

The Economic Costs of Infectious Diseases

Severe Acute Respiratory Syndrome (SARS) has highlighted the potentially severe threat posed by infectious diseases to modern economies.

Background

SARS was first detected in southern China in November 2002. Five months later on 28 April 2003, after spreading to 28 countries, the World Health Organization (WHO) announced its containment in Vietnam, and the encouraging news that the outbreak may have peaked in the high risk areas of Toronto, Hong Kong and Singapore.

Much is yet to be discovered about the virus in terms of both its lethality and its communicability. The lethality of the virus is yet to be confirmed due to the early stage of the epidemic and statistical anomalies in reporting. Current estimates of the death rate stand at

up to 10 per cent.¹ At this stage, SARS is thought to spread by close person-to-person contact or direct contact with infectious material, with most cases affecting carers and health care workers of patients.

Research on the cause of the virus has focused on the presence of a previously unknown coronavirus in the majority of SARS patients. Coronaviruses are common in livestock and poultry, but were previously thought to cause only common colds in humans.

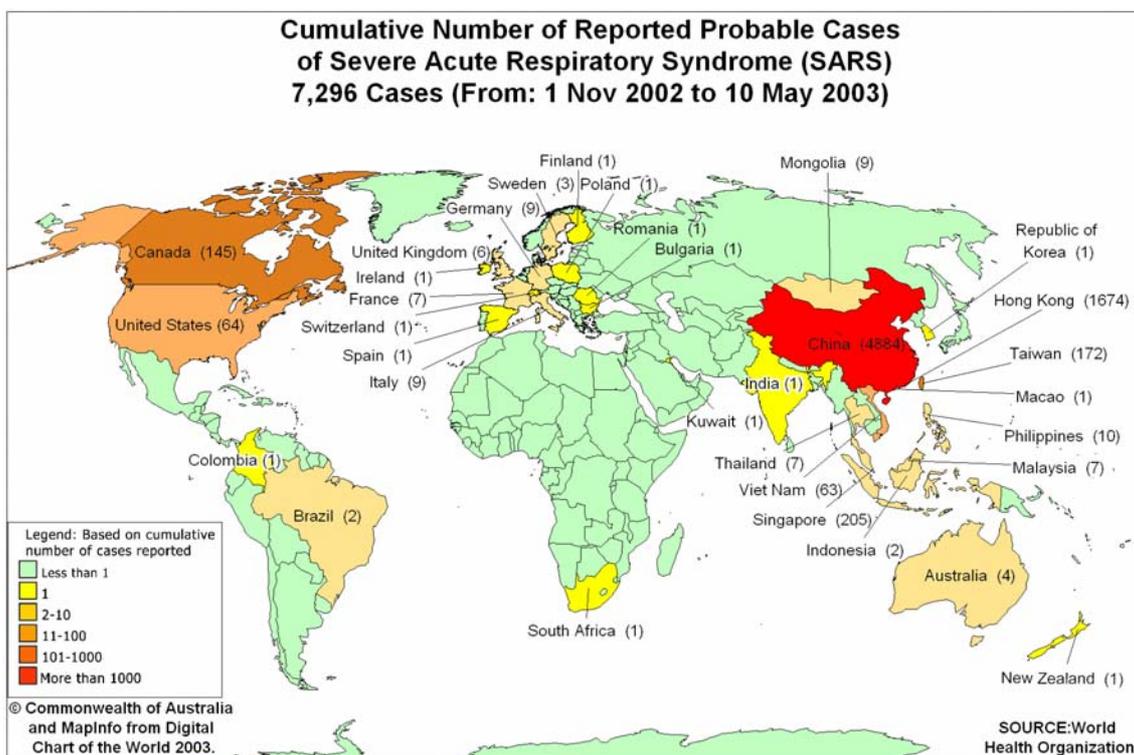
The Infectious Disease Threat

The threat posed by infectious disease is not new. Influenza pandemics occurred in 1957 (the Asian flu), 1968 (the Hong Kong flu) and most notably in 1918 (the Spanish flu). The Spanish flu, occurring at the close of World War I, resulted in more than double the number of battlefield deaths.

Australia suffered more 11 500 Spanish influenza related deaths, with 60 per cent of these in the 20-45 years age group.

However, modern travel, migration, demographic changes, commerce and even medical procedures (overuse of antibiotics causing microbial resistance) have greatly increased the threat of infectious disease outbreaks. It is a widely accepted belief in the scientific community that it is not a question of whether, but when another pandemic such as the 1918 Spanish influenza occurs.

The economic cost of infectious disease outbreaks are increasingly becoming a global concern. Estimates on the cost of the SARS outbreak range from US\$10 billion to US\$30 billion. This can be compared to the 1994 locally-contained outbreak of plague in Surat, India, estimated to cost of



US\$2 billion and the 1997 Avian Flu in Hong Kong estimated to have cost hundreds of millions of dollars in lost poultry production, commerce and tourism.²

A study by the US National Center for Infectious Diseases in 1999 estimated that the economic impact of an influenza pandemic in the United States would range from US\$71.3 billion to US\$166.5 billion.³ If an influenza pandemic such as the 1918 Spanish influenza were to occur in Australia today, it could be expected to cause more than 42 000 deaths per year, resulting in an enormous economic cost.⁴

Economic Costs

While the economic costs of the SARS outbreak are only just beginning to be calculated, it is already clear that it will severely affect the growth rates of major East Asian economies.

Given that East Asia, excluding Japan, was the fastest growing region in the world economy in 2002, the effect of SARS on regional economies will be felt globally. Reflecting these uncertain global conditions, the World Trade Organization issued a revised forecast of 2.5 to 3.0 per cent global trade growth in 2003, compared to an original forecast of 5.0 per cent.

Similarly, the Asian Development Bank (ADB) and the World Bank⁵ have both cited SARS in forecasting weaker growth rates for the East Asian region.

Immediate Effects

The immediate economic effects of the SARS outbreak have affected services-related businesses, particularly those in the tourism services sector. Cancelled or postponed business and leisure tourism has further compounded the effect of softened domestic demand as consumers avoid restaurants and public places, seeking to minimise the risk of infection.

This has exacerbated the effects on the tourism industry already suffering from weakened demand due to the conflict in Iraq and

terrorism scares. The Australian Tourist Commission has indicated drops in international arrivals both from SARS affected countries and long-haul travellers, deterred by conflict in Iraq, terrorism and undesirability of transit in popular stop-over destinations, Hong Kong and Singapore.

Similarly, the education services sector will be adversely affected as student numbers reduce in the short term to avoid infection through air travel and possible quarantine periods, and in the long term due to weaker economic conditions in domestic economies.

Softened domestic demand has also affected downstream sectors, in Australia's case affecting the demand in key markets for live crustaceans and fish, dairy, meat products and fresh fruit.

Long-term Effects

While the longer-term effects of the SARS outbreak are yet to be determined due to its evolving nature, several points have become evident:

- The Chinese economy will be affected not only by the immediate outbreak but by perceptions of the government's response. This could threaten both foreign direct investment decisions and domestic confidence.
- Since the terrorist attacks of September 11 there has been a gradual rise in the number of businesses resorting to IT, such as video-conferencing, rather than physical travel. This could be expected to increase as a result of the SARS outbreak, resulting in a long-term decline in business travel.
- Businesses reliant on global supply chains should expect future supply–demand shocks. As a result of the uncertainty caused by SARS, manufacturers may increase purchases to maintain flexibility in inventories, thus resulting in excess inventories as stability returns. This has been a cause of

previous failures in the semi conductor market of East Asia.

- Given the possibility of a longer duration of the SARS outbreak in China, an increasingly large number of trade shows will seek alternative lower risk regional venues such as South Korea.
- The confidence of small to medium size enterprise (SME) exporters to engage in the Chinese market may weaken, slowing a key growth component in the government's plan to double the number of exporters by 2006.

1. Comments by Prof R. Smallwood, Commonwealth Chief Medical Officer at the Homeland Security Conference 28–29 April 2003.
2. US National Intelligence Council, 'The Global infectious disease threat and its implications for the United States', January 2000.
3. Martin Meltzer, Nancy Cox, and Keiji Fukuda, 'The economic impact of pandemic influenza in the United States; priorities for intervention', *Emerging Infectious Diseases*, Sept–Oct 1999, v. 5.
4. Department of Health and Aged Care, *Framework for an Australian influenza pandemic plan*, June 1999
5. ADB cut growth forecasts for the region from 5.6 per cent in December 2002 to 5.3 per cent in April 2003. The World Bank cut growth forecasts from 5.5 per cent to 5.0 per cent.

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