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EDITORIAL

Economic impact of avian flu pandemic on Asia

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The outbreak of SARS in 2003 showed that even a disease with a relatively small health impact can have a major economic effect. Globally, SARS is believed to have infected around 8000 people, killing 800 (1). The Asian Development Bank estimated that the economic impact of SARS was around $18 billion in East Asia, around 0.6% of gross domestic product (2). In 1997, the first human who was infected with H5N1 reported from Hong Kong, following with 18 infected people among whom 6 were died. Fortunately, the Hong Kong Government destroyed around 1.5 million poultry and interrupted the direct transmission of virus from birds to human at that time. The next 5-year period was the disease free period while in February 2003 two new cases were reported in south China who had migrated from Hong Kong.

A flu pandemic would put at risk the health of millions and have serious economic consequences. The recent outbreak of the avian influenza H5N1 (avian flu), has raised concerns about a new global pandemic. The outbreak has already severely damaged poultry production in several countries. Coming one year after the outbreak of SARS in 2003, the public was quite alert and governments too action to cull and destroy poultry at risk. However, the reappearance of the disease in 2005 shows that this action was not sufficient and there is continued risk of human infection.

This brief looks at the possible economic consequences for Asia of a mutation of avian flu leading to human-to-human transmission, using different assumptions about the duration and virulence of the flu pandemic. The analysis looks at a relatively mild outbreak, based on the historical experience of previous flu outbreaks and SARS. It focuses on the short-run impact of a pandemic on aggregate economic activity. A pandemic will likely slow or halt economic growth in Asia and lead to a significant reduction in trade, particularly of services. In the long run, potential economic growth will be lower and poverty will increase.

A flu pandemic could be substantially more damaging in both human and economic terms. The World Health Organization (WHO) estimates 2-7 million people could die (3), while other estimates are much higher, exceeding 100 million deaths (4). The 20th century saw three major flu pandemics. The largest, the "Spanish flu" (1918-1919) is believed to have killed between 50-100 million people. No other influenza in history has been this deadly and the high virulence may be due to the specific public health conditions that existed during the First World War. Despite the human cost, the long-run impact of Spanish flu in unclear (5,6). The two other flu pandemics (in 1957-1958 and 1968-1969) killed substantially fewer people (around 1-3 million each). All three flu pandemics mutated

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from forms of avian influenza and at least two of the three originated in Asia (7). The risk of a mutation in the H5N1 virus that spreads easily among humans is quite real.

Even in its early stages, avian flu has already caused significant economic damage. This is primarily due to the damage to the agricultural sector, particularly poultry production. As the outbreak is ongoing, estimates of the cost vary. One estimate puts the direct cost to the livestock sector in Cambodia, Thailand, and Viet Nam at $650 million, however, with the loss of trade, the estimates rise substantially.

Conjectures about the possible human and economic cost of an influenza pandemic are fraught with uncertainty. There is uncertainty about the nature of such pandemic and its economic fallout. There have been few economic studies on the impact of flu. There is considerable epidemiological uncertainty about how many people will be infected and the severity of the disease, and economic uncertainty about how an outbreak will affect economic activity.

The gross attack rate (infection rate) expresses the percentage of the population that is likely to become clinically ill. The potential range is quite high. Typically influenza pandemics have a gross attack rate of 20-40% (7). The percentage of the infected that succumbs to influenza is the case fatality rate. The mortality rate is determined by multiplying the gross attack rate with the case fatality rate. In the case of Spanish flu, it is estimated that the total mortality rate was between 2.5-5% of the world population (8). However, in 1957 outbreak had a mortality rate of 0.024% in the United States. Typically the very young and the old are at the greatest risk of mortality, however each flu outbreak is different and it is not possible to predict what groups will be most vulnerable.

It is also difficult to predict how the public will respond to a flu outbreak. Historical experience shows that even during an epidemic outbreak, the public soon adapts to the disease and economic activity continues. Macroeconomic models can help identify the possible economic impacts on an avian flu outbreak. The analysis looks at two scenarios. The scenarios both assume a relatively mild pandemic, with an attack rate of 20% and a case fatality rate of 0.5%. The flu lasts one year and is relatively well spread out through the year. This is far less severe than the Spanish flu pandemic of 1918 but is probably more severe than the other two pandemics of the 20th century. This pandemic would cost the lives of around 3 million Asians.

The scenarios work through the demand side as aggregate consumption declines and there is a reduction in the trade of services, including tourism and through the supply side, as the disease impacts the health of the labor force. Historically pandemics have different locations in waves and the assumptions here on the duration of the outbreak are simplifications.

Scenario 1 assumes that the psychological impact of an avian flu pandemic is short-lived and only seriously affects demand for two quarters. Under this scenario, Asia faces a demand shock of around $99.2billion in its 2006 GDP, the equivalent of 2.3 percentage points of GDP. Scenario 2 assumes that the psychological impact of the outbreak lasts longer and seriously affects demand for four quarters with another four quarters with a smaller exogenous shock to consumption and export services. This contraction affects Asia both directly as Asian consumers reduce their activity, and indirectly as the rest of the world reduces its consumption, impacting trade and investment.

Here, the economic impact would be more severe and would likely force the world into a recession. The estimated loss would be $282.7 billion, around 6.5% points of GDP.

As can be seen, some countries are more affected than others. Two factors stand out. First, open economies are more vulnerable to international economic shocks. Second, economies

that are significant exporters of services are hard-hit. In Hong Kong, China and in Singapore, trade accounts for a significant share of total GDP and these two countries are major exporters of services. Malaysia and Thailand are also significant exporters of goods and services.

Our experience with SARS and its psychological impacts on economic activities implies that the government should react appropriately to pandemics and do not interfere with panic. For example, limited pandemics could be easily controlled with slight precautions and limitations. Needless to say, international organizations have an important role in action plan and could manage the situation appropriately. Developed societies should help developing countries to overcome the problem and health sectors must be supported adequately. Since the new influenza pandemic has lots of unknown aspects, prolonged pandemics with a high virulence may entail irretrievable losses. Thus, governmental strategies impart an utmost role on economic outcomes. Strategic planning, crisis management, and promoting health might be helpful to control the situation.

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