



**The World Bank
East Asia and Pacific Region**

Spread of Avian Flu Could Affect Next Year's Economic Outlook

Excerpted from the November 2005 ***East Asia Update – Countering
Global Shocks***

Full report available at: <http://www.worldbank.org/eapupdate>

The Avian and Human Influenza Threat

Last April's East Asia Update noted the threat to regional and global public health from outbreaks of avian influenza A (H5N1) in East Asia. Since then outbreaks among wild birds and poultry have spread to Russia, Kazakhstan, Turkey, Romania and Croatia, while, in East Asia, new outbreaks this year have occurred in Cambodia, China, Indonesia, Lao PDR, Thailand and Vietnam. The confirmed number of human cases reported to the WHO since the end of 2003 has increased to 121, of whom just over half have died. (Table 4).

Table 4. Human Cases of Avian Influenza A (H5N1)

	Cases	Deaths	% Fatality
Cambodia	4	4	100.0
Indonesia	7	4	57.1
Thailand	19	13	68.4
Vietnam	91	41	45.1
Total	121	62	51.2
Cumulative number of confirmed cases reported to WHO. October 24, 2005.			

While the bulk of human cases so far are thought to be the result of transmission of the virus from animals to humans, there is great concern that genetic changes will allow the H5N1 virus to achieve the capacity for efficient and sustained transmission among humans, leading to a human influenza pandemic, with high levels of illness, death and other human, economic and social costs in East Asia and around the world.¹ As a result the question of how to prevent or prepare for such a pandemic is quickly vaulting to a top priority for governments around the world. In October alone inter-governmental meetings of officials and policy makers from affected and concerned countries took place in the United States, Canada and Australia, to be followed by a partners meeting on avian influenza and human pandemic influenza in Geneva on November 7-9. (Box 1). The following comments look at potential economic impacts and policy responses in East Asia and the world.

¹ Writing Committee of the WHO Consultation on Human Influenza A/H5. "Avian Influenza A (H5N1) Infection in Humans." *New England Journal of Medicine*. 353: 1374-85. September 29, 2005.

Box 1. Partners Meeting on Avian Influenza and Human Pandemic Influenza.

November 7-9. Geneva, Switzerland.

This meeting is cosponsored by the World Health Organization, the Food and Agriculture Organization, the World Organization for Animal Health, and the World Bank. The meeting will include members of the sponsoring organizations, country representatives, donors, and regional organizations involved in the influenza issue.

The objectives are:

- To confirm a two-pronged strategy: control avian influenza at source in animals in the short and medium term, and simultaneously prepare for pandemic influenza;
- To support national plans in line with this strategy through commitment at national, regional and global levels;
- To discuss shared responsibilities of the international community, technical organizations and agencies in assisting affected countries and countries at risk;
- To assess national, regional, and global needs with indications of resources required in the short and medium term, and to review current bilateral and multilateral initiatives to avoid duplication and identify potential synergies;
- To discuss and outline coordination mechanisms necessary at national, sub-regional, regional and global levels to ensure effective mobilization of resources and oversee progress in implementation and impact;
- To identify key next steps based on an agreed-to strategy with political support and backing from the international community.

Avian flu in East Asia

So far, with the principal transmission of the virus occurring among poultry and other birds, the main economic impacts are occurring in the rural areas of several East Asian economies. At the overall macroeconomic level, costs so far have been fairly limited, but could rise significantly going forward, and have already been high for specific sectors and communities.

Economic costs that need to be considered include direct costs such as losses of poultry due to the disease and to control measures such as culling birds, with impacts extending not only to farmers but also to upstream and downstream sectors such as poultry traders, feed mills, breeding farms etc. The largest declines have occurred in Vietnam and Thailand, where they were equal to 15-20% of the stock of poultry. Other but relatively smaller losses of poultry have also occurred in other

economies such as Indonesia, China, Cambodia and Lao PDR.

The size of the poultry sector in the national economies of the region before the epidemic ranged from around 0.6 percent of GDP at the low end in countries like Vietnam and Thailand, to a high of a little over 2 percent in the Philippines, with most countries centering a little over 1 percent of GDP. In an economy like Vietnam, where poultry output is down by around 15 percent, this part of economic loss is worth about 0.1 percent of GDP or about \$45 million. Additional losses have occurred because of lower egg production and reduced activity in distribution channels. On the other hand there have also been important substitution effects, especially towards production of pork. Combining these effects, the direct cost in Vietnam may be around 0.12 percent of GDP.² If similar declines in poultry numbers were to occur in an economy like Indonesia where the poultry sector plays a somewhat larger part in the economy, these direct costs could amount to 0.2 percent of GDP.

These losses, while perhaps limited in overall macroeconomic terms, have been severe in the poultry sector and on associated input and distribution channels. In economies like Vietnam where the bulk of poultry production is still by backyard producers, the impact has been felt by individual rural households, and has only partly been offset by government compensation to farmers. Survey data show that in Vietnam the poorest quintile of households relies more than 3 times as much on poultry income than does the richest quintile, so there are also adverse distributional effects. On the other hand, in economies like Thailand and Indonesia, where production is largely undertaken by industrial and large commercial producers, the impact may be felt in greater unemployment of wage laborers and in corporate bankruptcies.

Secondary or indirect economic costs could also arise, for example, if there is a fall in international tourism because of disease fears or travel restrictions. This does not appear to have occurred so far, with tourist numbers continuing to grow in 2004 and so far in 2005. But this could change, since it is only recently that global media have started prominent reporting on avian influenza.

Finally, the costs of prevention and control also need to be taken into account, including costs to the government of purchase of poultry vaccines, medications and other inputs, hiring workers for culling and cleanup, surveillance and diagnosis, hire of transportation etc. Governments also face the need to pay compensation to poultry owners, which is important in inducing owners not to conceal that a bird flu outbreak has occurred.

² World Bank. "The Costs of Avian Influenza in Vietnam." Policy Note. Hanoi. October 11, 2005.

While such payment is in the nature of a transfer payment for the economy as a whole, it can impose a significant fiscal burden on the government.

Threat of a human influenza pandemic

There are great uncertainties about the timing, virulence, and general scope of a future human flu pandemic. The WHO observes that "Best case scenarios, modeled on the mild pandemic of 1968, project global excess deaths in the range 2 million to 7.4 million. Other estimates that factor in a more virulent virus, similar to that responsible for the deadly 1918 pandemic, estimate much higher numbers of deaths. Both scenarios are scientifically valid. The differences arise from the assumptions about the inherent lethality of the virus, which past experience has shown to vary greatly."³ Other experts go further to argue that "Clinical, epidemiologic, and laboratory evidence suggests that a pandemic caused by the current H5N1 strain would be more likely to mimic the 1918 pandemic than those that occurred more recently. If we translate the rate of death associated with the 1918 influenza virus to that in the current population, there could be 1.7 million deaths in the United States and 180 million to 360 million deaths globally."⁴

Interestingly, the most immediate economic impacts of a pandemic might arise not from actual death or sickness but from the uncoordinated efforts of private individuals to avoid becoming infected. This at least was the experience during SARS, when people tried to avoid infection by minimizing face-to-face interactions, resulting in a severe demand shock for services sectors such as tourism, mass transportation, retail sales, hotels and restaurants, as well as a supply shock due to workplace absenteeism, disruption of production processes and shifts to more costly procedures. To these results of private action could be added economic disruption and costs caused by emergency public policy measures such as quarantines and restrictions on domestic and international travel and trade. Obviously, a highly trade dependent economy such as East Asia could be severely affected by these kinds of restrictions.

It is no doubt foolhardy to even try and estimate the economic costs arising from such deeply disruptive and far-reaching shocks. However one can note that the disruptions associated with SARS led to an immediate economic loss of perhaps 2 percent of East Asian regional GDP in the second quarter of 2003, even though only

³ World Health Organization. "Avian Influenza: Assessing the Pandemic Threat." January, 2005. WHO/CDS/2005.29.

⁴ Michael T. Osterholm. "Preparing for the Next Pandemic." New England Journal of Medicine. 352: 1839-42. May 5, 2005.

about 800 people ultimately died from this disease. Note that a 2 percent loss of global GDP during a global influenza pandemic would represent around \$200 billion in just one quarter (or \$800 billion over a whole year), and it is fair to assume the immediate shock during a flu epidemic could be even larger and last longer than SARS. The 1918 epidemic, for example, came in three waves, spread over two years.

There is evidence that during SARS the costs arising from panic and disruption were magnified by an initial lack of public information, contributing to a large over-estimation by private individuals of the perceived probabilities of infection and death, a fact documented in opinion survey data. This could have led to over-reactions in the preventive actions taken by the population at large. A key policy question for government is therefore how to win the trust and confidence of the population, minimize panic and disruption and indeed mobilize the public as a key partner in beating the disease. Here an honest, transparent public information policy is likely to be critical.

In addition to these immediate costs of disruption, a global flu pandemic would also entail a sizeable loss of potential world output through a reduction in the size and productivity of the world labor force due to illness and death. The effect of disease on the size of the labor force would depend on the virulence and spread of the disease and on how it affected different age groups, among other factors. There would also be a general decline in labor productivity due to illness among the labor force at large, as well as costs of hospitalization and medical treatment.

There is a dearth of detailed studies of what these costs of a flu pandemic might amount to at a global level. However one 1999 study of the United States calculated that, based on the disease patterns of post World War 2 pandemics, a new flu pandemic could lead to between 100000 and 200000 deaths in the US, together with 700000 or more hospitalizations, up to 40 million outpatient visits and 50 million additional illnesses.⁵ The present value of the economic losses associated with this level of death and sickness was estimated at between \$100 and \$200 billion for the US alone (in 2004 dollars). If we extrapolate from the US to all high income countries, there could be a present value loss of \$550 billion. The loss for the world would of course be significantly larger, because of the impact in the developing world. Note however that it would be inappropriate to make a simple extrapolation from studies

⁵ Martin I. Meltzer, Nancy J. Cox and Keiji Fukuda. (1999). *"The Economic Impact of Pandemic Influenza in the United States: Priorities for Intervention."* Emerging Infectious Diseases. Volume 5, No. 5. Sept.-Oct. <http://www.cdc.gov/ncidod/EID/vol5no5/meltzer.htm>

of rich countries to poor countries, where health systems are much less developed and mortality could be much higher. Note also that these estimates for the US arose from a projected mortality rate of less than 0.1 percent of the US population, much lower than the mortality rates in either the US or the world as a whole in the 1918-19 pandemic.

Policy issues

By any account, the benefits of preventing or even mitigating or delaying a global influenza pandemic are likely to be large indeed. The FAO, OIE and WHO have set out detailed recommendations on animal and human health policies and preparations that should be implemented at national and international levels to control avian influenza and the danger of a human influenza pandemic, including planning, training, surveillance, monitoring and diagnostic systems, public communications, establishment of stockpiles of medications and equipment, preparation of national health care systems and facilities, implementation of control measures (culling, vaccination, use of anti-virals, quarantines etc.), compensation and other incentives to complement control measures, relevant research etc.⁶

Many affected East Asian countries are still at the stage of preparing national animal and human health plans. Since in the present crisis animal and human health considerations are closely linked, the response to the influenza threat needs an integrated cross-sectoral approach, that brings together agriculture, animal health, human health, finance and other key agencies and experts, with strong support and leadership at the highest political level. Again, many East Asian countries still have a way to go in developing multi-sector planning and coordination with top political support.

There is clearly a priority on curbing avian flu "at source", in the agricultural sector, through implementation of strong animal and human health surveillance, disease control and mitigation measures, thereby reducing the probability of a far more costly human epidemic. In addition it is also important to strike a balance between short and long term measures. Avian flu is becoming endemic in parts of East Asia and will require a long effort to suppress. Meanwhile a human pandemic may still emerge from some quite different strain of flu virus. Other zoonoses and pathogens continue to emerge. Thus it makes sense to also undertake broader long term measures to strengthen the institutional,

⁶ FAO/OIE. *A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI)*. May 2005.
WHO. *Global Influenza Preparedness Plan*. 2005.
WHO/CDS/CSR/GIP/2005.5

regulatory and technical capacity of the animal health, human health and other relevant sectors. These will be valuable investments both in the short and long run.

Since a human influenza pandemic would rapidly spread all over the world, stopping or controlling avian flu is therefore a true global public good, which all countries have an interest in acquiring. Thus, while country level leadership and engagement is essential for success, it must be backed by global resources. Even though the benefits of containing a pandemic are overwhelming, individual governments may still be daunted by the social, political and economic costs of various policy measures, especially when these measures are in the nature of global public goods that benefit many more than just the people of that nation.