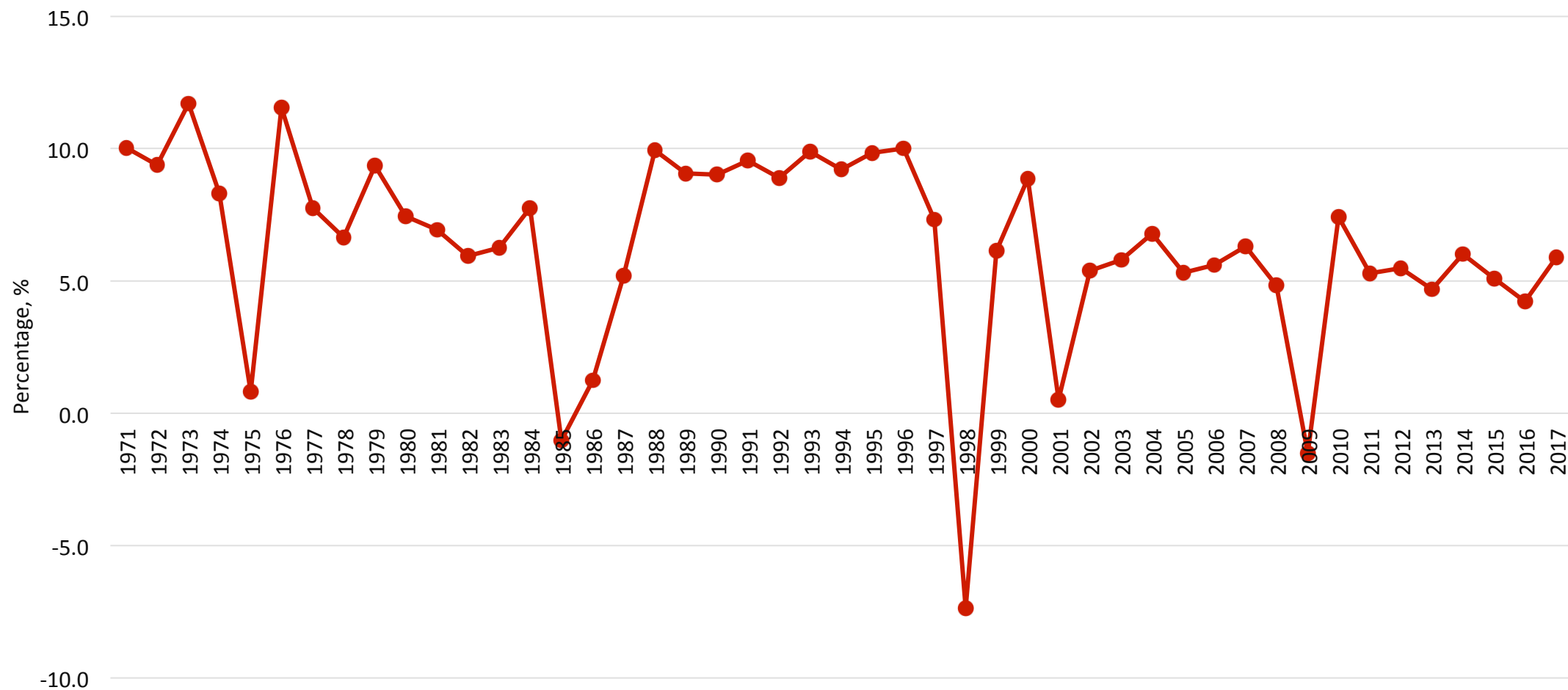
- Deindustrialize at lower GDP per capita (inverted U-shaped)
- Falling share of manufacturing GDP accompanied by low manufacturing productivity growth
- Hampered the contribution of manufacturing as the engine of growth (Kaldorian)
- Increase the excess labour in the traditional rural sector and the informal sector
- Jobless growth and youth unemployment

Premature Deindustrialization

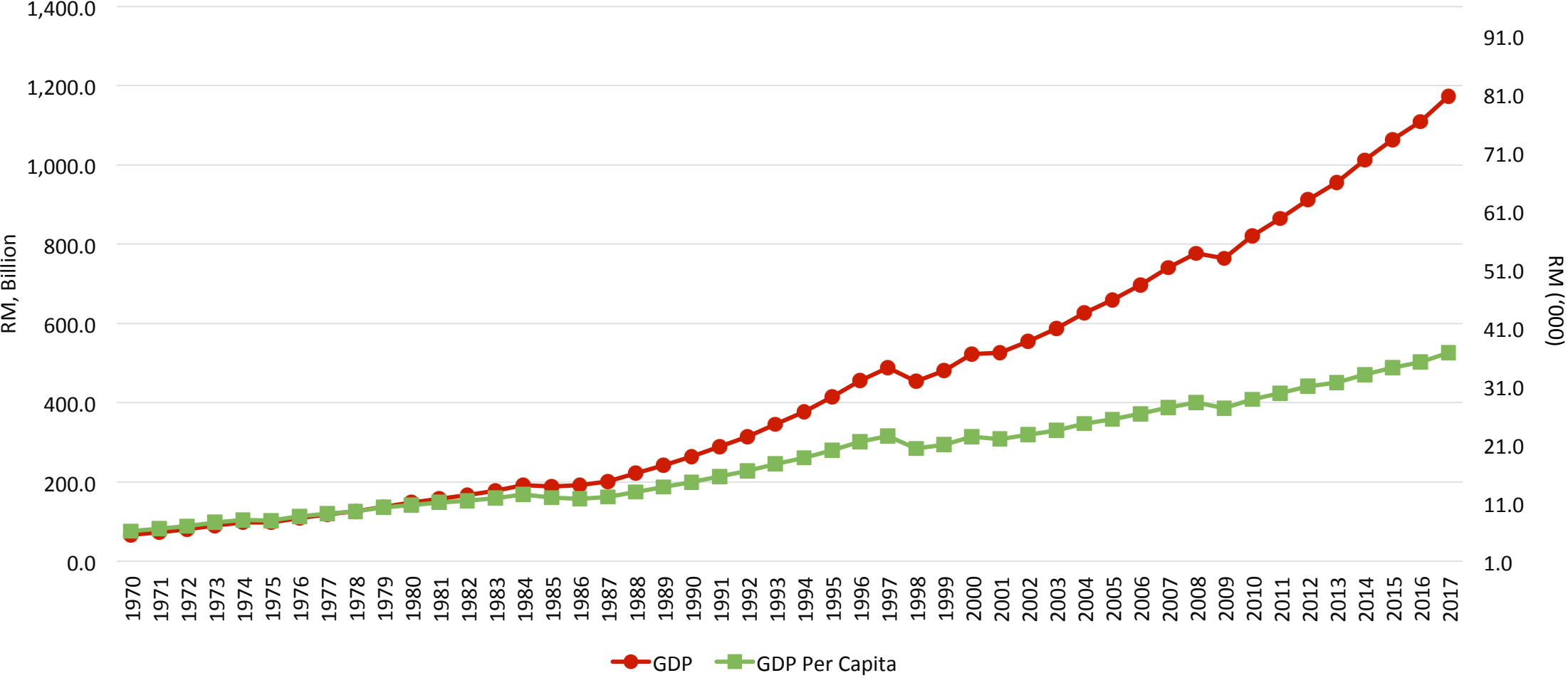


The evidence of premature deindustrialization is demonstrated by the shifting of the curves downwards and moving closer to the origin

Malaysia: Real GDP Annual Growth Rates, 1971-2017 (2010 prices)



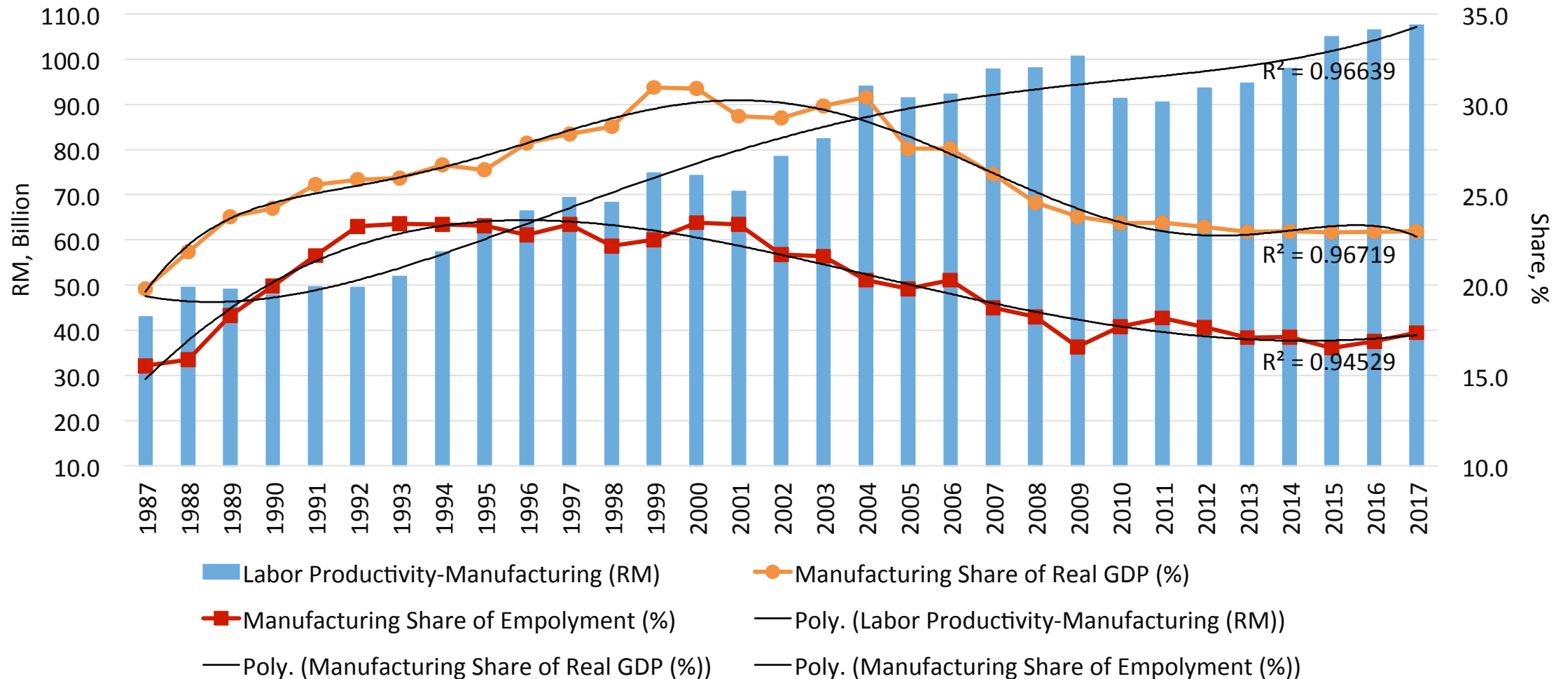
Malaysia: Real GDP and GDP Per Capita, 1970-2017 (2010 prices)



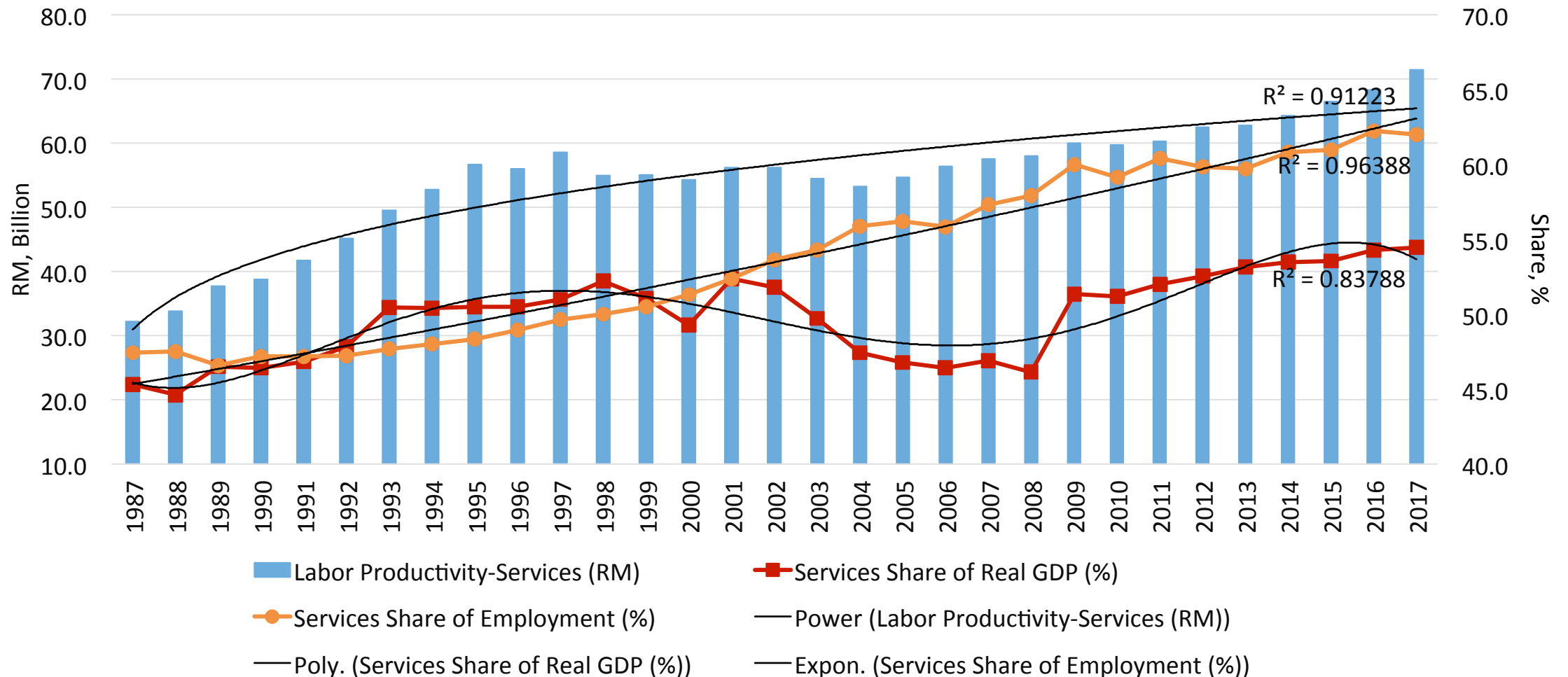
Malaysia: GDP and Employment Shares by sectors for Selected Years, 1987-2017 (%)

Year	Agriculture		Mining & Quarrying		Manufacturing		construction		Services	
	GDP Shares	Empl. Shares	GDP Shares	Empl. Shares	GDP Shares	Empl. Shares	GDP Shares	Empl. Shares	GDP Shares	Empl. Shares
1987	20.0	30.9	12.6	0.6	19.8	15.5	3.5	5.6	45.3	47.5
1992	14.6	21.8	8.2	0.5	25.8	23.3	4.9	7.2	47.9	47.2
1997	11.1	17.3	6.9	0.5	28.4	23.4	6.6	9.3	51.0	49.6
2002	9.0	14.9	8.9	0.3	29.3	21.7	3.8	9.5	51.8	53.6
2007	10.0	14.8	13.3	0.4	26.1	18.8	2.8	8.8	46.9	57.3
2012	9.8	12.7	9.5	0.6	23.2	17.7	3.8	9.2	52.5	59.9
2017	8.2	11.3	8.4	0.7	23.0	17.4	4.6	8.7	54.5	62.0
IMP 3 targets					28.5	30.0			66.5	52.2

Malaysia: Manufacturing Shares of GDP & Employment and Manufacturing Labour Productivity



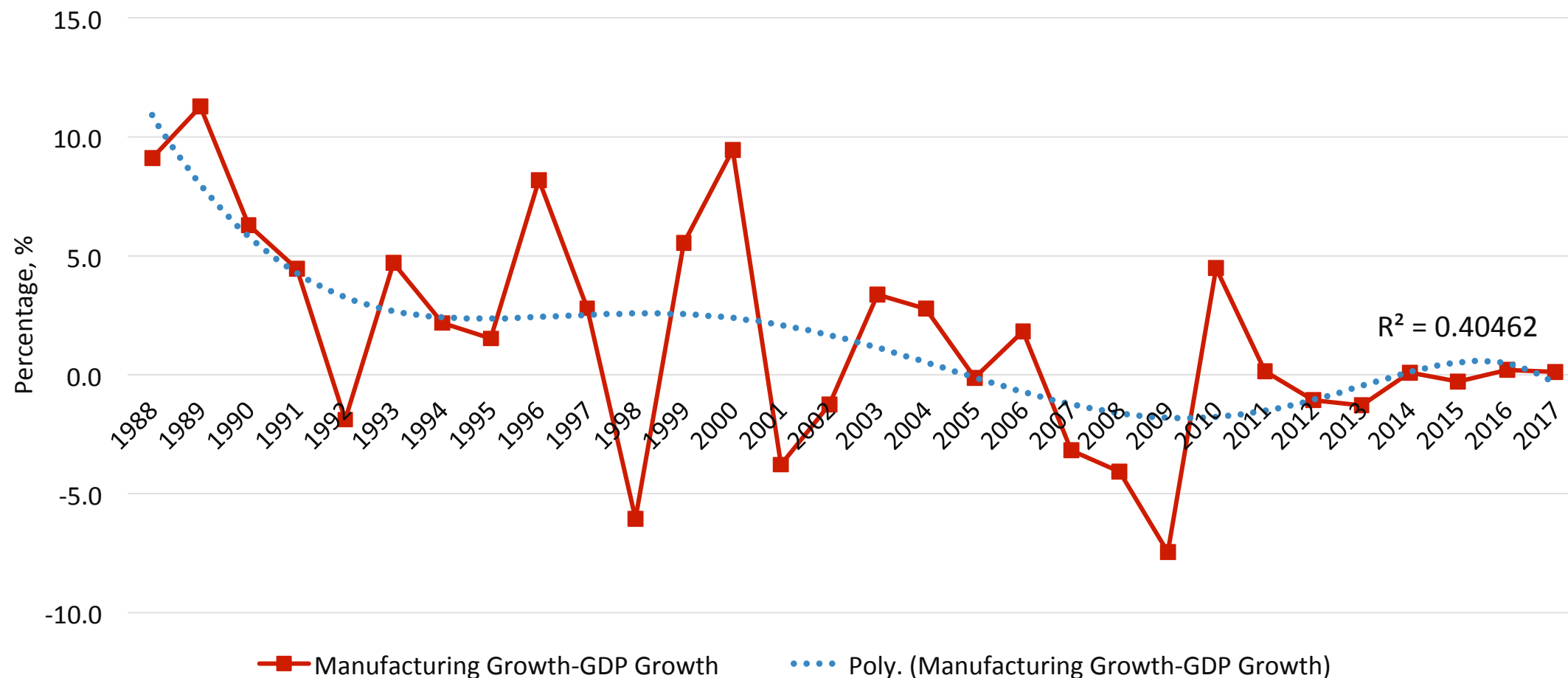
Malaysia: Services Shares of GDP & Employment and Services Labour Productivity



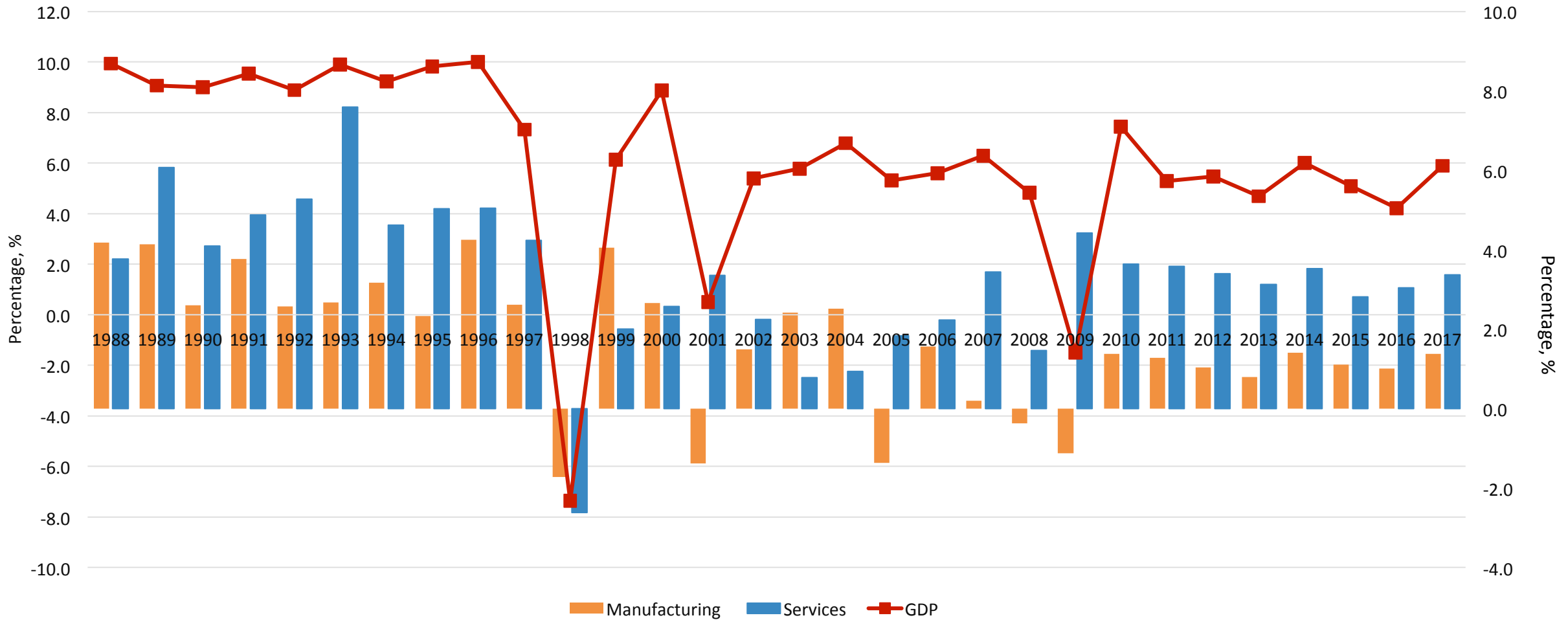
Malaysia: The Excess of Manufacturing Growth over GDP Growth, 1988-2017 (Percentage point)

Year	Manufacturing growth – GDP growth	Year	Manufacturing growth – GDP growth
1988	9.1	2003	3.4
1989	11.2	2004	2.8
1990	6.3	2005	-0.1
1991	4.5	2006	1.8
1992	-1.9	2007	-3.2
1993	4.7	2008	-4.0
1994	2.2	2009	-7.5
1995	1.6	2010	4.5
1996	8.2	2011	0.1
1997	2.8	2012	-1.1
1998	-6.0	2013	-1.3
1999	5.6	2014	0.1
2000	9.4	2015	-0.3
2001	-3.8	2016	0.2
2002	-1.3	2017	0.1

Malaysia: Differences Between Manufacturing Growth and GDP Growth, 1988-2017 (%)



Malaysia: Percentage Point Contribution to GDP Growth, 1988-2017 (%)



Malaysia: Real GDP and Labour Productivity Growth for Different Periods (%)

Period	1970-1988	1988-1997	1998-2008	2009-2017	1970-2017
Real GDP, 2010 price (CAGR)***	6.9	9.2	5.5	5.5	6.3
Labour productivity (CAGR)	2.1*	5.3	3.3	1.9	2.7**

Note: * period 1982-1988; ** period 1982-2017; ***Compounded Annual Growth Rates (CAGR)

Source: DOSM and authors' calculation.

Decomposition of Labour Productivity

$$\Delta \pi_{t \downarrow 1} = \sum_{i=1}^n \theta_{i,t \downarrow 0} \Delta \pi_{i,t \downarrow 1} + \sum_{i=1}^n \pi_{i,t \downarrow 1} \Delta \theta_{i,t \downarrow 1}$$

Where,

π = labour productivity level

θ = employment share for sector

t_1 = ending of period year

t_0 = beginning of period year

i = sector: 1,2,...,n

Decomposition of Labour Productivity

The efficiency of resources allocation in the economy can be observed through labour productivity growth. This can be done by decompose the productivity growth into two components:

- Growth within the sector: Due to capital accumulation and technological advancement
- Growth from shifting to other sectors, which is always called structural change, is due to shifting labour share into more productive sectors in the economy.

Malaysia: Sources of Labour Productivity Growth, 1987-2017

Period	Labour Productivity CAGR (%)	Effect (percentage points)	
		Within Sectors	Structural Change
Including mining and quarrying sector			
1987 - 2000	4.05	4.13	(0.08)
2000 - 2017	2.16	1.98	0.18
Without mining and quarrying sector			
1987 - 2000	4.22	3.36	0.86
2000 - 2017	2.33	2.54	(0.21)

Malaysia: Sources of Labour Productivity Growth, 2010-2017 (without mining & quarrying)

Labour Productivity			Effect (percentage points)	
Year	RM (Constant 2010)	CAGR (%)	Within Sectors	Structural Change
2010	61,134	-	-	-
2017	73,776	2.72	2.66	0.06

Malaysia: Employment Shares and Labour Productivity by Subsectors

Sectors	Sectoral Employment, %		Labour Productivity (RM, 2010)	
	2010	2017	2010	2017
AGRICULTURE, FORESTRY AND FISHING	13.64	11.37	51,322.14	58,820.26
MANUFACTURING	17.81	17.48	91,292.11	107,528.31
Food, Beverage & Tobacco	2.60	3.28	78,633.52	71,397.13
Textile, wearing Apparel, Leather & Footwear	1.29	1.40	21,671.69	23,550.01
Wood, furniture, Paper Product & Printing	2.86	2.40	35,469.24	45,917.29
Petroleum, Chemical, Rubber & Plastic	1.98	2.19	257,960.53	251,000.05
Non-metallic mineral products, basic metal & fabricated metal products	2.54	2.28	72,523.61	102,372.57
Electrical & Electronic Products	4.76	4.22	85,821.88	118,395.01
Transport Equipment & other Manufactures	1.77	1.72	105,907.56	128,376.23
CONSTRUCTION	9.14	8.75	26,059.21	42,654.76
SERVICES	59.42	62.40	59,746.36	71,409.58
TOTAL	100.00	100.00	61,134.42	73,776.36

Summary

- Malaysian economy started to deindustrialize around 1998-2000
- Labours are reallocated to the services sector but its labour productivity level remains below the economy-wide productivity thus contributes negatively towards the benefit of structural change to the overall labour productivity
- Labour productivity is increasing at a decreasing rate, especially up until 2010. After 2010 increased at a faster rate
- Falling share of manufacturing GDP accompanied by low manufacturing productivity growth: therefore it is the case of premature deindustrialization

Summary, cont.

- Productivity growth attributed to within the sector, but at a slower rate
- Productivity growth due to structural change is small - labours are reallocated to less productive sectors which is called allocative inefficiency
- Manufacturing growth is not the engine of growth coupled with low productivity services
- Nevertheless, the employment-receiving sectors' productivity is improving, particularly for the services sector after 2010

The presentation is based on two papers:

1. Is Malaysia Facing Premature Deindustrialization?
2. Sources of Growth for the Malaysian Economy

The full papers are available at MIER

THANK YOU