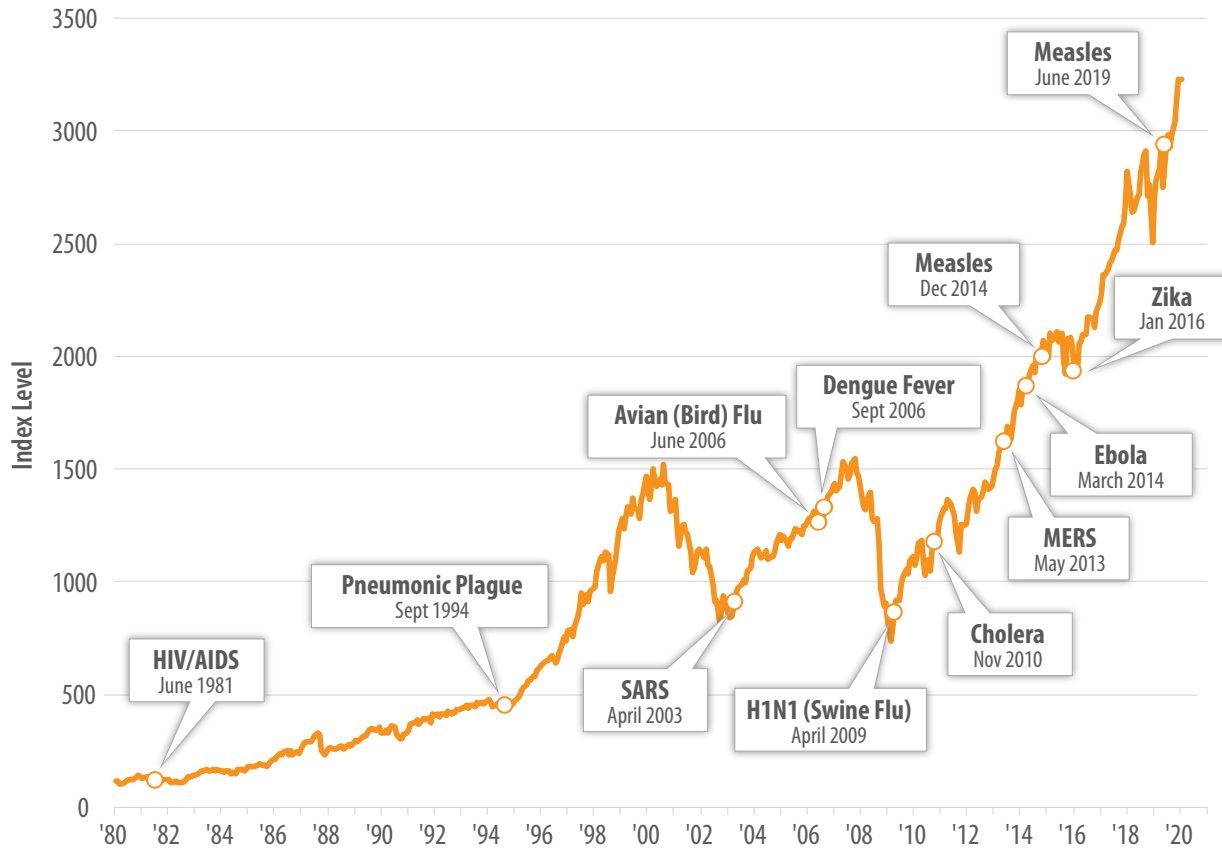


Epidemics and Stock Market Performance

Since 1980

There are many factors that can impact stock market returns, but one concern of investors today is how the stock market will be impacted by a major epidemic or outbreak. Below we look at the historical performance of the S&P 500 Index during several epidemics over the past 40 years. We believe looking at the market's overall resiliency through several major epidemics can give us perspective on the benefits of investing for the long-term.

S&P 500 Index Price Performance



Epidemic	Date	Largest Drawdown from Peak in first 6 Mos.	S&P 500 6-Month % Change	S&P 500 12-Month % Change
HIV/AIDS	June 1981	-15.7%	-6.6%	-16.5%
Pneumonic Plague	Sept 1994	-6.0%	8.2%	26.3%
SARS	April 2003	-4.6%	14.6%	20.8%
Avian (Bird) Flu	June 2006	-3.6%	11.7%	18.4%
Dengue Fever	Sept 2006	-5.9%	6.4%	14.3%
H1N1 (Swine Flu)	April 2009	-7.1%	18.7%	36.0%
Cholera	Nov 2010	-6.4%	13.9%	5.6%
MERS	May 2013	-4.8%	10.7%	18.0%
Ebola	March 2014	-4.0%	5.3%	10.4%
Measles	Dec 2014	-3.6%	0.2%	-0.7%
Zika	Jan 2016	-5.6%	12.0%	17.5%
Measles	June 2019	-6.1%	9.8%	N/A*
Average		-6.1%	8.8%	13.6%

Observations

- **6-month** change of the S&P 500 Index was positive in 11 of the 12 cases, with an average price return of 8.8%.
- **12-month** change of the S&P 500 Index was positive in 9 of the 11 cases*, with an average price return of 13.6%.

Source: Bloomberg, as of 2/24/20. Month end numbers were used for the table on the right. *12-month data is not available for the June 2019 measles. **Past performance is no guarantee of future results.**

The S&P 500 Index is an unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance. Investors cannot invest directly in an index. Index returns do not reflect any fees, expenses, or sales charges. Returns are based on price only and do not include dividends. This chart is for illustrative purposes only and not indicative of any actual investment. These returns were the result of certain market factors and events which may not be repeated in the future.

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