

# The Perspective of Balancing the Economic Growth of Healthcare Systems and Environmental Prevention: The Efficient Budget for ASEAN-3 Countries

Anuphak Saosaovaphak, Chiang Mai University, Thailand

Chukiat Chaiboonsri, Chiang Mai University, Thailand

Satawat O. Wannapan, Chiang Mai University, Thailand

## ABSTRACT

Based on real situations that mankind is confronting with the difficult era, insufficiency in food supplies, natural disasters, epidemic, etc., the paper is to econometrically compute portfolio optimization and predict efficiency frontiers for solving the most sensible scenario to suggest a sustainable policy in the three important pillars such as the growth of economic systems, environmental management, and public healthcare. The main observations are annual time-series information between 2000 and 2017 collected from three countries in ASEAN. Singapore, Thailand, and Malaysia are the targets. Methodologically, this research applies the quantum mechanism and the wave function for clarifying a real data distribution, true mean, and standard deviation of the data. These outcomes are the initial raw material for the modern portfolio optimization (for short-run policies) and efficient frontier computation (for long-term policies). Empirically, the results show some exclusive issues that can help in managing feasible budget allocations fairly and sustainably.

## KEYWORDS

ASEAN Countries, Economic Growth, Efficiency Frontier, Environment, Modern Portfolio Optimization, Public Healthcare, Quantum Mechanics, Sustainability, Wave Function

## 1. INTRODUCTION

It is undeniable to state that this era is the age of super-high technologies. Globalization has been now making people become untouchable since the world is continuously smaller by wireless networks. They are connected always with micro technologies in small devices, especially smart phones. They want to reach the sky; they can do it by overcoming aerodynamics. They want to skill their juvenile; they try to cheat the skin and body by unethical augmentation. Even they want to conquer the planet; they have done it by vastly using and consuming natural resources to satisfy their eagerness. Interestingly, if nothing they plan to do will be impossible for them, why the chronicle struggles such as economic collapses, rumor wars, natural disasters, even epidemic every 100 years still threaten this kind of the great living creature, which is created from dust.

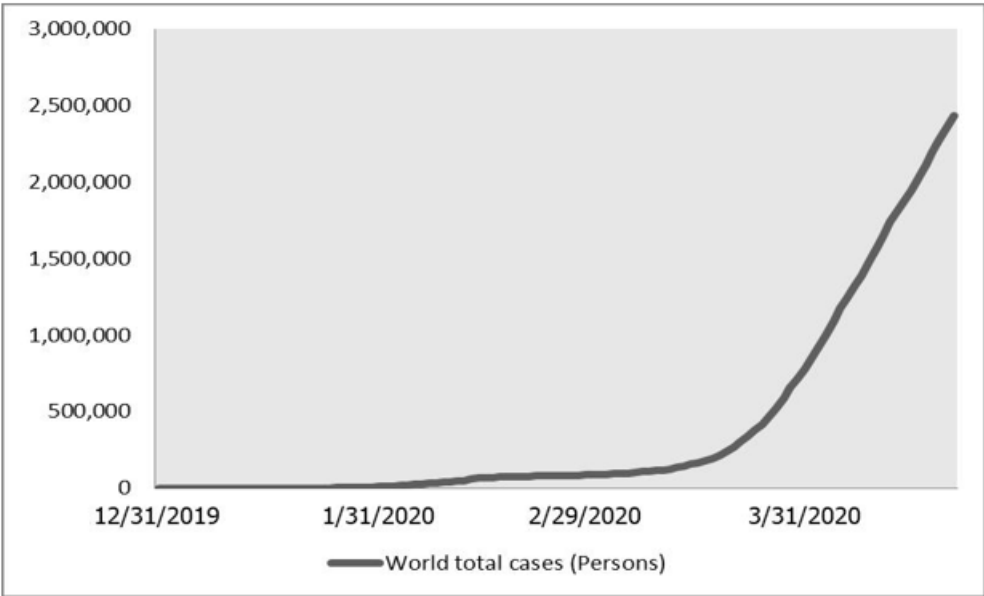
It has been several years that humans are struggling to overwhelm the nature cycle. As Figure 1, deforestation has been appeared during 1990 to 2016, and this trend is seemingly unstoppable.

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People have seized benefits from forests, but the restoration has not been consciously realized. The unflavored sequence was detected in 2003, scientists and the world were awakening on the ability of coronaviruses for animal-to-human transmission. It was obviously one of the worst epidemics in humankind's history (Lau & Chan, 2015). The trace was back to the wildlife market in China as the intermediate host (Lau et al, 2005; Ge, 2013). In 2019, the consequent has been far worst. The new coronavirus stated by (Hoek, 2004), which is yet difficult to control its rapid spreads, is not a new issue, but it is ignored. Figure 2 and 3 are the evidences. The rocketed exponential graphs are the great failure in the world healthcare history. Is the cause from the advance of civilization, or natural revolution? This question seems to be far from decisively making the answer. However, it is inevitable that humans are dragged into the charge of attempted response victims.

Figure 1. The trend of world forest area (sq.km)



Source: World Bank Database (<https://data.worldbank.org/indicator/AG.LND.FRST.ZS>.)

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