

Pandemic: A short guide for investors

The economic cost of the H1N1 pandemic is marginal for the time being (0.002% of global GDP). Its potential scale is unpredictable and it would be wrong to take history (the Spanish flu) as a reference. The official scenario, for which the US authorities have prepared, would deprive the economy of 0.9% of GDP on an annualised basis.

The experience of the SARS in Hong Kong (-2.6% of GDP) and Canada (-0.6% of GDP) gives an idea of the chronological sequence of economic consequences of a pandemic:

- *Sharp rise in absenteeism with a decline in trade which affects retail sales and the tourism sector in particular;*
- *Inflation ahead of the disease's peak, as the population stocks food reserves, then deflation due to the decline in trade;*
- *Widening of fiscal deficits due to healthcare expenditure.*
- *The shortfall in activity is rapidly overcome (in two quarters).*

The financial markets' likely reaction to a pandemic is a flight to quality:

- *Rise in gold prices;*
- *Underperformance of stock markets in the countries most affected by the virus;*
- *Global outperformance of the pharmaceutical and healthcare sectors;*
- *Widening of sovereign spreads for the countries most severely affected.*
- *These developments are temporary and limited to the duration of the pandemic.*

ECONOMIC RESEARCH

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Lastly, we may note that emerging markets are more exposed than the others to the financial consequences of a pandemic, due to limited hospital capacity, concentration of the pharmaceutical industry in the developed economies, and above all, absenteeism in world financial markets could reduce capital flows, which would be detrimental for emerging-country credit and currencies.

1- The pandemic is declared

The World Health Organization (WHO) has raised the risk of pandemic to its maximum level, circulating information that in less than six weeks the new flu virus A (H1N1) has spread as widely as previous flu viruses spread in six months.

The number of people contaminated in the world has risen from 1,000 at the start of May to 127,000 by mid-July. The death rate due to the virus has decreased (from 2.5% to 0.5%). The number of deaths has therefore not increased in proportion to the number of infections (26 in May 2009, 684 according to the latest WHO report on 16 July, **Chart 1**).

The continent most affected so far is the Americas, with 211 deaths in the United States, 137 in Argentina and 124 in Mexico. In Europe, only the United Kingdom has a significant number of infections and deaths. According to the WHO, one out of every two cases is related to trips to the Americas. Asia seems to be largely spared by the virus, except for Thailand (**Table 1**).

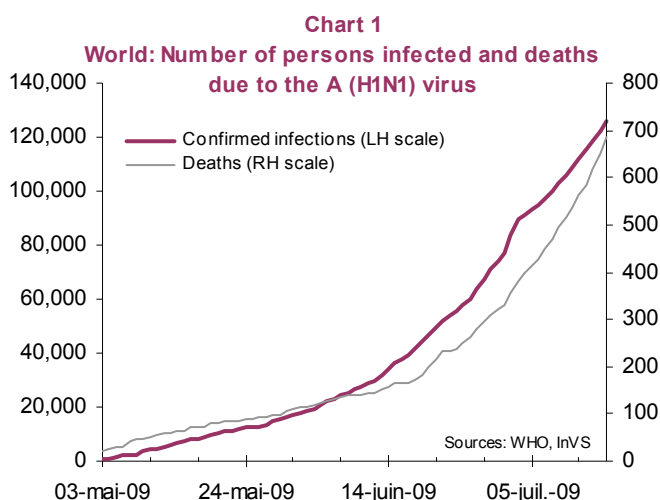


Table 1: A (H1N1) virus - Confirmed infections and deaths

Region/Country	Confirmed infections	Deaths	Per capita GDP (PPP, USD)
Africa	157	0	
Americas	78,373	584	
Canada	9,855	39	38,840
United States	37,246	211	46,950
Mexico	12,645	124	14,080
Argentina	3,056	137	14,410
Brazil	1,027	4	10,320
Chile	10,491	33	14,493
Peru	2,082	6	8,460
Asia	16,285	30	
Japan	3,124	0	34,050
China	2,751	2	6,140
India	229	0	2,930
Philippines	2,668	3	3,430
Singapore	1,217	0	40,320
Thailand	4,057	24	8,240
Europe	14,545	19	
Germany	763	0	34,610
Spain	1,099	2	31,300
France	442	0	34,470
Italy	224	0	30,930
United Kingdom	9,739	17	35,787
Oceania	12,534	30	
Australia	10,389	21	37,840
New Zealand	1,984	9	26,800
Total	126,168	684	11,080

Source: WHO Report of 16 July 2009

The virus is spreading exponentially in every region of the world. Central and South America seem to be the most exposed (**Chart 2**).

Such comparisons should probably be regarded cautiously. Statistics on the pandemic depend on the quality of healthcare and screening systems. Under-estimation would hardly be surprising in those countries where social protection is weak.

Chart 2:

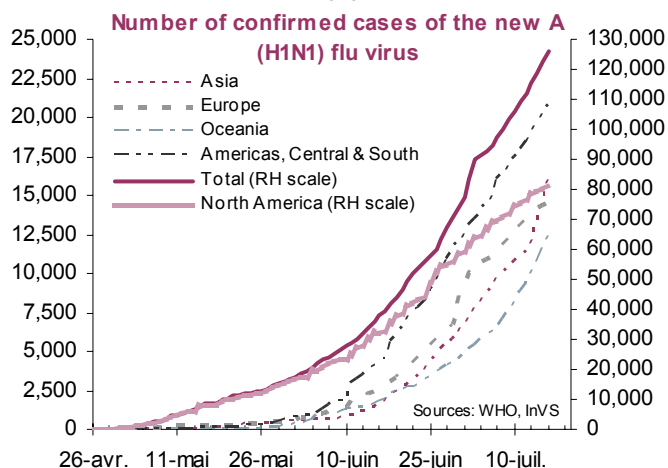
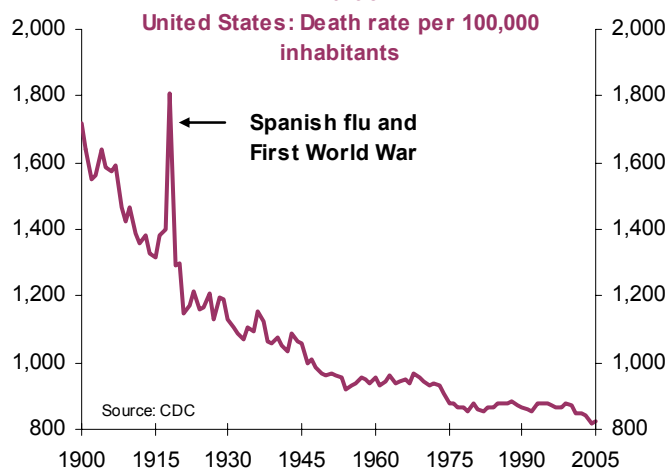


Chart 3



2- The economic consequences of a pandemic

2.1- No economics fiction!

2.2- The SARS experience

By comparing per capita GDP with the number of people contaminated and deceased, the direct present cost of the pandemic for the global economy is marginal, even assuming that all the people infected are placed in quarantine and are therefore unproductive.¹

The spread of the virus poses a less trivial question. However, it is worth specifying, like the IMF, that such estimates are purely speculative.² The scale of a pandemic is unpredictable.

While one-third of Europe's population perished of the Black Plague in the 14th century, and the Spanish flu pandemic of 1918 took the lives of more than 40 million people (2% of the world's population), the WHO counted only 774 deaths due to SARS.

It would also be wrong to take history as a reference. A pandemic on the scale of the Spanish flu (**Chart 3**) would have very different economic consequences today, not necessarily more harmful (as might be thought) due to the intensity and speed of communications, since public health systems have never been so efficient.

Following these clarifications, we can consider the recent SARS experience. The three countries most affected by the virus were China, Hong Kong and Canada (**Table 2**).

¹ $(126,168+684) * 11,080 / 68,737 * 10^9 = 0.002\%$ of global GDP on a PPP basis. Note, moreover, that vaccine production and public expenditure involved in prevention of the pandemic are for the time being having a positive effect on growth.

² "The global economic and financial impact of an avian flu pandemic and the role of the IMF", February 2006.

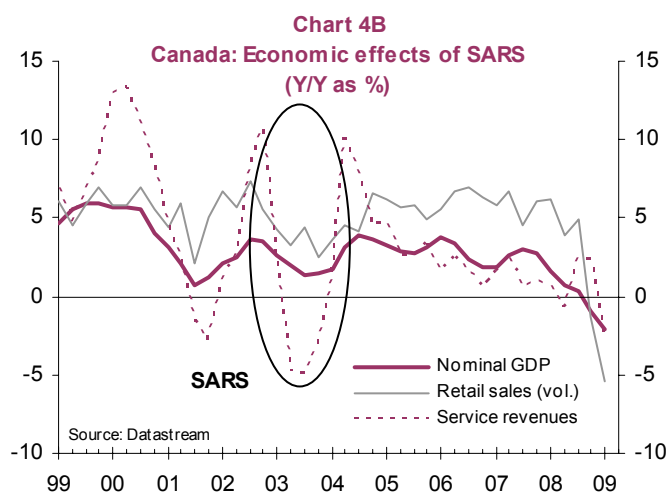
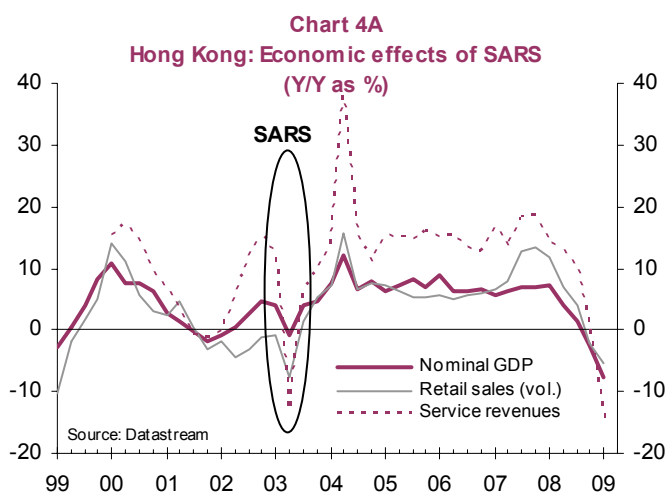
Table 2: SARS – Infections, deaths and effects on GDP

Region/Country	Confirmed cases	Deaths	Estimated effect on GDP (as %)
North America	278	43	
Canada	251	43	-0.6
United States	27	0	-0.07
Asia	7,775	729	
China	5,327	349	-1.05
Hong Kong	1,755	299	-2.63
Taiwan	346	37	-0.49
Singapore	238	33	-0.47
Philippines	14	2	-0.1
Vietnam	63	5	n.d.
Thailand	9	2	-0.15
Mongolia	9	0	n.d.
Malaysia	5	2	-0.15
South Korea	3	0	-0.1
India	3	0	-0.04
Indonesia	2	0	-0.08
Macao	1	0	n.d.
Europe	33	1	
Germany	9	0	n.d.
Spain	1	0	n.d.
France	7	1	n.d.
Italy	4	0	n.d.
United Kingdom	4	0	n.d.
Sweden	5	0	n.d.
Switzerland	1	0	n.d.
Ireland	1	0	n.d.
Romania	1	0	n.d.
Oceania	7	0	
Australia	6	0	
New Zealand	1	0	
Total	8,096	774	

Sources: WHO, InVS

Official estimates suggest a very different recessionary effect of SARS in these three countries (-2.6% of GDP in Hong Kong, -1.05% in China, -0.6% in Canada), explained by differences in population density, proportion of rural dwellers, etc.

Apart from that, there are recurring features (**Charts 4A and B**):



- Through record rates of absenteeism, a pandemic causes a decline in trade which especially affects retail trade and the tourism sector (balance of services).
- The shortfall in activity is rapidly overcome (in two quarters).
- The pandemic produces inflation ahead of the disease's peak (3% cumulative in Canada, **Chart 5**), as the population stocks food reserves to be self-sufficient. At present, some US counties are suggesting that their populations should set aside three weeks of stocks. The inflationary effect is reversed rapidly due to the decline in trade.
- Lastly, the pandemic increases fiscal deficits through rising healthcare expenditure. In the case of the SARS, spread over a period of only six months, the increase in spending only slightly exceeded the shortfall in growth (**Charts 6A and B**). Note that, in its 2006 report, the IMF estimated that its resources could be deployed in such cases.

Chart 5
Consumer price indices, seasonally adjusted
(Q/Q as %)

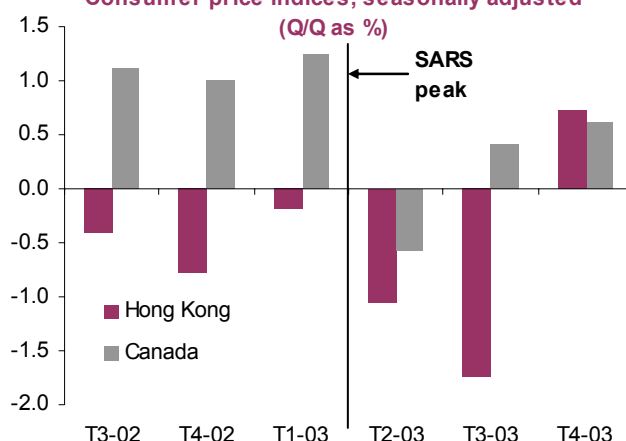


Chart 6A
Hong Kong: Public spending and GDP
(Y/Y as %)

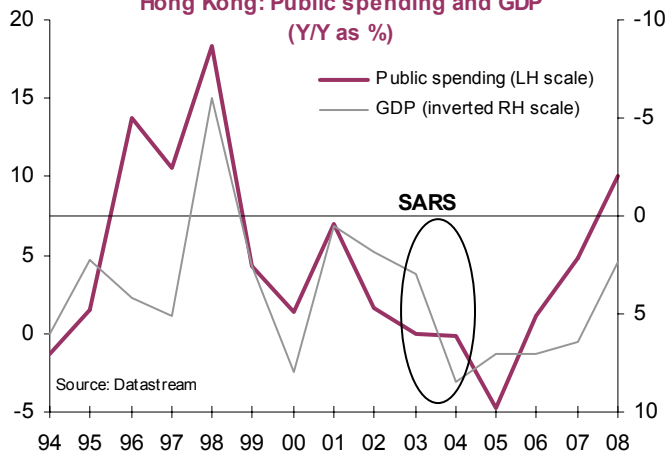
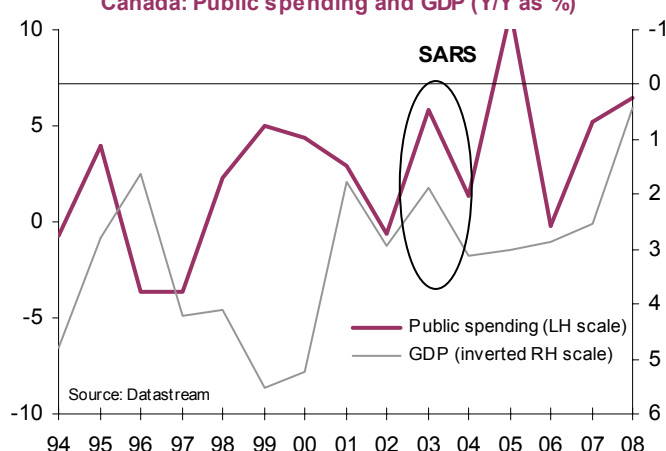


Chart 6B
Canada: Public spending and GDP (Y/Y as %)



Without over-inventing, we can look at the official pandemic scenarios. Numerous government authorities have thought about this, out of the principle of precaution, to protect public health and ensure the continuity of the economy.

The US scenario, for example, foresees, over twelve weeks, the gradual shutdown (after 2 to 7 days) of public and private services (schools, post offices, transport services, etc.) until the rate of absenteeism reaches 49% at six weeks, then falling back to 35% versus 2.2% in normal times.³

Such events would weaken the US economy by an annualised 0.9% of GDP.⁴

In a similar scenario, the impact on European growth would be of the same order.

In the best of cases, this decline in production would be temporary (two quarters in the case of the SARS). It could be permanent (absolute loss of potential GDP) if the virus were to kill those contaminated.⁵ The pandemic would then develop a deflationary trend, once the short-term inflationary effect had subsided. Public finances would post widening deficits due to healthcare expenditure, but also possible support for the economy (credits, contracts, etc.).

3- Financial markets' reaction to a pandemic

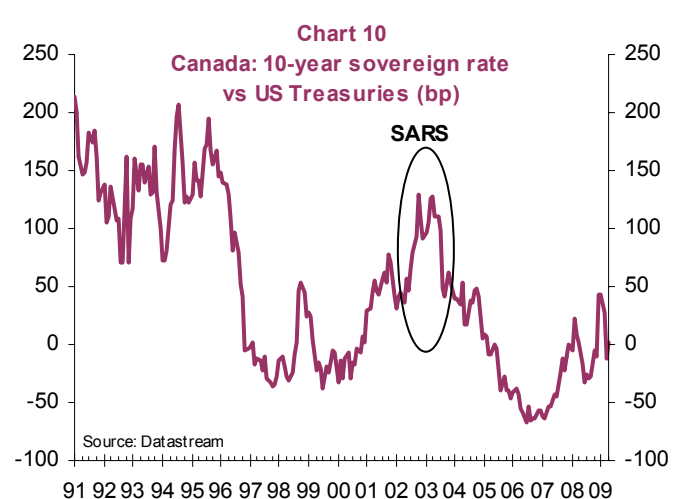
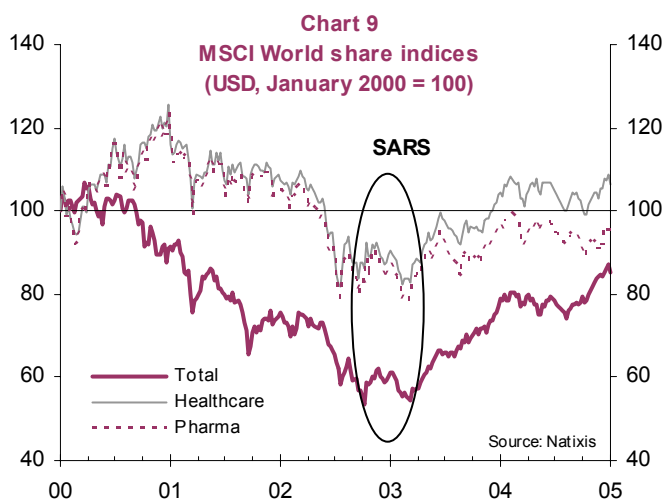
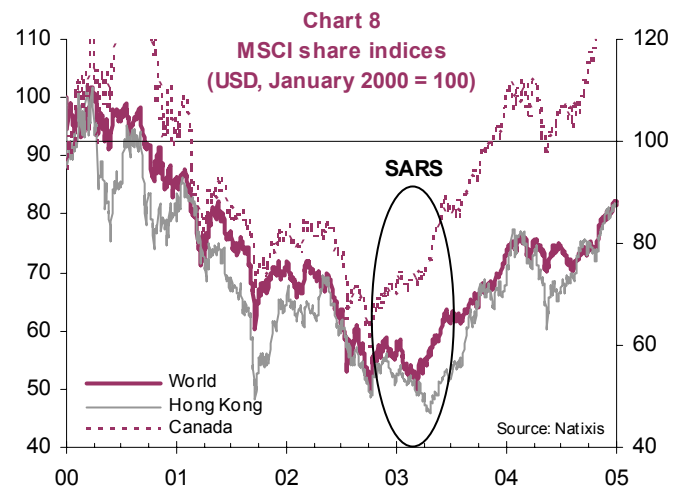
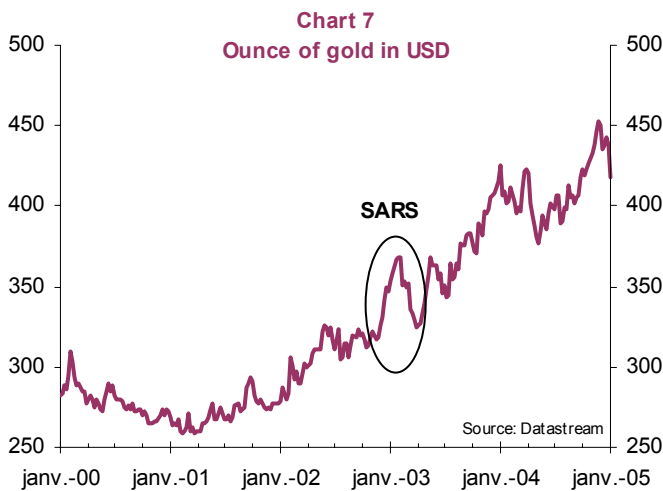
The likely reaction of financial markets to a pandemic is a flight to quality:

- Over the period from December 2002 to April 2003, the SARS caused a temporary rise in gold prices (by 15%, **Chart 7**).
- In equity markets, the countries affected by the SARS underperformed (11% underperformance for Hong Kong relative to the MSCI World index), although followed by a fairly quick recovery (6 months, **Chart 8**).
- Worldwide, there was slight outperformance by pharmaceutical shares (1% better than the MSCI Total) and healthcare shares (by 2%, **Chart 9**). A lasting global pandemic can be expected to increase these gaps.
- Lastly, the sovereign spreads of countries affected by the virus widened temporarily (100 bp in the case of Canada against US Treasuries, **Chart 10**) due to the immediate inflationary effect of the pandemic. These spreads then narrowed quickly again as the shortfall in nominal income (recession, deflationary trend) offset the increase in budget deficits.

³ "The FBIIC/FSSCC pandemic flu exercise of 2007 after action report".

⁴ The rise in the rate of absenteeism to 42% on average (49% and then 35%) over one quarter, versus 2.2% in normal times, implies a 28% fall in the contribution of the labour factor to US production (70% weight). Assuming that the contribution of capital (30%) falls proportionally, because people are needed to operate machines, the potential production shortfall (2.5%-2.7% according to the Fed) entailed by such a pandemic is 0.7 percentage point of GDP due to the labour factor and 0.2 percentage point of GDP due to capital.

⁵ As a reminder, the death rate for the SARS (9.6%) was far greater than the current rate for the H1N1 virus (0.5%).



4- Emerging markets are most exposed to the financial consequences of a pandemic

Lastly, it should be noted that emerging markets are likely to be more affected than others by a global pandemic.⁶

Not only is their healthcare preparation not as intensive, but their hospital capacity is modest (**Table 3**).

Moreover, the global pharmaceutical industry is concentrated in developed economies. It is not impossible that their governments could take them over in the event of a serious crisis, limiting third countries' access to vaccination.

But in particular, apart from the flight to quality, absenteeism in world financial markets could reduce capital flows. Emerging markets would then be exposed to significant credit and currency risk.

⁶ An idea that can be found in the note by Raymond Van der Putten on 26 June 2009, "Influenza A: a state of pandemic is declared". BNP Paribas Research.

Table 3: Health indicators

Region/Country	Hospital beds per 10,000 inhabitants (2000-2006)	Per capita healthcare expenditure in 2006 (PPP USD)
Africa	10	111
Americas	24	2,788
Canada	34	3,672
United States	32	6,714
Mexico	10	756
Argentina	41	1,665
Brazil	26	765
Chile	23	697
Peru	9	300
Southeast Asia	9	85
Japan	141	2,514
China	22	342
India	7	109
Philippines	13	223
Singapore	32	1,228
Thailand	22	346
Europe	63	1,719
Germany	83	3,328
Spain	34	2,388
France	73	3,554
Italy	40	2,623
United Kingdom	39	2,784
Oceania	33	461
Australia	40	3,122
New Zealand	60	2,447
Total	25	790

Source: WHO

5- Conclusion

The number of people in the world contaminated by the A (H1N1) virus has been multiplied by 120 in less than six weeks. The World Health Organization has declared a state of pandemic.

The American continent is the most affected (United States, Mexico and Argentina). Asia remains spared. In Europe, only the United Kingdom has a significant number of infections and deaths. The death rate for the virus (0.5%) has declined, however, and is 20 times lower than for the SARS (9.6%).

The economic cost of the H1N1 pandemic is marginal for the time being (0.002% of global GDP).

Its potential scale is unpredictable and it would be wrong to take history (the Spanish flu) as a reference. The official scenario, for which the US authorities have prepared, foresees a rise in the rate of absenteeism to 49% over twelve weeks of pandemic. This would weaken the US economy by an annualised 0.9% of GDP. In a similar scenario, the impact on European growth would be of the same order.

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