

LIVE WEBINAR

with

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Visiting Professor at Institute of Energy Policy and Research (IEPR), UNITEN

The New Post-Pandemic Normal on Sustainability: Key Pillars

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The Energy University Institute of Energy Policy and Research The Energy University



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The New Post-Pandemic Normal on Sustainability: Key Pillars

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1. INTRODUCTION

- ❑ While the world has confronted crisis after crisis, four important pillars have emerged as critical to address sustainable development.
- ❑ The achievement of sustainable development (including the 17 SDGs launched by the United Nations) requires the simultaneous pursuit of the following four broad pillars (Figure 1):
 - Economic development
 - Health
 - Ecological and Environmental Balance
 - Socioeconomic equality
- ❑ The coronavirus (COVID19) pandemic has only strengthened further the need to strike a balance between the four pillars with strong connectivity and coordination between them.
- ❑ The remaining lecture is organized as follows: Sections 2, 3, 4, and 5 emphasize the importance the four critical pillars, while section 6 examine the relationship between GDP/Kapita, and the remaining three critical pillars. Section 7 presents the conclusions.

1. INTRODUCTION

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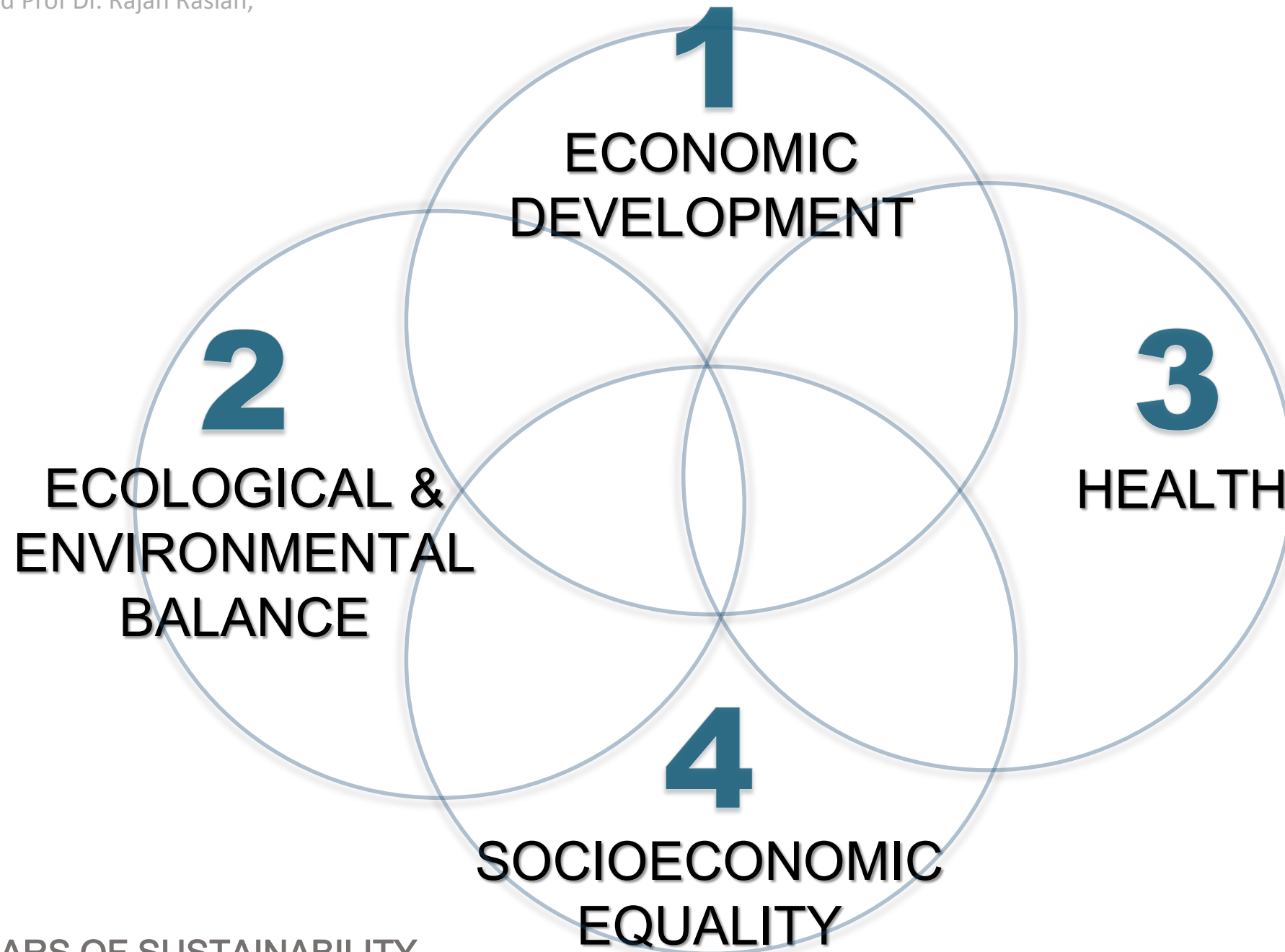
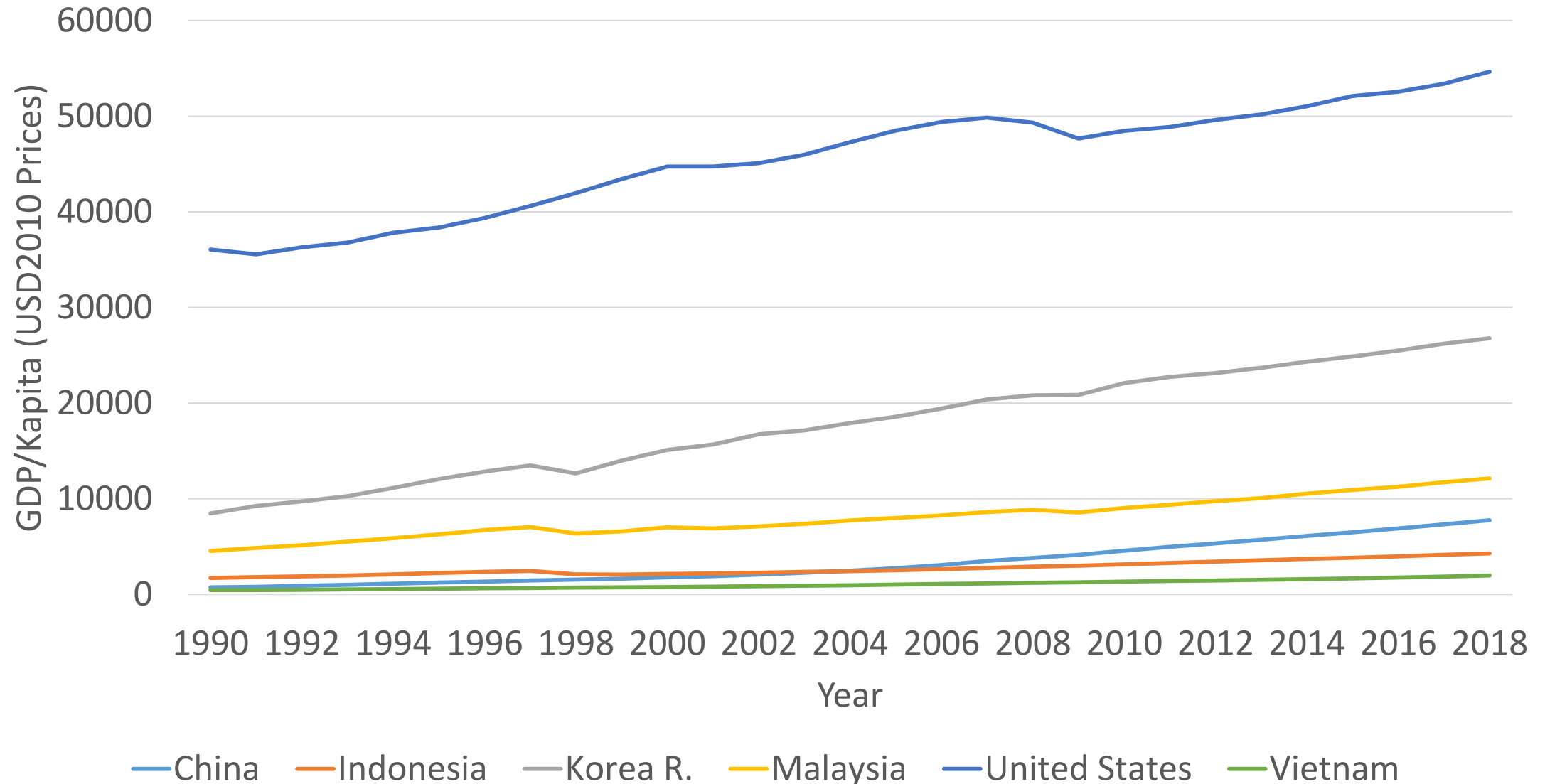


FIGURE 1:
FOUR PILLARS OF SUSTAINABILITY

2. ECONOMIC DEVELOPMENT

- ❑ Material progress driven by innovation and economic growth is the first critical pillar.
- ❑ It is important for economies to grow so as to reduce poverty incidence and enable populations to realize their creative selves.
- ❑ The countries chosen have largely grown rapidly over the period 1990-2018 (Figure 2).
- ❑ The global financial crisis of 2007-08 and its contagion reduced global GDP considerably. The lives of both the rich and poor were seriously affected.
- ❑ In an increasingly integrating world, economic crises bring more hardship to small open than large economies as the former are more vulnerable to wild swings in trade and investment flows than the latter.
- ❑ Thus, there is a need to search for economic growth models that can prevent the occurrence of such crises.
- ❑ Although the latest arguments deliberated at the United Nations Convention for Climate Change no longer calls for limiting economic growth, economic development must be balanced by the remaining three pillars.

FIGURE 2: GDP/KAPITA, SELECTED ECONOMIES, 1990-2018



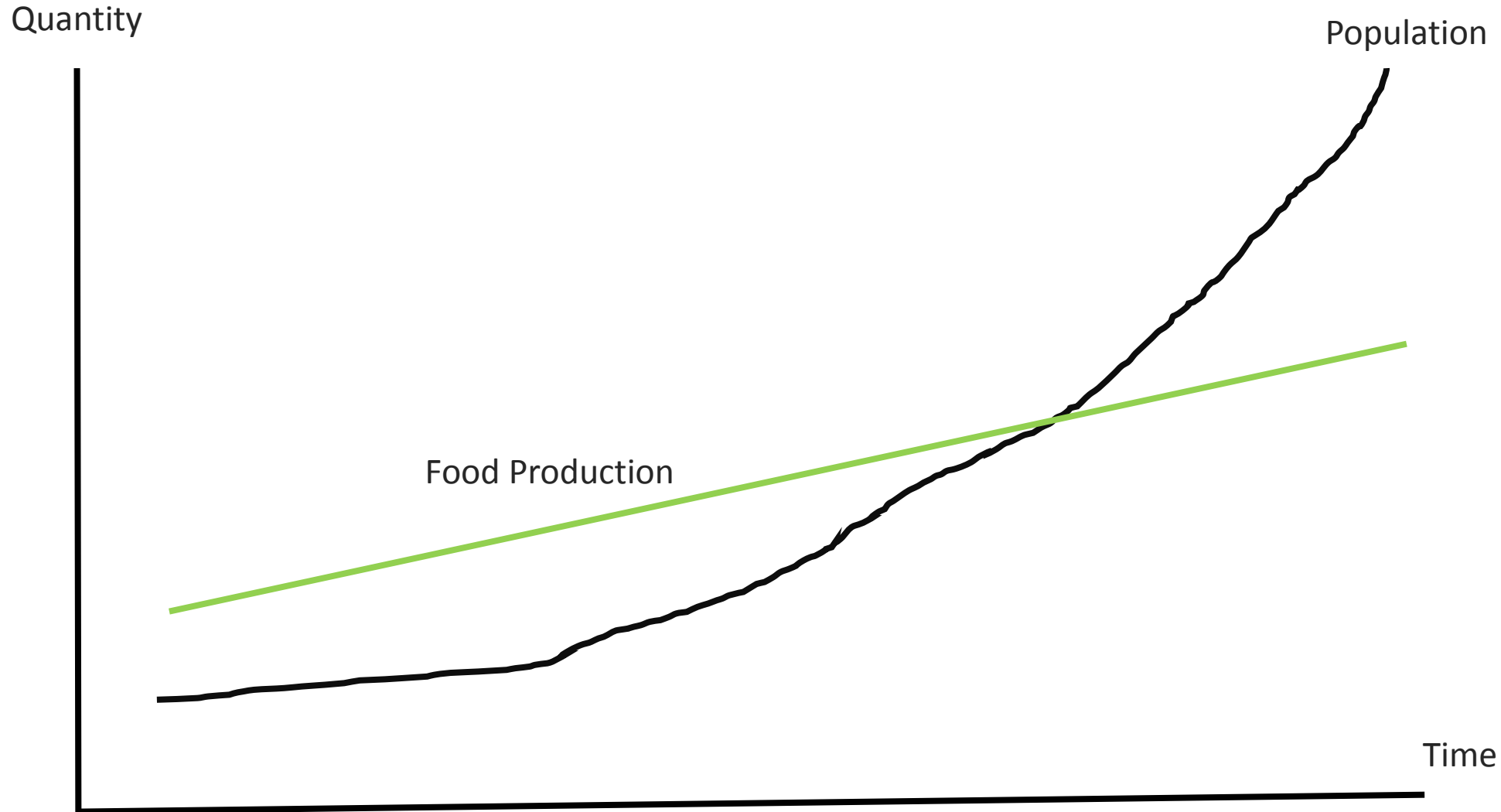
3. ECOLOGICAL AND ENVIRONMENTAL BALANCE

- Three important phases of theorization can be observed in arguments on the environment.
 1. The first phase emphasized **overpopulation and its impact on limited resources** (section 3.1)
 2. The second emphasized **limits to growth, including thresholds before populations begin to recognize the importance of the environment** (section 3.2).
 3. The third took on the argument advanced by Harding that the **universe is a global common** (section 3.3).

3.1 Overpopulation and the Environment

- Thomas Robert Malthus (1798), and Paul Erhlich and Anne Erhlich (1968) equated overpopulation as the cause of overgrazing/mining of the resources
- Whereas population grew geometrically, food production can only grow arithmetically (Figure 3).

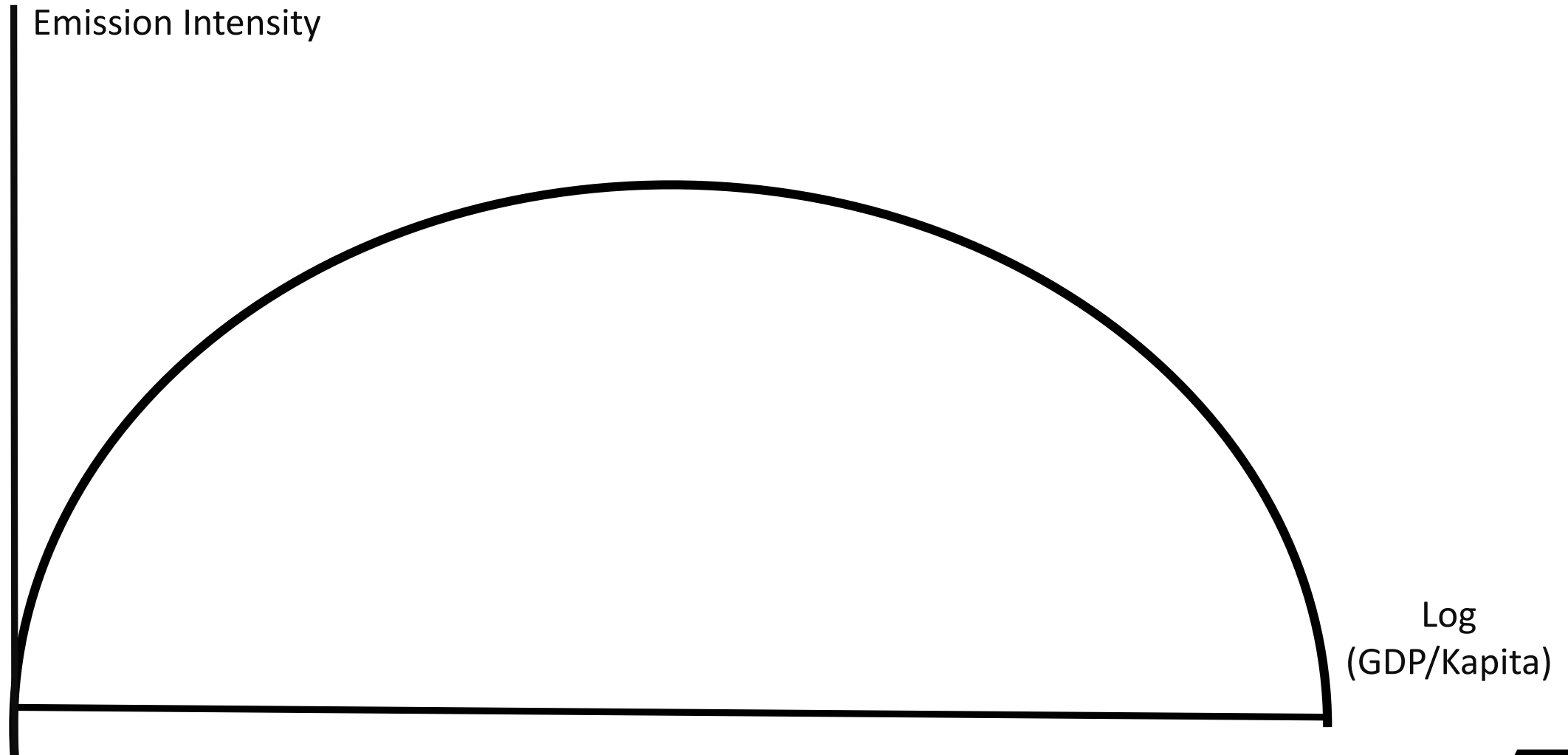
FIGURE 3: THE POPULATION-FOOD PRODUCTION THESIS



3.2 Economic Growth and The Environment

- ❑ Meade et al (1972) called for a check on economic growth to address sustainability issues. The Club of Rome as the group came to be known as argued that the globe can only take a certain amount of economic growth beyond which it will crash.
- ❑ The inverted “U-shaped” curve relationship between income distribution and per capita income advanced by Simon Kuznets using longitudinal analysis of data from the developed countries. That inequalities worsen in the early stage of economic development, but once threshold of income is reached, it will improve.
- ❑ This argument was taken on by Penayitou (1996) to link environmental emissions with economic growth positing that environmental decay will rise initially until a certain threshold of economic growth is achieved after which it will fall (Figure 4).

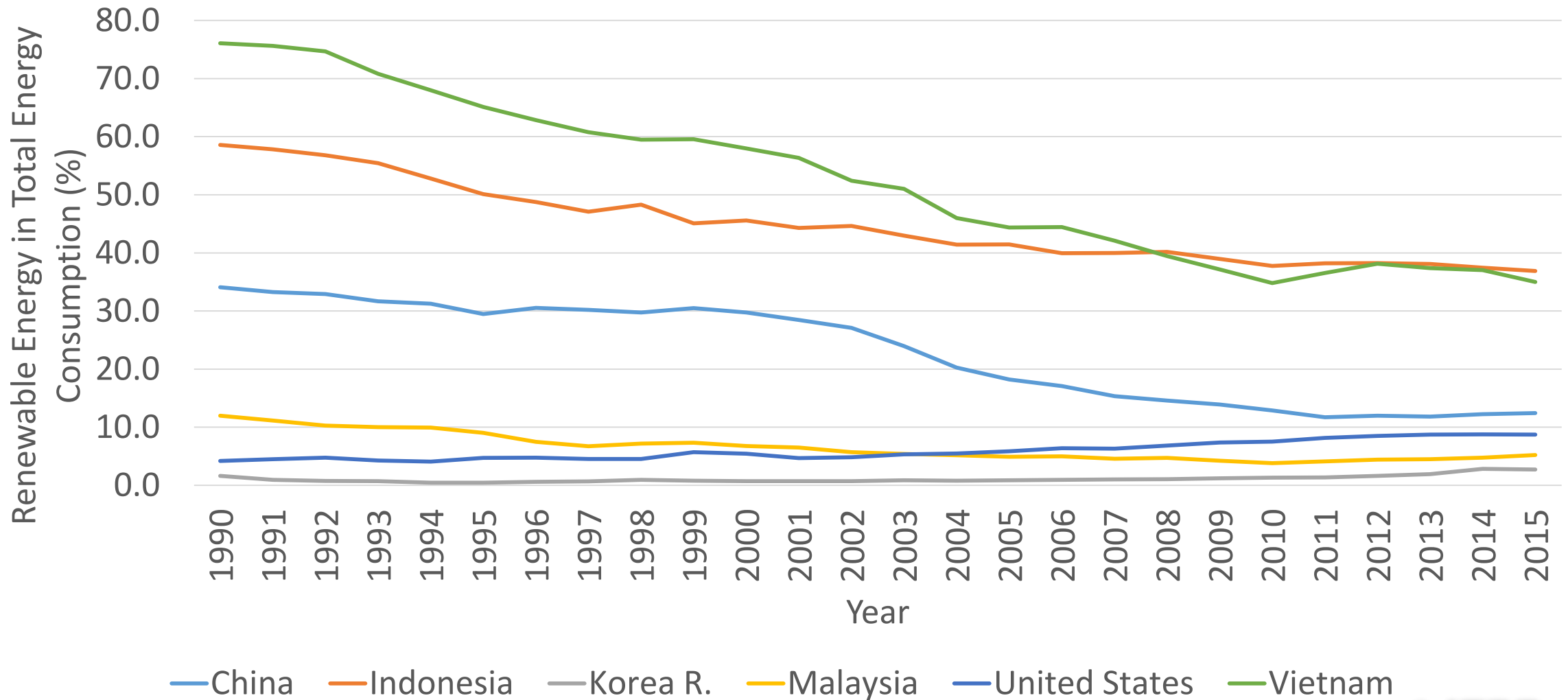
FIGURE 4: ENVIRONMENTAL INVERTED "U" SHAPED CURVE



3.3 Economic Growth Using Non-Fossil Fuels

- ❑ Since Harding (1968) the environment is seen as a global common - i.e. any happenings in any part of the world will have a bearing on other parts of the world. Hence, issues related to the environment is now recognized as a key pillar in achieving development.
- ❑ Stern (2007) and Nordhaus (2008) have shown that global temperatures are rising at dangerous levels, and unless something is done to slow that down drastically, planet earth may become extinct. They also offer convincing evidence to show that climate change and global warming can be stopped if human activity is shifted from the use of fossil to environment-friendly practices.
- ❑ At the Paris meeting almost all countries pledged to reduce carbon emissions to ensure that temperature rise over the next century is capped at 1.5% Celcius. Developing countries, such as Malaysia submitted Intended Nationally Determined Contribution (INDCs) to UNFCCC to reduce carbon emissions by 45% by 2030 following the 2015 Paris Accord, which was later deferred to 2050 following the 2016 Marrakesh Proclamation in 2016.
- ❑ Among the targets countries have focused on to achieve ecological and environmental balance is to raise the share of renewable energy on total energy consumption, which has picked steam since 2010 (Figure 5).

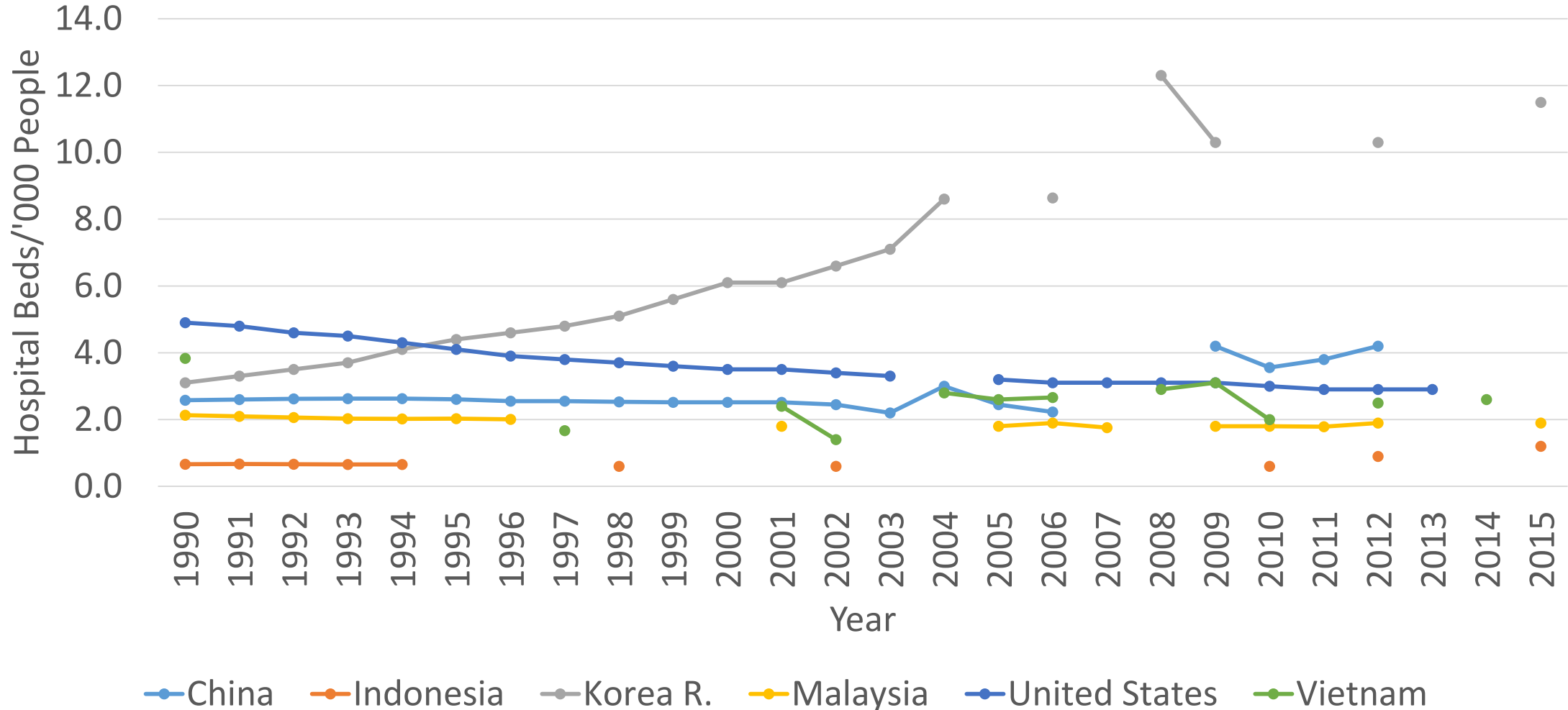
FIGURE 5: RENEWABLE ENERGY IN TOTAL ENERGY CONSUMPTION, SELECTED ECONOMIES, 1990-2015



4. HEALTH

- ❑ The pillar of health has to focus on checking the spread of infectious diseases (e.g.,s HIV-Aids), as well as shielding people from non-infectious diseases (e.g., cardiovascular diseases). For brevity we used hospital beds per 1000 people as that offered the longest series among the proxies (Figure 6).
- ❑ Medical evidence shows that the incidence of health problems are encountered more by the poor than the rich (Yusoff et al,2018; Govindamal, 2020).
- ❑ The provision of healthcare has varied across countries with privatization increasing far more in the developing than in the developed countries, which exacerbates inequality in access to health.
- ❑ The John Hopkins University Center for Health Equity have argued that poor environmental
- ❑ The John Hopkins University Center for Health Equity have argued that poor environmental measures are raising systemic risks for epidemic breakouts
- ❑ There is recognition now that the world is connected so that the sufferings of groups of people will have a bearing on the health of society as a whole. The spread of HIV/AIDs is one example.
- ❑ Improving access to provision of adequate healthcare is a key component of sustainable development
- ❑ For quality healthcare to reach all humans, its provision should address the problems of concentration in its provision and R&D. Whereas the first denies those in need among the poor and disadvantaged the latter reduces resources targeting the diseases of the poor.

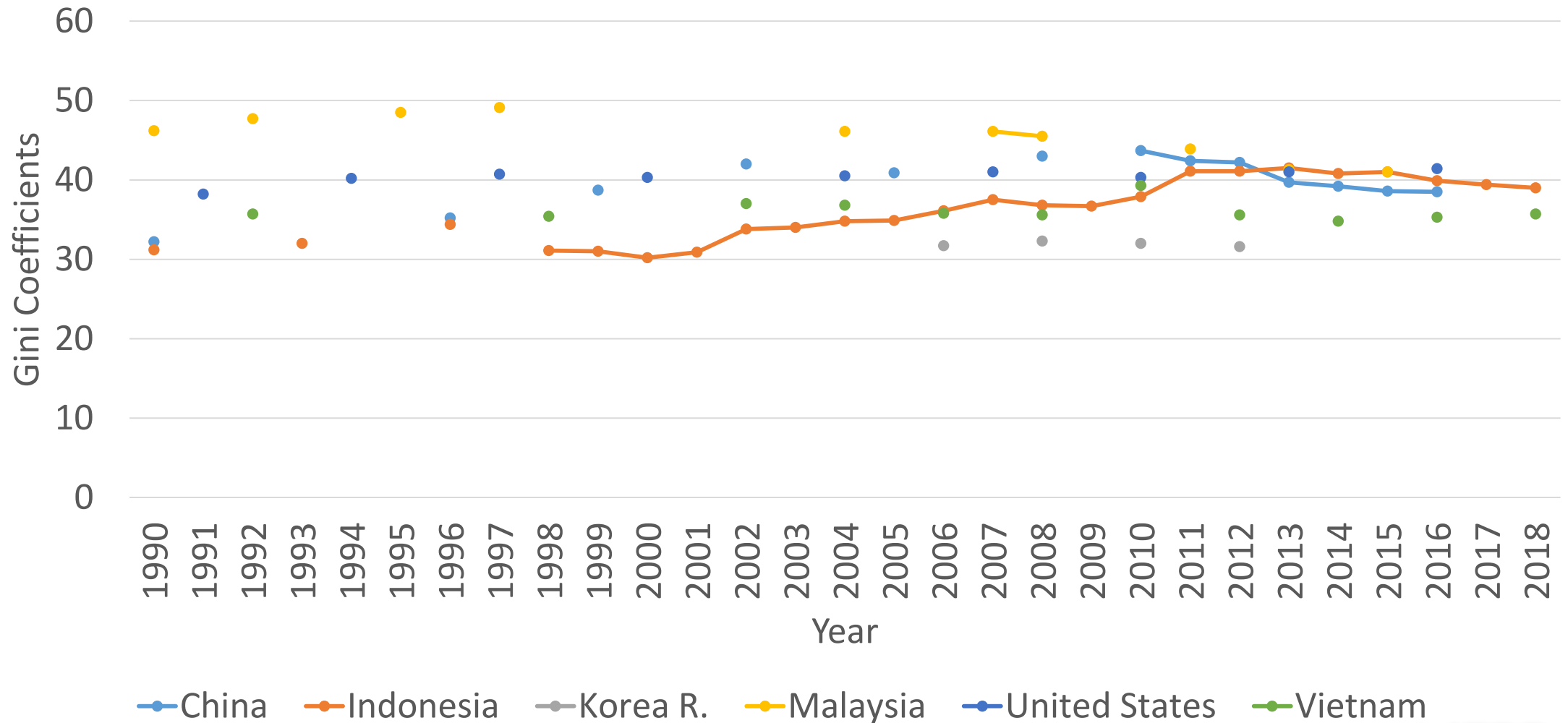
FIGURE 6: HOSPITAL BEDS/1000 PEOPLE, SELECTED ECONOMIES, 1990-2015



5. SOCIOECONOMIC EQUALITY

- ❑ The world has largely faced worsening intra-country and inter-country inequalities regardless of the location of countries in the development phase. We use income inequality as the proxy to represent socioeconomic inequality (Figure 7), though it must also address access to education, and public utilities
- ❑ Inequality causes unequal access to resources, which would undermine the capacity of the poor to compete with the rich in the allocation of resources.
- ❑ The rich have access capacity to gamble on their directly and indirectly, the poor's future as the channelling of savings to speculative activities can easily cause asset bubbles, which as it explodes will bring a cascading effect on the real economy, and the key development indicators
- ❑ The poor lack access to sufficient resources to enjoy essentials and the knowhow to combat diseases and to also avoid causing them.
- ❑ Unequal access to education, health, water, power and technology has been a major cause of worsening rural-urban, gender and inter-region and inter-country socioeconomic divides.
- ❑ Efforts to check INTER-COUNTRY INEQUALITY, albeit minor, can be learnt from the European Union's offer of technology to the LEAST DEVELOPED COUNTRIES in Africa and Asia to improve food sterilization and sanitation measures.
- ❑ Malaysia has also been assisting several LDCs through G to G arrangements in the fields of agriculture, education and science.

FIGURE 7: INCOME INEQUALITY, SELECTED ECONOMIES, 1990-2018



6. LINKING MATERIAL DEVELOPMENT WITH CRITICAL PILLARS

- ❑ The general trend has been on mature economies demonstrating a strong link between the three pillars. In this section, we show the link between economic development (deploying GDP/Kapita), and environmental, health and socioeconomic equality variables using countries with varying levels of economic development
- ❑ The countries chosen are the United States (developed), China (rapidly industrializing and populous), Korean Republic (developed in one generation), Malaysia (upper middle income country), Indonesia (large lower middle income country, and Vietnam (rapidly industrializing transition economy).
- ❑ The coronavirus pandemic (COVID19) does not show a significant relationship between material levels of development, and infections, and death rates, which is a consequence of the nature of the pandemic. The disease has been spreading through contact while countries' responses have very much depended on lockdowns and resources put out to screen and test patients.

6.1 ENVIRONMENTAL AND ECOLOGICAL BALANCE

- ❑ The evidence from the share of renewable energy consumed in total energy shows that developed countries have pass the threshold to increasingly use renewable energy (Figure 12).
- ❑ Upper middle income and newly developed countries appear to have passed this threshold recently, though UN SDG initiatives have also been significant (Figures 8, 10, & 11).
- ❑ Poorer economies appear to facing a fall in the use of renewable energy, which includes Indonesia and Vietnam (Figures 9 & 13) .

FIGURE 8: RENEWABLE ENERGY AND GDP/KAPITA, CHINA, 1990-2018

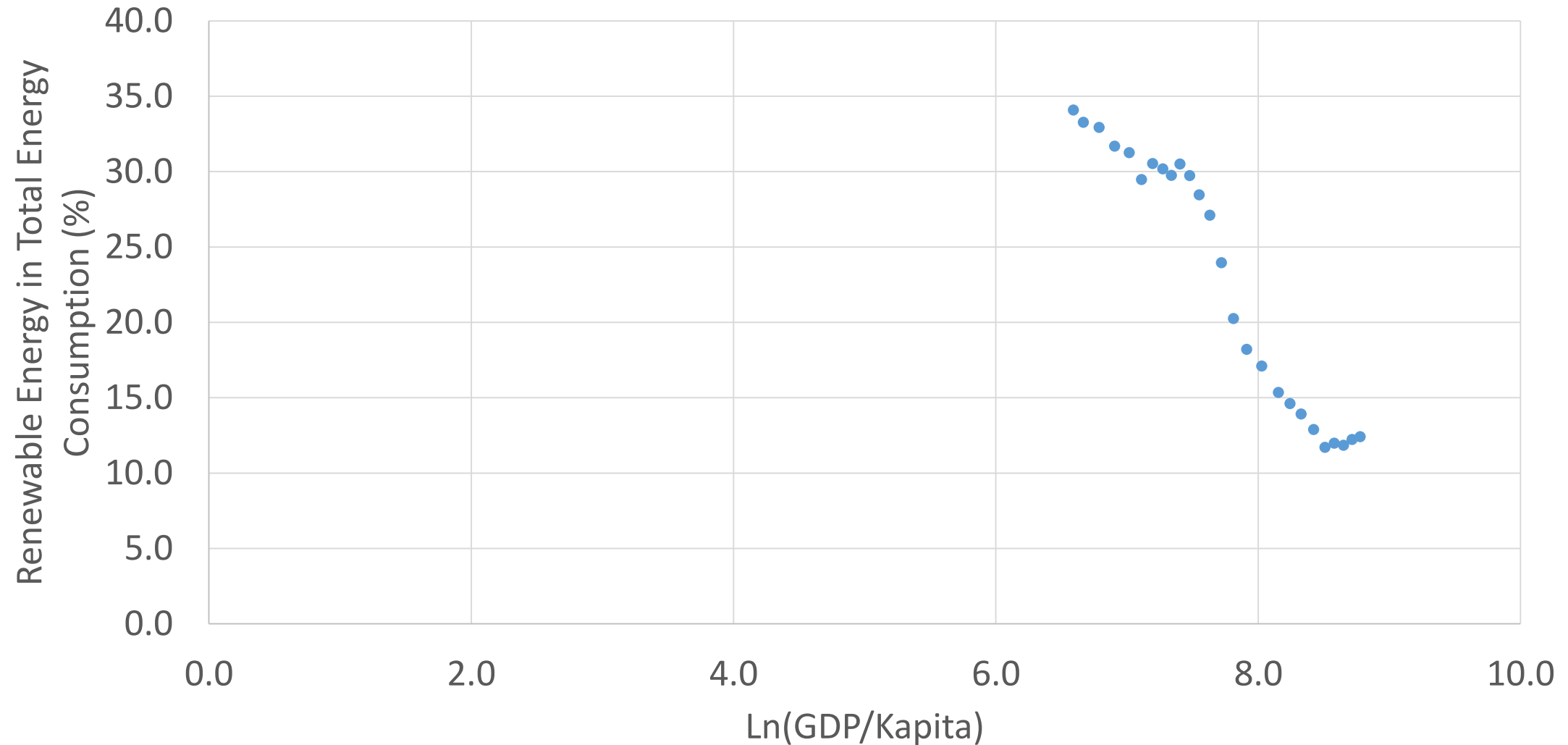


FIGURE 9: RENEWABLE ENERGY AND GDP/KAPITA, INDONESIA, 1990-2018

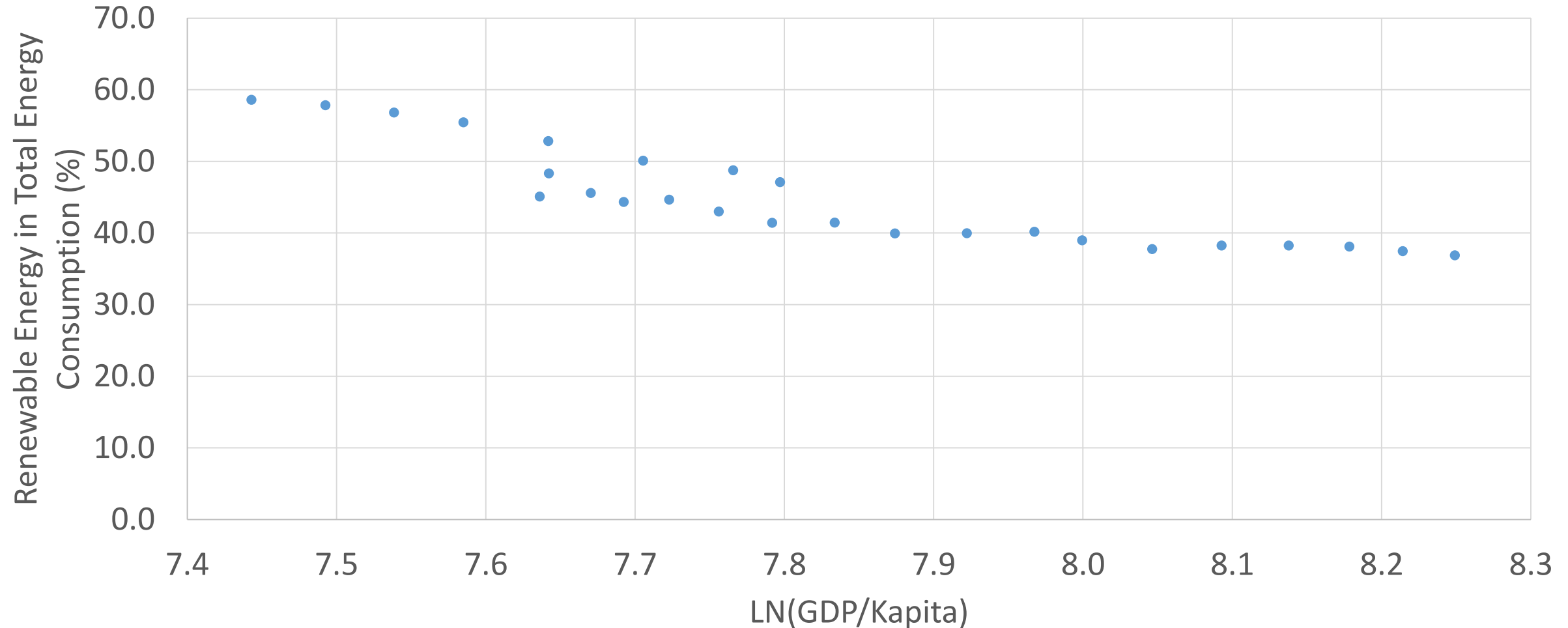


FIGURE 10: RENEWABLE ENERGY AND GDP/KAPITA, KOREA REP, 1990-2018

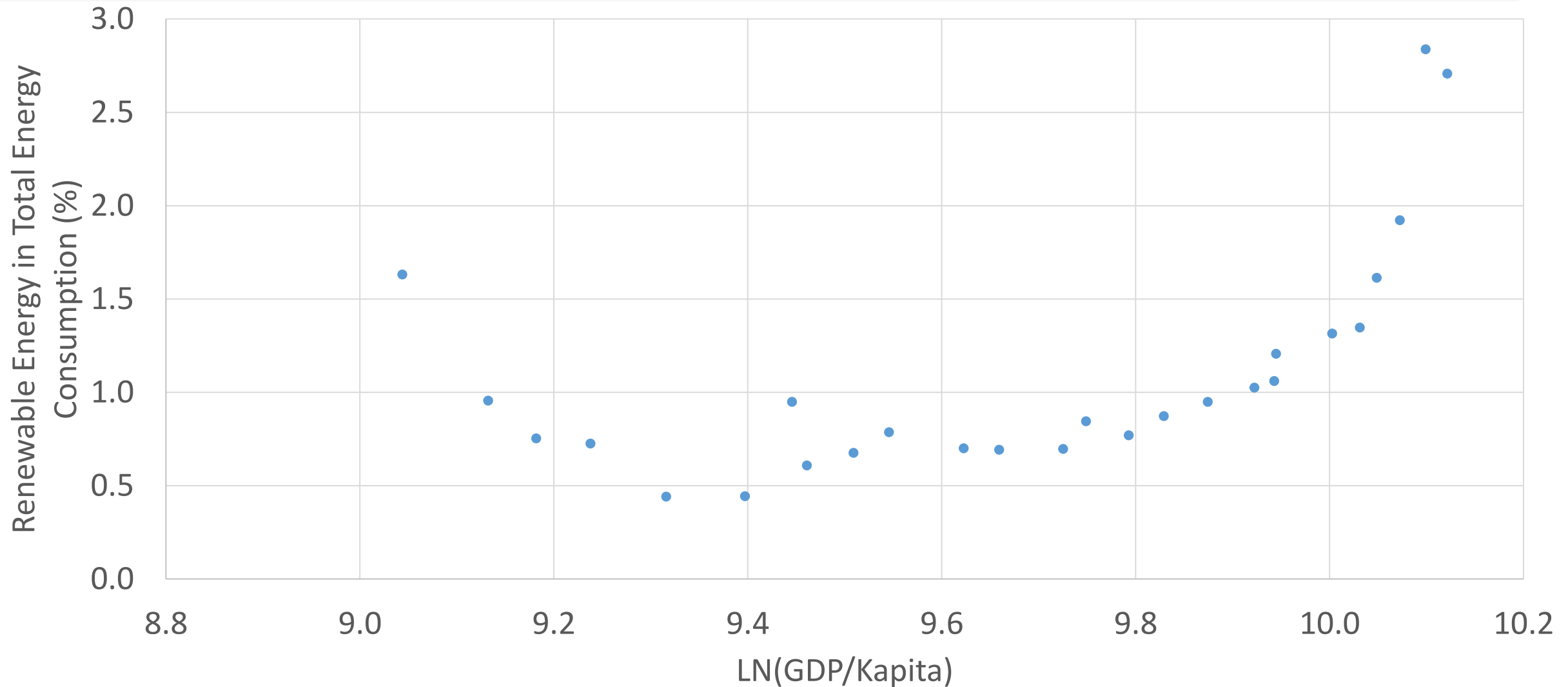


FIGURE 11: RENEWABLE ENERGY AND GDP/KAPITA, MALAYSIA, 1990-2018

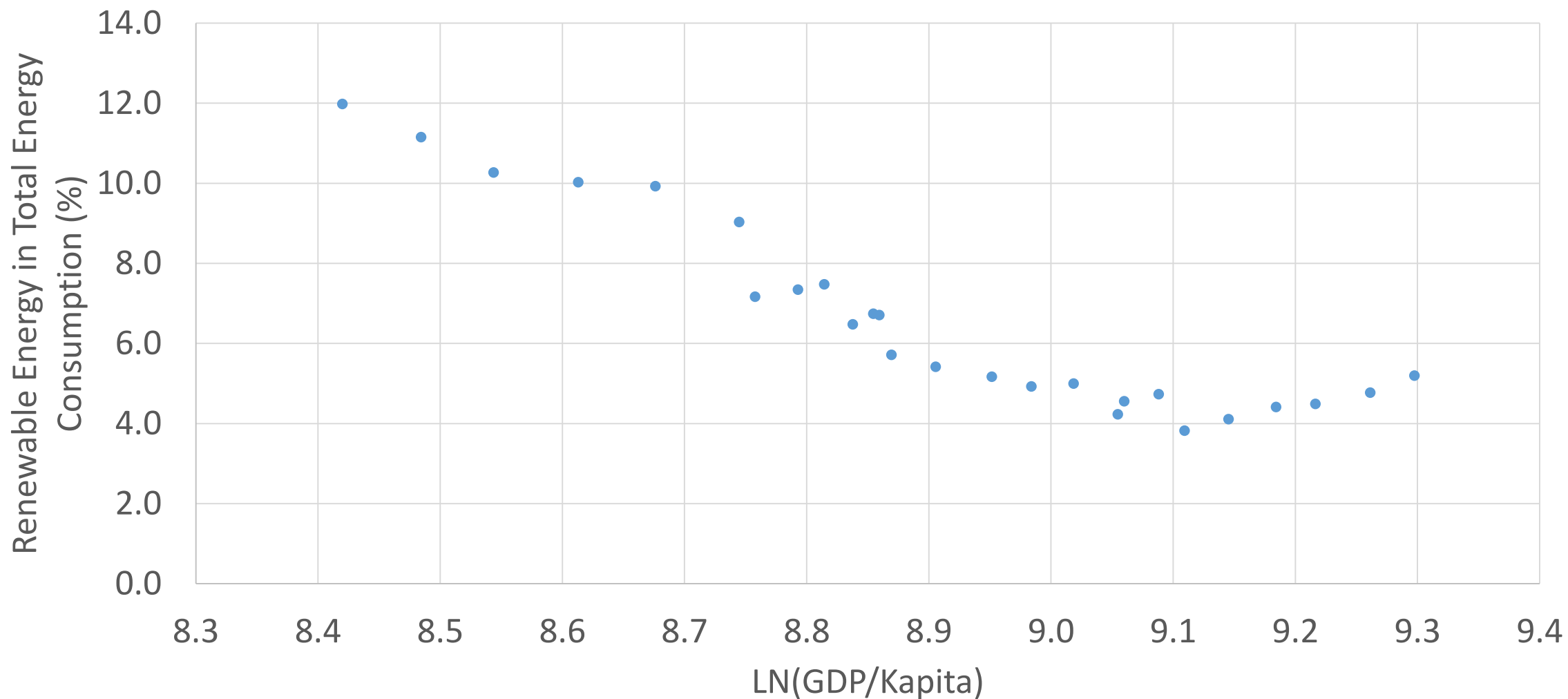


FIGURE 12: RENEWABLE ENERGY AND GDP/KAPITA, UNITED STATES, 1990-2018

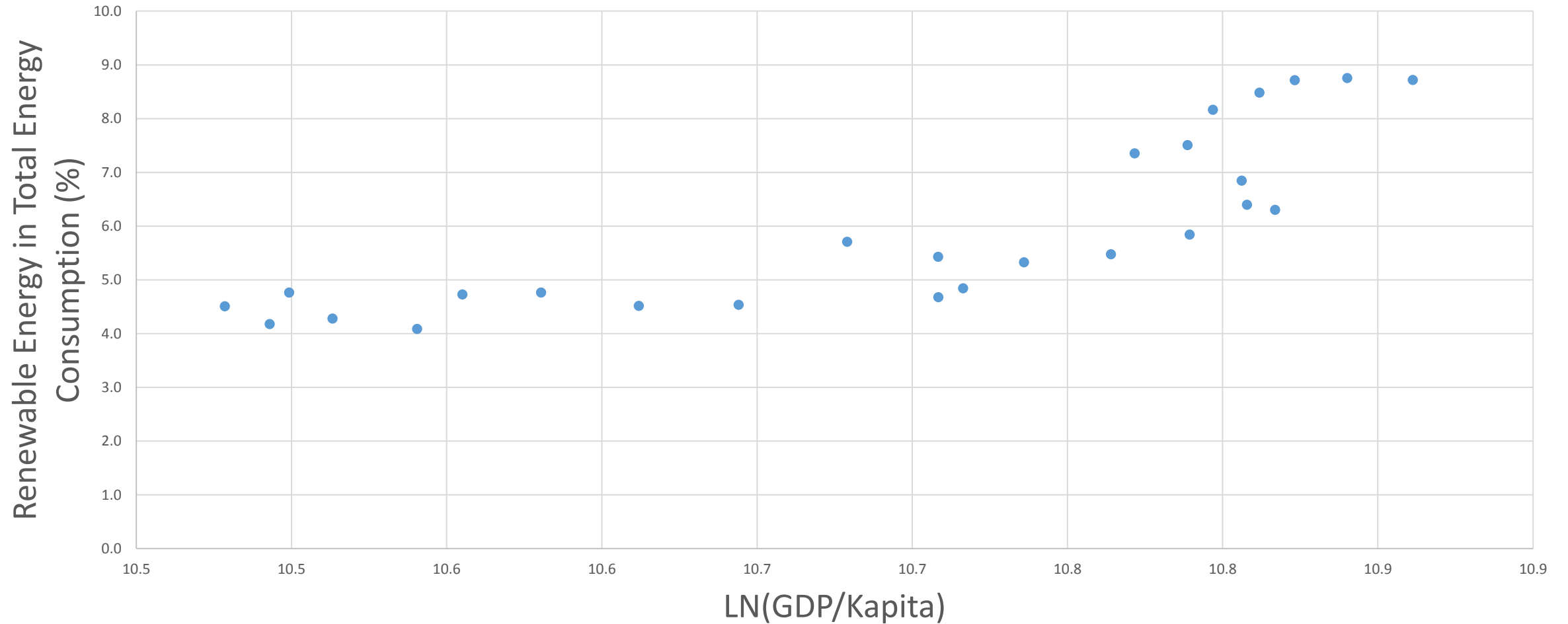
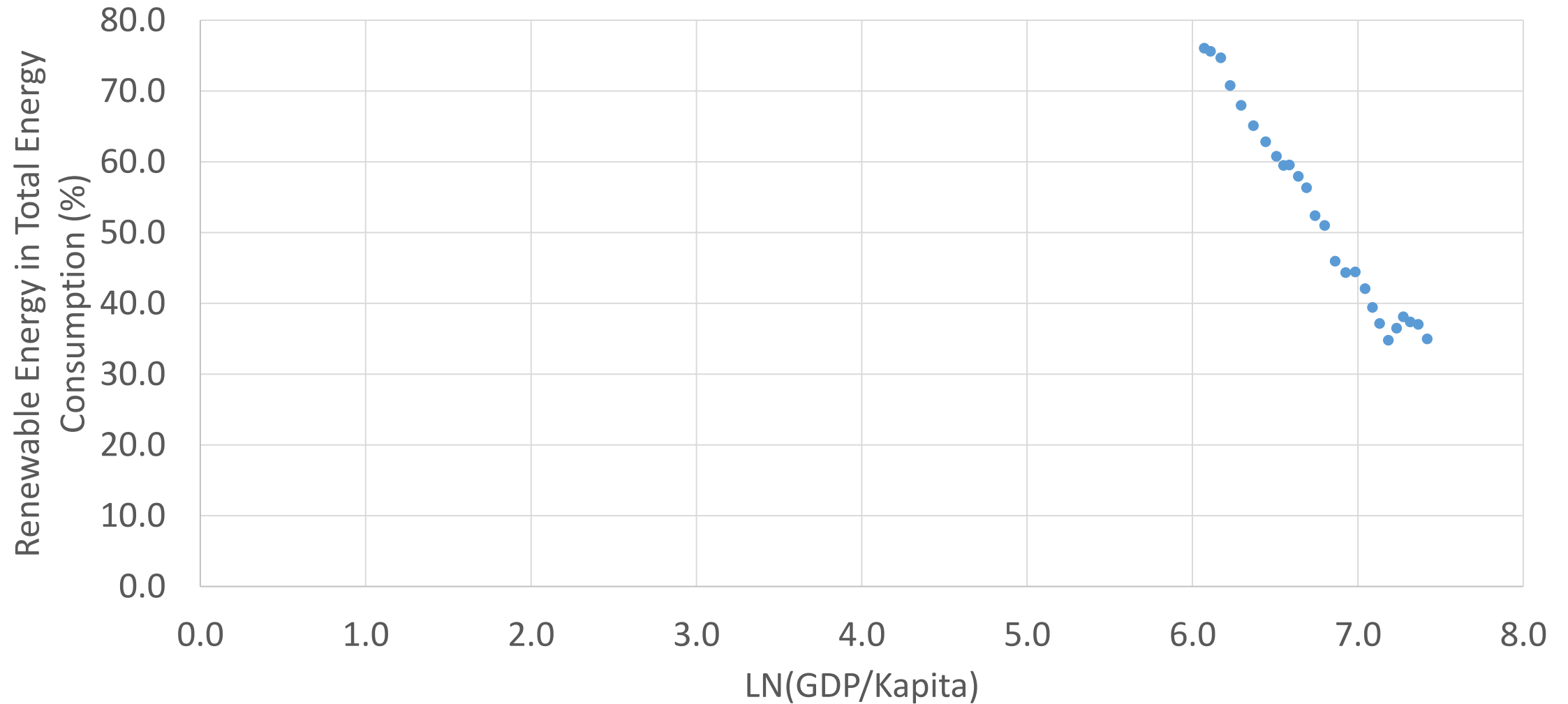


FIGURE 13: RENEWABLE ENERGY AND GDP/KAPITA, VIETNAM, 1990-2018



6.2 HEALTH INDICATORS

- ❑ Korean Republic and China show a significant rise in beds per 1000 people with rapid growth in GDP/Kapita (Figure 14 and 16).
- ❑ Indonesia showed a rise in hospital beds per 1000 people since 2000, but is has stagnated after 2010 (Figure 15).
- ❑ Malaysia shows a flat curve suggesting that healthcare in the country has stagnated since the 1990s (Figure 17).
- ❑ Despite the United States enjoying significantly higher per capita income compared to the other countries studied here, its beds per 1000 people ratio has worsed along with its Gini coefficient (Figure 18).
- ❑ Rising inequality is reflected in falling healthcare in the United States.
- ❑ Vietnam shows a “V” pattern, falling first before rising (Figure 19).
- ❑ Nevertheless, Vietnam has incredibly produced the best defence against COVID19 with the least infections and deaths (Table 1). Its early response, lockdown, creaful targeted screening has helped the country perform commendably. Malaysia and Korea are the next best performers.

FIGURE 14 HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, CHINA, 1990-2018

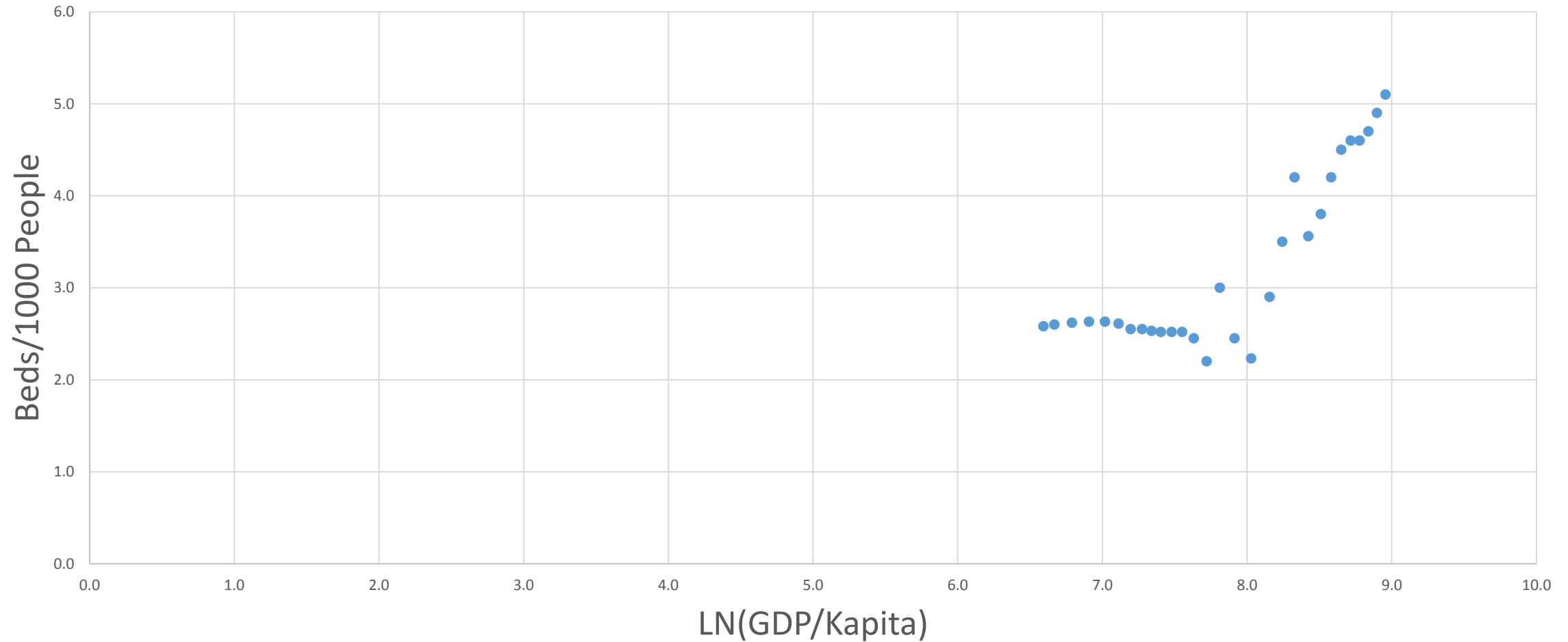


FIGURE 15: HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, INDONESIA, 1990-2018

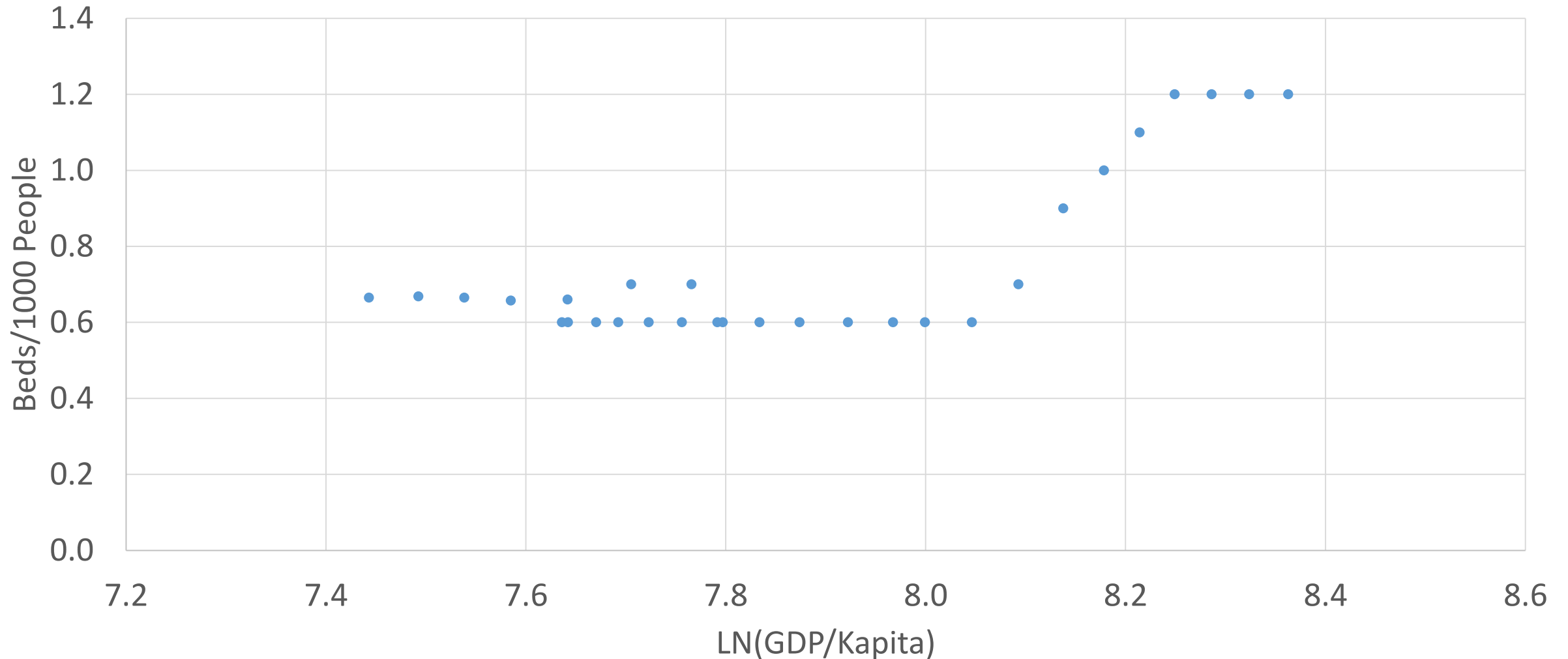


FIGURE 16 HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, KOREA REP., 1990-2018

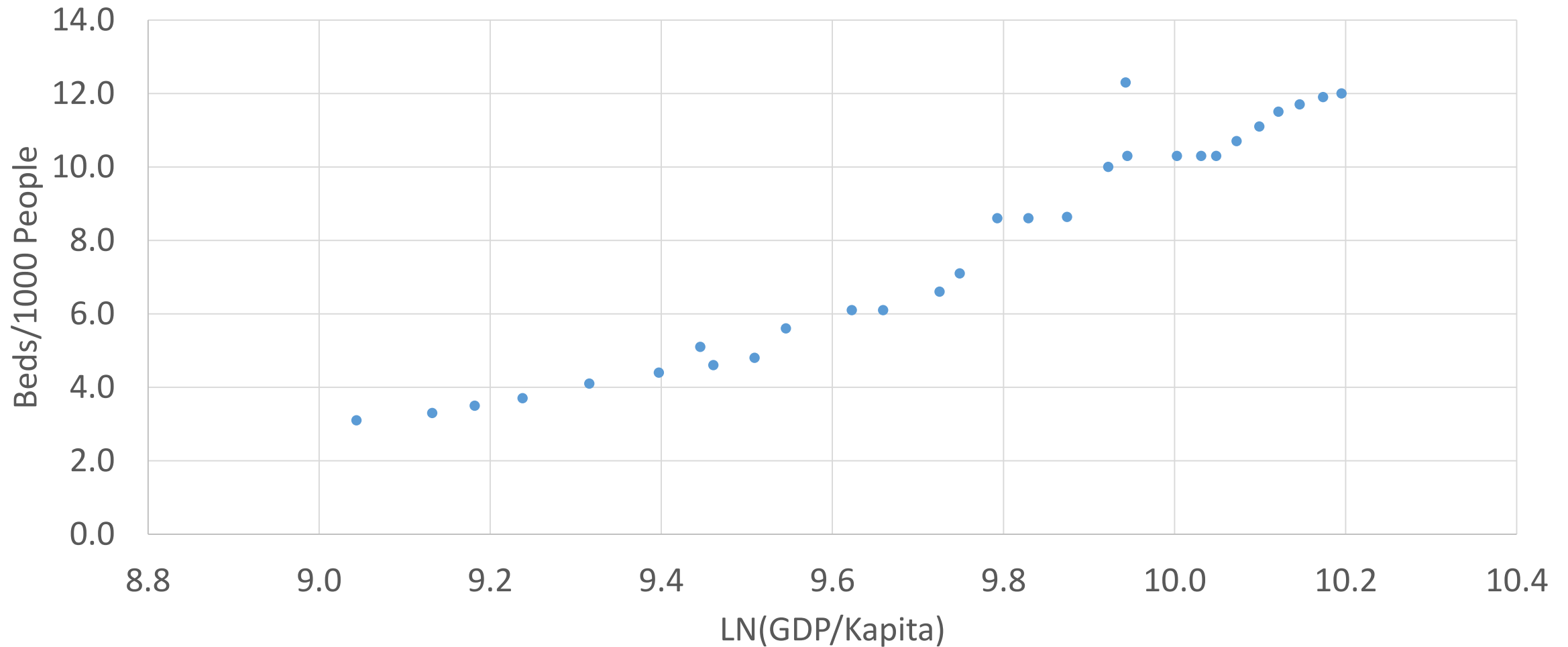


FIGURE 17: HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, MALAYSIA, 1990-2018

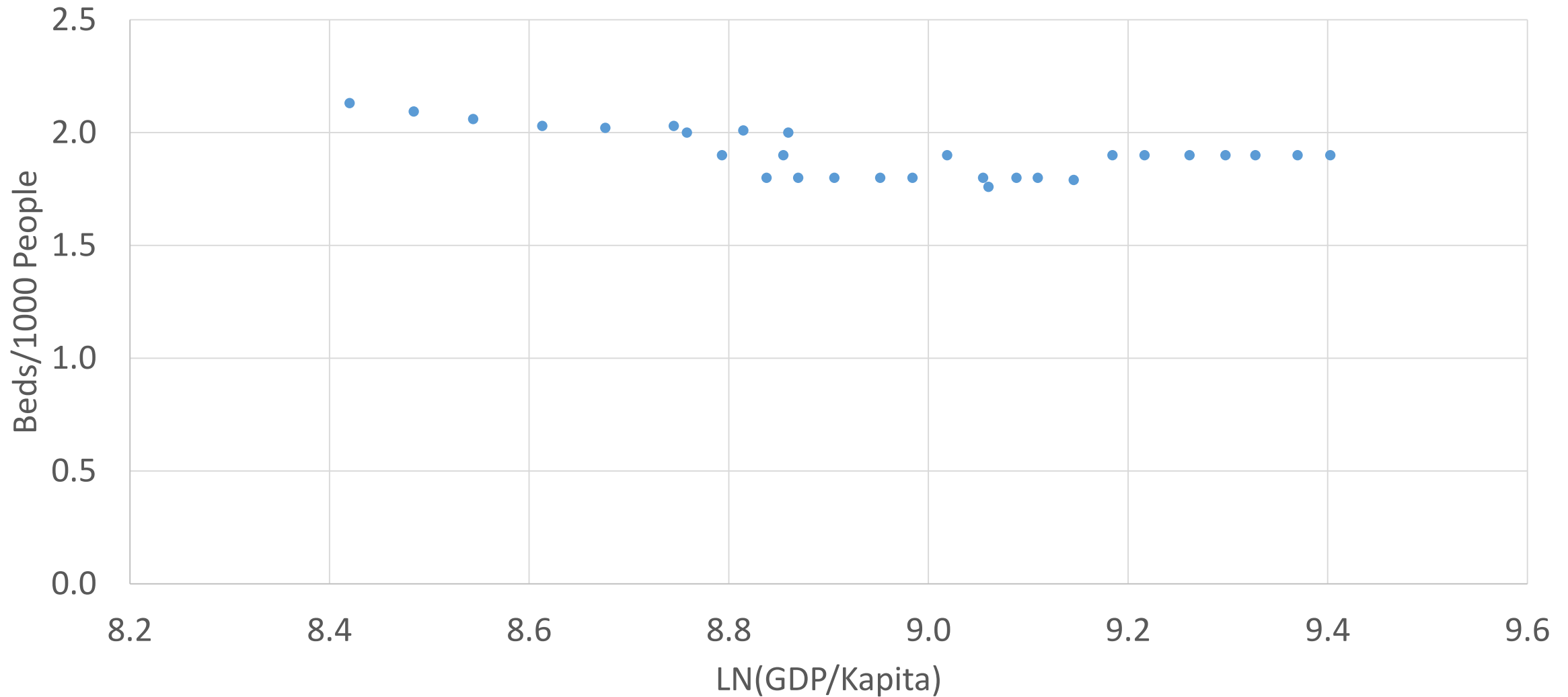


FIGURE 18: HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, UNITED STATES, 1990-2018

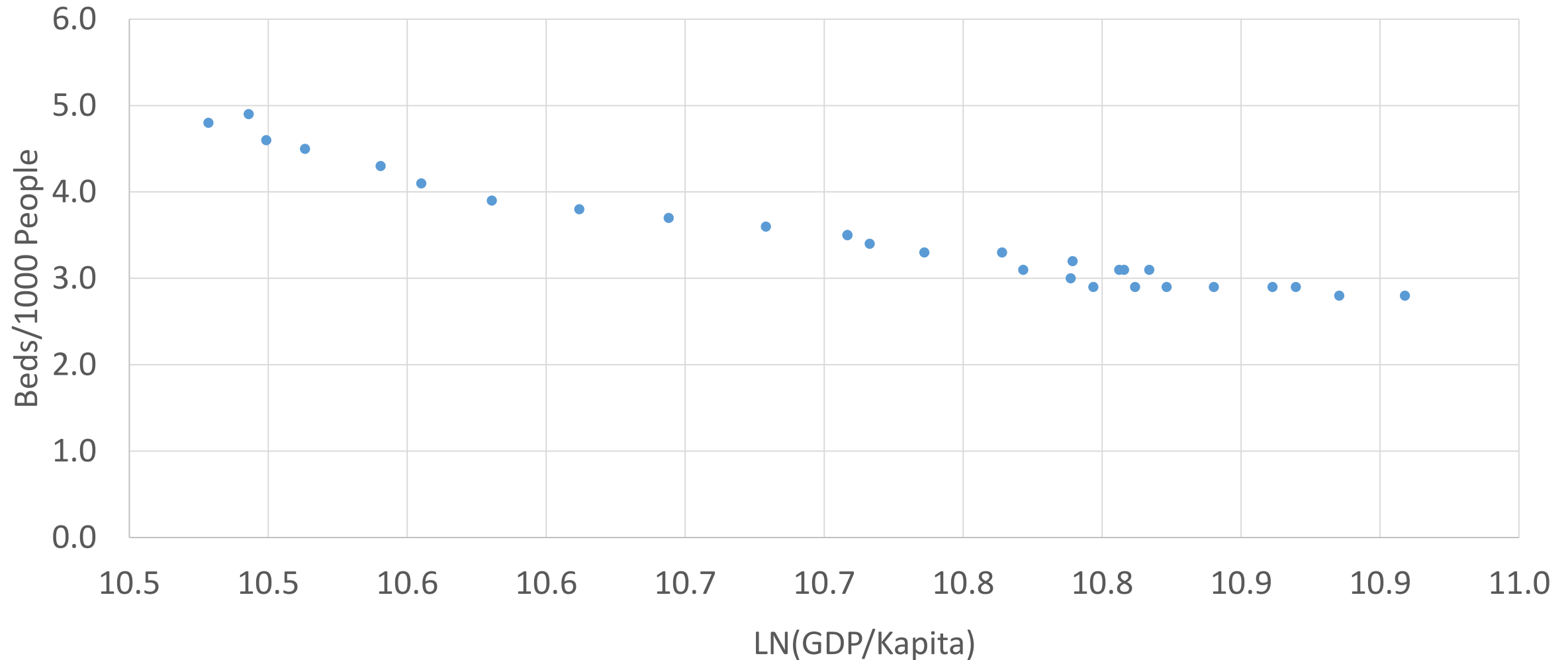
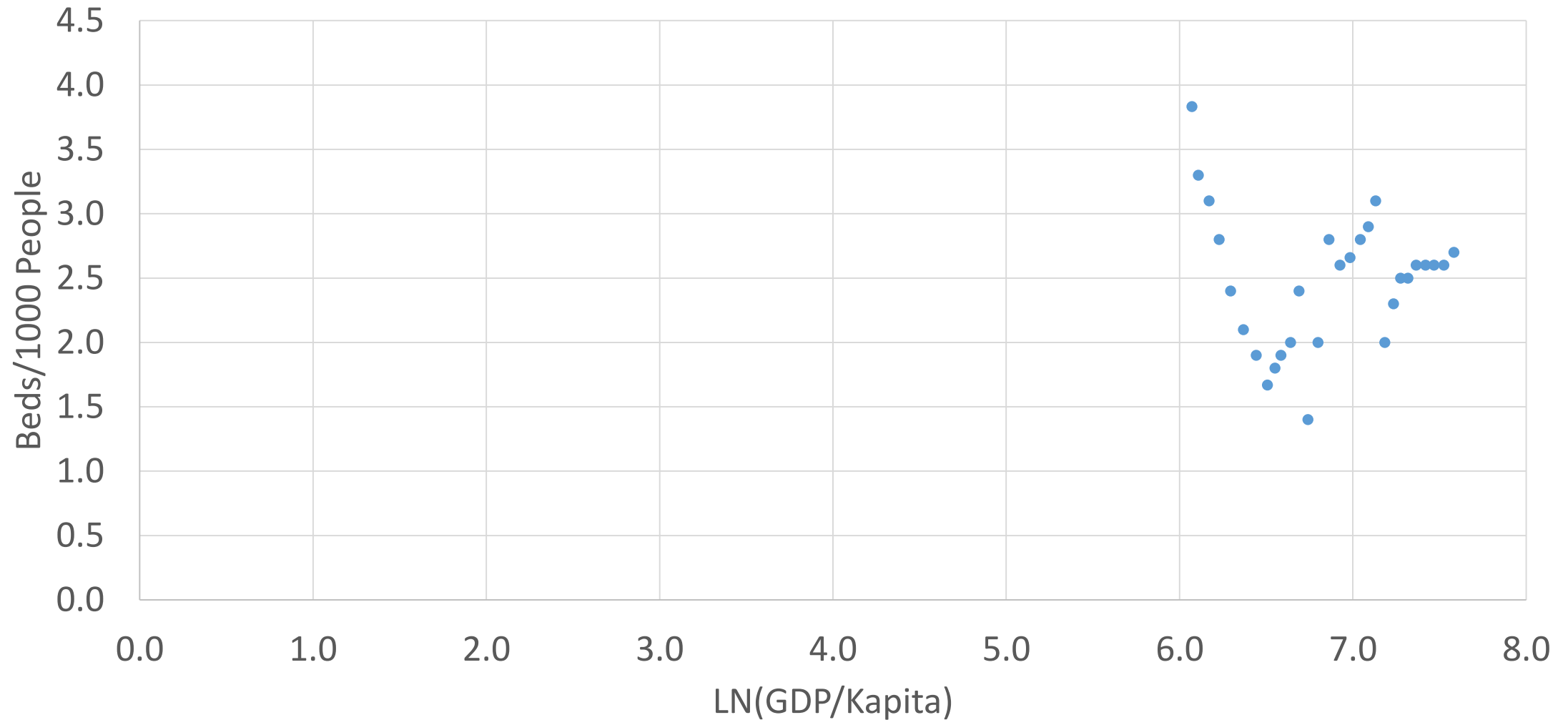


FIGURE 19: HOSPITAL BEDS/1000 PEOPLE AND GDP/KAPITA, VIETNAM, 1990-2018



6.3 SOCIOECONOMIC EQUALITY

- ❑ Income inequality worsened initially in China from 1990 but has subsequently started improving after 2005 with GDP/Kapita (Figure 20).
- ❑ Income inequality worsened in Indonesia from 1990 until about 2008, but has since improved (Figure 21).
- ❑ Income inequality in Malaysia worsened slightly from 1990 until 2001, but has since gradually improved (Figure 22).
- ❑ The United States has continued to face a trend rise in income inequality with economic growth (Figure 23).
- ❑ Vietnam's Gini coefficient showed no relationship suggesting that it has yet to establish a direction of relationship since it started reforming, though it was lowest in the early 1990s (Figure 24).

FIGURE 20: INCOME INEQUALITY AND GDP/KAPITA, CHINA, 1990-2018

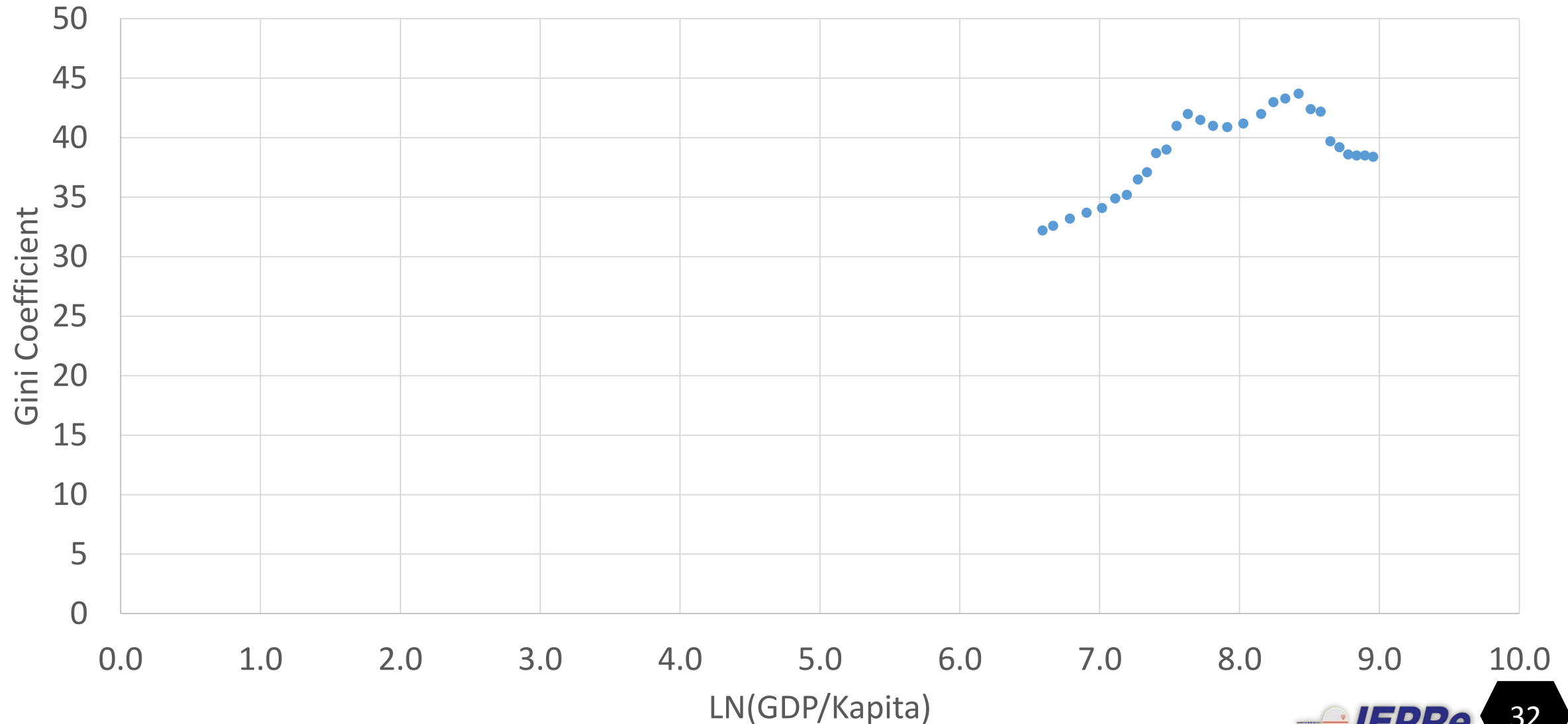


FIGURE 21: INCOME INEQUALITY AND GDP/KAPITA, INDONESIA, 1990-2018

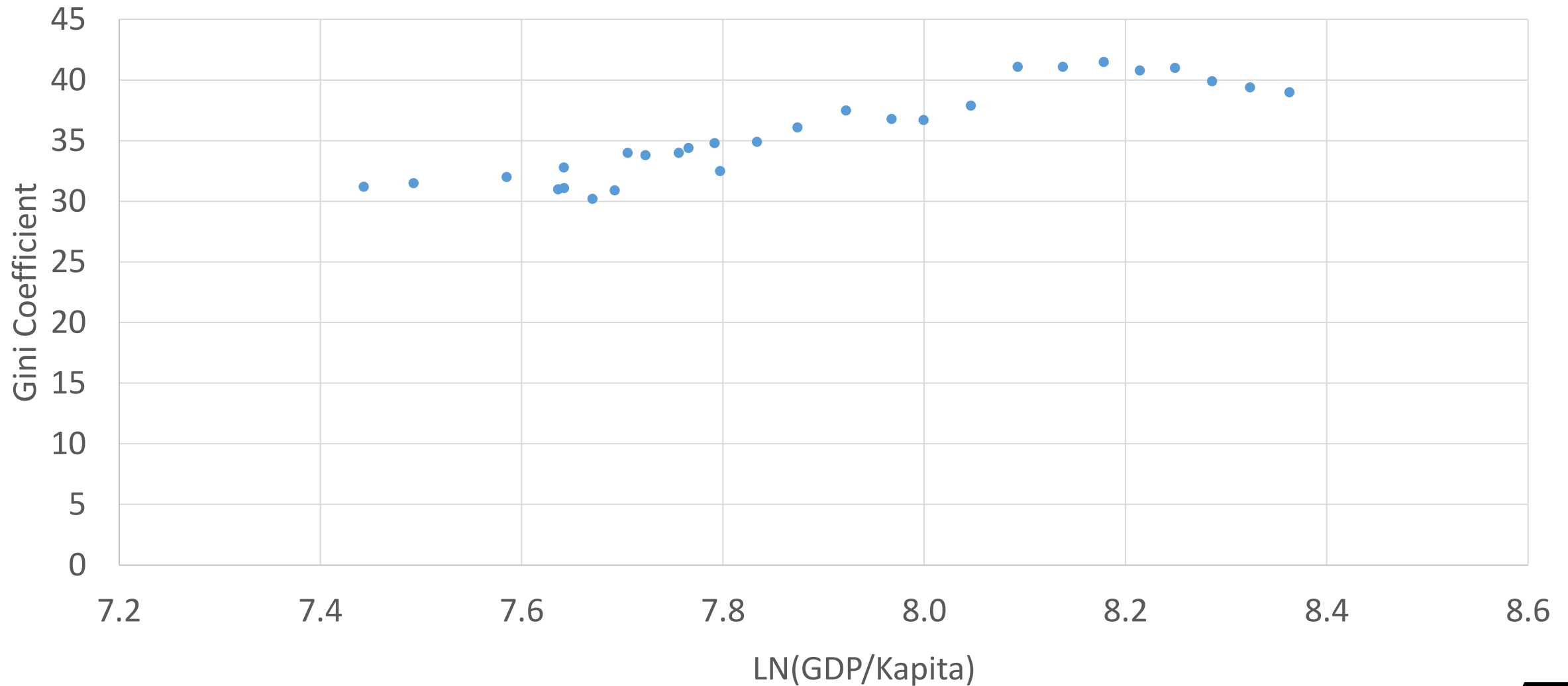


FIGURE 22: INCOME INEQUALITY AND GDP/KAPITA, MALAYSIA, 1990-2018

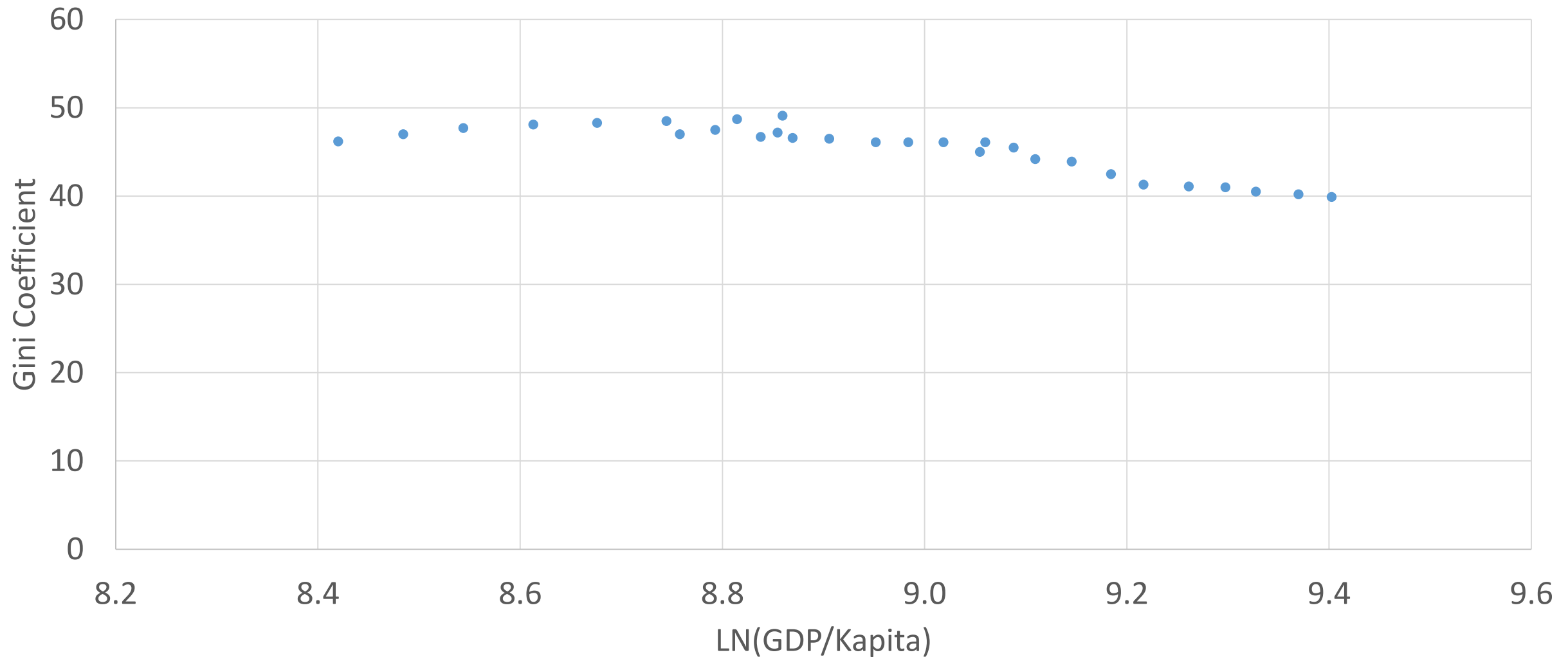


FIGURE 23: INCOME INEQUALITY AND GDP/KAPITA, UNITED STATES, 1990-2018

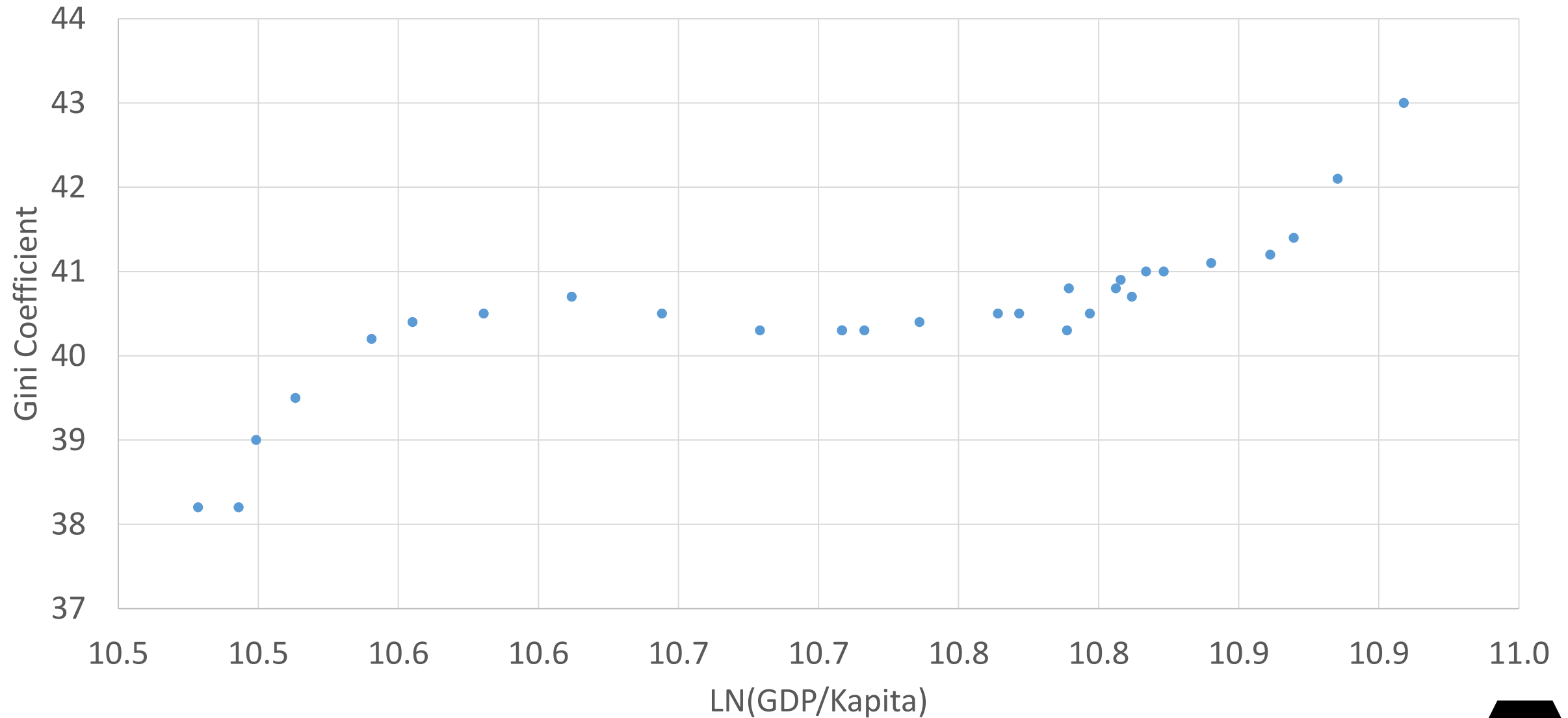


FIGURE 24: INCOME INEQUALITY AND GDP/KAPITA, VIETNAM, 1990-2018

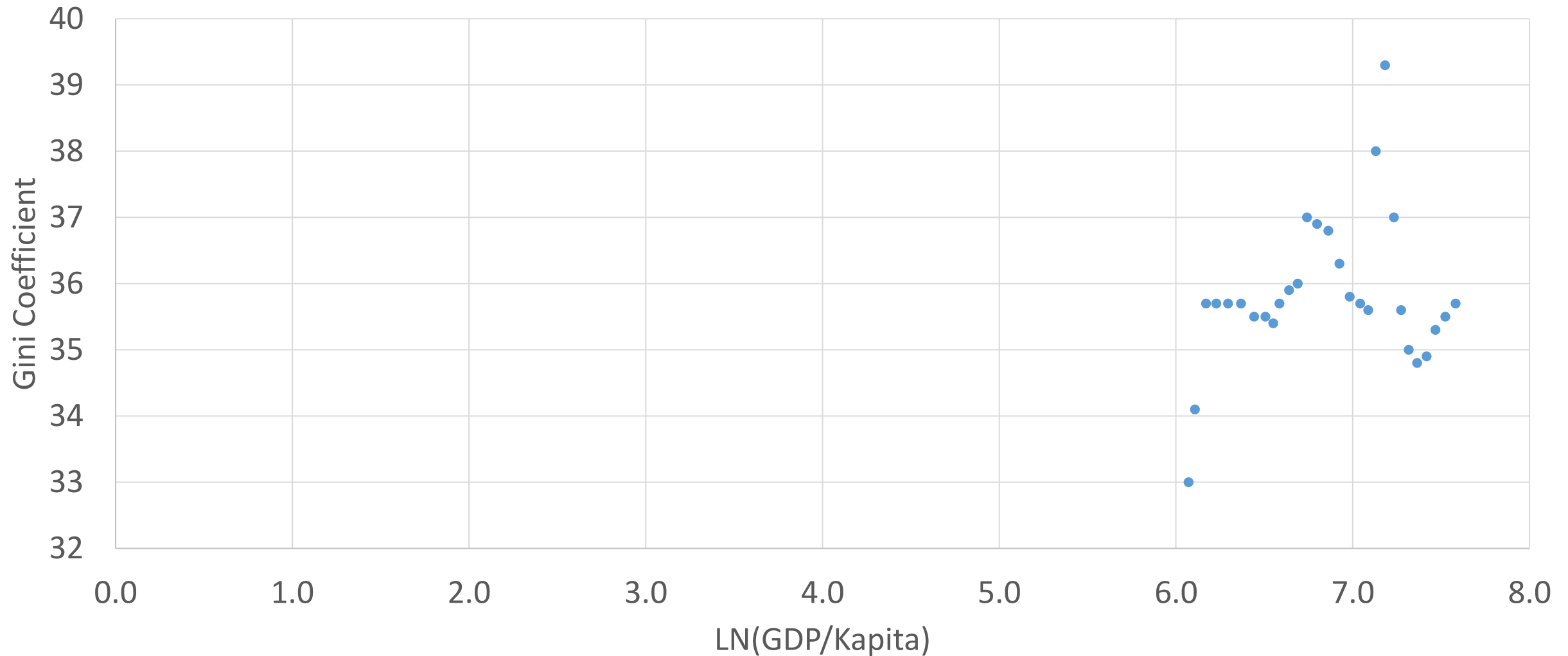


TABLE 1: COVID19 INFECTIONS AND DEATHS, SELECTED ECONOMIES, 2020

	GDP/Kapita*	Infections	Deaths	Deaths/1000 People
United States	54656	1988700	112101	339
China	7753	83036	4634	3
Indonesia	4285	31186	1851	7
Korea Rep.	26777	11776	273	5
Malaysia	12120	8322	117	4
Vietnam	1964	329	0	0

Note: * - 2018 Figures in 2010 USD prices; Other figures are for 6 June 2020

7. CONCLUSION

- ❑ This lecture attempted to emphasize the critical relationship between four pillars, namely, material growth, ecological and environmental balancing, health and socioeconomic equality, though for brevity it limited the discussion to particular proxies.
- ❑ The rise in renewable energy as a share of energy consumption shows improvements in the United States, Korea, China and Malaysia. However, Vietnam shows a skewed rise in the use of non-renewable energy, while Indonesia has yet to enjoy a rise in renewable energy in energy consumption.
- ❑ Hospital beds intensity has improved in most of the countries with Korea and China showing the biggest improvements. However, it has worsened in the United States, which seems to tie with worsening inequality in the country.
- ❑ The evidence also demonstrates that the relationship between material development and the remaining critical pillars evolve over time. However, while China, Indonesia, Korea and Malaysia have enjoyed a improved income distribution, the situation in the United States shows and trend worsening. Vietnam showed no relationship.

QUESTION & ANSWER SESSION



THANK YOU



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