THE TREASURY
Kaitohutohu Kaupapa Rawa

Treasury Report: Influenza A (H1N1) Pandemic: Potential Economic Impact

Date:	3 July 2009	Report No:	T2009/1619

Action Sought

	Action Sought	Deadline
Minister of Finance (Hon Bill English)	**Note** that any economic impact from the current influenza pandemic is likely to be mild. **Refer** this report to the Prime Minister and the Minister of Health for their information. **Agree** that this report be released on the Treasury website.	Prior to Cabinet, Monday 6 July 2009

Contact for Telephone Discussion (if required)

Name	Position	Telephone		1st Contact
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Minister of Finance's Office Actions (if required)

Refer this report to the Prime Minister and to the Minister of Health for their information.

Enclosure: **Talking points (Appendix 2)**

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Executive Summary

On the basis of current information about infection rates and severity of illness, any economic impact from the current influenza pandemic is likely to be mild. We have looked at the latest assumptions about the virus causing the pandemic and compared them with the assumptions used to model the impact of a mild pandemic in a 2006 Treasury working paper.

Any impact in the year following the pandemic is likely to be substantially less than the 0.7% in real GDP modelled under a 'mild scenario' in the 2006 working paper. There are a number of considerations underlying this judgement.

- The impact of the pandemic influenza strain appears to be relatively mild – in terms of the infection rate, the severity of any illness, and resulting days off work.

- The mild nature of this virus means that most workplaces could be expected to make alternative arrangements to manage the effects of any absenteeism. These arrangements may include:

    - unaffected workers covering staff absences; and

    - firms making use of existing stock and shifting some production to later periods.

- So far, there has been little in the way of observable impacts on demand. For instance, public gatherings are not being restricted, and there has been no observable change in public behaviour. Looking forward, there is currently no reason to believe that this situation will change.

Given this, we do not consider that the Budget 2009 forecasts should be revised downward, or that the 'downside scenario' forecast is now more likely as a result of the pandemic. Any economic effect is likely to be so small that it will be masked by other counterbalancing effects in the economy, for example, the GDP figure for the March 2009 quarter was slightly better than expected (-1.0% versus a forecast -1.1%).

We are aware of some public interest in information about the potential economic impact of the current influenza pandemic. You may wish to refer this report to the Prime Minister for his possible use in an upcoming media conference, and to the Minister of Health. You may also wish to consider proactively releasing this report via the Treasury website, following any public reference to its contents.

Communications

Possible talking points on this subject are attached – see Appendix 2.

Recommended Action

We recommend that you:

a **note** that current information about infection rates and severity of illness suggests that any economic impact from the current influenza pandemic is likely to be mild;

b **refer** this report to the Prime Minister and the Minister of Health for their information; and

Yes / No.

c **agree** that this report be released on the Treasury website.

Agree / Disagree.

Mark Sowden
Manager, Macro Policy
for Secretary to the Treasury

Hon Bill English
Minister of Finance

Treasury Report: Influenza A (H1N1) Pandemic: Potential Economic Impact

Purpose of Report

1. This report responds to your request for an estimate of the potential impact of the influenza A (H1N1) 09 pandemic on the New Zealand economy.

2. It also provides some proposed speaking points that you may wish to refer to the Prime Minister for his possible use in an upcoming media conference.

Context

3. A novel strain of influenza A (H1N1), commonly known as "swine flu" (or more correctly designated as A (H1N1) 09), was initially identified in Mexico in April 2009. Human cases of this non-seasonal influenza have since been confirmed in New Zealand and in many other countries around the world. In response to the global spread of the virus, the World Health Organisation has declared an influenza pandemic – the first since 1968. So far, the novel strain of influenza A (H1N1) virus appears to be producing only mild to moderate symptoms in most people who become infected.

The Treasury has previously modelled the economic impact of a pandemic

4. A 2006 Treasury working paper used planning assumptions developed by the Ministry of Health to model the potential economic impact of an influenza pandemic – for the purpose of informing cross-government pandemic planning. That work estimated the reduction in real GDP in the year following a pandemic to be in the range of 0.7% to 2.1% under a 'mild' scenario (as noted in T2009/1070, 29 April 2009).

5. This report compares the disease assumptions underlying the Treasury working paper, with those in a recent report commissioned by the Ministry of Health (Wilson and Baker, 2009). The work by Wilson and Baker uses current data about the novel influenza A (H1N1) 09 strain to develop a range of plausible assumptions about the health impacts of the first wave of the pandemic. Our aim here is to assess whether the potential economic impact of the current influenza pandemic might be of similar magnitude to the 'mild scenario' modelled in the 2006 Treasury working paper.

Estimating the economic impact of the current influenza pandemic

6. There is some uncertainty about how the current pandemic will unfold, and what the economic effects might be at a time when many firms and households are already under some economic stress. The following sections compare the current disease assumptions with those used to inform the 'mild scenario' in the Treasury paper in 2006. There are reasons to conclude that any economic impact of the current influenza pandemic is likely to be substantially lower than that 'mild scenario'.

Supply-side effects are likely to be lower than the previously modelled 'mild scenario'

7. A mild pandemic shock was modelled in the 2006 Treasury working paper as a reduction in labour supply due to sickness and death, with no additional absenteeism due to school closures. In this 'mild scenario', the supply-side effect was estimated to contribute to a 0.7% reduction in real GDP in the year following a pandemic.

8. We consider there are reasons why the impact of the current pandemic on the labour supply, and therefore the impact on GDP, is likely to be much lower than that modelled under the 'mild scenario'.

    - The 'most plausible' disease assumptions used by Wilson and Baker suggest that the impact of the pandemic influenza strain will be relatively mild – in terms of the infection rate, severity of illness, and resulting days off work. Appendix 1 details these assumptions.

    - The mild nature of the pandemic influenza strain means that most workplaces can be expected to make alternative arrangements to manage the effects of any absenteeism. These arrangements may include unaffected workers covering absences, or firms making use of existing stock and shifting some production to later periods.

Demand-side effects are not apparent at this stage

9. On the demand-side of the economy, a pandemic shock in the 'mild scenario' was modelled as occurring through: health restrictions on public gatherings; behavioural changes as people confine themselves to their homes (e.g. due to fear of illness), and a decline in tourism activity. These demand effects were modelled as a decline in activity in certain industries, including hospitality, retail, and transport.

10. Under the 'mild scenario', the demand-side effects were estimated to contribute a 1.4% reduction in real GDP in the year following a pandemic. Available information suggests the demand-side effects of the current influenza pandemic are likely to be substantially lower, and may be close to negligible. Reasons for reaching this conclusion include:

    - Public Health responses are not restricting public health gatherings;

    - There have been no observable changes in public behaviour, and looking forward, there is currently no reason to believe that this situation will change; and

    - There has been little observable change decline in tourism activity beyond existing trends. One caveat is that recent visitor arrivals show a sudden and sharp decrease from Japan and the People's Republic of China, relative to the equivalent period last year. These reductions could be the result of the pandemic. We note those markets form a relatively small share of all arrivals.

Overall, the economic impact of the current influenza pandemic is likely to be much less than the lower bound of 0.7% of GDP modelled in 2006 Treasury paper

11. The 'mild scenario' estimated a reduction of real GDP of 0.7 – 2.1% in the year following the pandemic, as noted above. On the basis of current information about infection rates and severity of illness, we consider that the impact of the pandemic is likely to be much lower than the lower bound of that range. It is possible that it will be difficult to separate out any economic effects of the pandemic from the underlying trend in GDP.

12. Table 1 summarises the ways in which the 'mild scenario' modelled the impact of a pandemic in the 2006 Treasury working paper, and how these impacts could be considered in light of information about the current pandemic.

Table 1: Potential impact on GDP in the year following the influenza pandemic

Possible transmission channels	Impact on real GDP in year 1 – 'Mild scenario' (Treasury, 2006)	Comment – in light of available information
Supply-side impact Via a fall in labour supply due to: • sickness; • deaths; and • absenteeism	0.7%	*Labour supply effects are likely to be much lower than in the modelled 'mild scenario', since the mild nature of most cases means:* • absenteeism will probably be lower than that modelled; and • more resilience in work places to cover the effect of any staff absences.
Demand-side impact Via a drop in demand due to: • public health restrictions on public gatherings; • behavioural changes; and • a decline in tourism	1.4%	*No demand-side impacts are apparent:* • Public Health responses are not restricting public health gatherings; • No observable change in public behaviours; and • Little observable change in tourism activity beyond existing trends.
Total impact (as modelled in Treasury, 2006)	0.7% – 2.1%	*Any impact on GDP is likely to be far below the low point of this range (i.e. substantially less than 0.7% of GDP).* • It may be difficult to separate out any economic effects of the pandemic from the underlying trend in GDP

Placing this conclusion in context

13. In our view, any economic impact in the year following the current pandemic is likely to be substantially less than the 0.7% in real GDP modelled under the 'mild scenario' of the 2006 Treasury working paper. As such, we do not consider that the Budget 2009 forecasts should be revised downward, or that the 'downside scenario' forecast is now more likely as a result of the pandemic. There are a number of considerations underlying this judgement, for example:

    - Any economic effect is likely to be so small that it will be masked by other counterbalancing effects in the economy (for example, the 26 June release of GDP for the March 2009 quarter was slightly better than forecast (-1.0% versus a forecast -1.1%); there are also signs of stronger-than-expected growth in Australia); and

    - As noted above, firms often have an ability to make alternative arrangements to manage any temporary labour disruption, for instance:

        - Unaffected workers may cover absences;

        - Firms make use of existing stocks and shift some production to later periods; and

        - Unaffected firms may respond to any demand unmet by affected firms.

Risks

14. The above conclusions are based on currently available information. Elements of risk include:

    - Pandemic-related deaths will almost certainly occur, and if these are highly publicised, any behavioural responses within the community could lead to some demand-side impacts; and

    - Future waves of the influenza virus could be different in terms of severity, transmissibility and level of antiviral resistance. It remains uncertain as to whether, or when, this might occur, or how effective any vaccination against such strains might be.

Other Relevant Information

Other views on the potential economic impact

15. At least two commercial banks have recently commented on the potential economic impact of current influenza pandemic.

    - Westpac (18 June 2009) noted that it is very difficult to gauge the impact on GDP, but suggested that, "as a ballpark range, a 1% to 2% drop in GDP over the first year looks reasonable". That judgement was partly based on assumptions in the 2006 Treasury working paper, rather than the information cited in this report.

    - ANZ and the National Bank (22 June 2009) declined to quantify the potential impact on the economy, citing a high level of uncertainty, and the difficulty in distinguishing any impact from the challenges already present in the economy.

Recent overseas visitor arrivals

16. Figures for overseas visitor arrivals for the four weeks to 12 June 2009 show a sudden and sharp decrease, relative to the equivalent period last year, from Japan (-61%) and the People's Republic of China (-52%). These reductions could be the result of the influenza pandemic. We note these markets form a relatively small share of all international arrivals.

17. In contrast, visitor arrivals from some other countries were slightly higher than the equivalent period last year (e.g. Australia +12%). Total visitor arrivals were down by 5% on the same period last year – although it is difficult to separate out any effects of the pandemic from the underlying effects of the economic recession.

Appendix 1: Comparison of modelling assumptions

- Table 2 compares the assumptions about influenza A (H1N1) in Wilson and Baker (2009) with the assumptions used in the 'mild scenario' of the Treasury working paper (2006):

  - Although Wilson and Baker suggest an infection rate of 48.7%, one-third of the infected population are assumed to be 'asymptomatic' cases – i.e. displaying no symptoms. This suggests that around 32% of the population may experience symptomatic illness – similar to the assumption of 30% in the Treasury paper.

  - Wilson and Baker use a much lower case fatality rate of 0.0008% (the proportion of deaths among diagnosed cases) than the 0.25% used in the Treasury paper. The modelling in that paper is relatively insensitive to the downward revision in the case fatality rate.

  - Wilson and Baker assume an average number of four days off work for those with mild to moderate illness. The 'mild scenario' in the Treasury paper assumed an average of five days off work for those infected.

Table 2: Comparison of modelling assumptions

	Treasury paper (2006) 'Mild scenario'	Wilson and Baker (2009) 'Most plausible' scenario
Infection rate	30.00 %	48.7 %
Asymptomatic case rate	no assumption	34.0 %
Case fatality rate	0.25 %	0.0008 %
Average number of days off work	• 5.0 sick days	• 4.1 sick days for mild to moderate illness; • 7.0 sick days for severe illness

Appendix 2: Influenza Pandemic: Potential Economic Impact – Talking points

Any economic impact from the current pandemic is likely to be very mild

- The Treasury has looked at the latest assumptions about the virus and compared them with those used in a 2006 working paper on the possible impact of a mild pandemic.

- On the basis of current information about infection rates and severity, the Treasury has concluded that any economic impact in the year following the pandemic is likely to be substantially less than the 0.7% in real GDP modelled under a 'mild scenario' in its 2006 working paper.

There are a number of reasons why any economic impact can be expected to be minor

- The impact of the pandemic influenza strain appears to be relatively mild – in terms of the infection rate, the severity of any illness, and resulting days off work.

- The mild nature of this virus means that most workplaces could be expected to make alternative arrangements to manage the effects of any absenteeism, and these may include:

    - unaffected workers covering staff absences; and

    - firms making use of existing stock and shifting some production to later periods.

- So far, there has been little in the way of observable impacts on demand:

    - public gatherings are not restricted; and

    - there has been no observable change in public behaviour, and looking forward, there is currently no reason to believe that this situation will change.

So there is no need to adjust the GDP forecasts from Budget 2009

- Any economic effect is likely to be so small that it will be masked by other counterbalancing effects in the economy, for example, the GDP figure for the March 2009 quarter was slightly better than expected (-1.0% versus a forecast -1.1%).