November, 1 2021

Spence Strategic Consulting Group Inc.

ECONOMIC NOTES

RELATIVE PRICE CHANGE OR INFLATION?

Prices are elevated as economies emerge from the Covid-19 trough.

Concern about inflation is rising and central banks are struggling to understand a high level of price volatility.

Economic equilibrium has been disturbed: resource churning is intense & resource allocation efficiency requires clear price signals.

The answer to whether relative price changes are a harbinger of future inflation depends on whether there has been a loss in overall supply potential.

PRICE VOLATILITY AND RESOURCE DISTRIBUTION

The efficient distribution of economic resources depends on the efficiency of the price system, which signals where and how to allocate resources. Relative price changes have responded to, and continue to respond to the echo of, the Covid-19 shock to both demand and supply.

The CPI is a basket of many different prices, and very large changes in just a few prices with even small weights can show-up as a large increase in the CPI. For inflation to force a central bank into constraining action, a few relative price changes would have to broaden to all prices and threaten to accelerate. So far this is not the case. Relative price changes must be left to do their job, and the price changes required to rebuild supply efficiency must be allowed to flow-through even if it takes the measured CPI higher for a while.

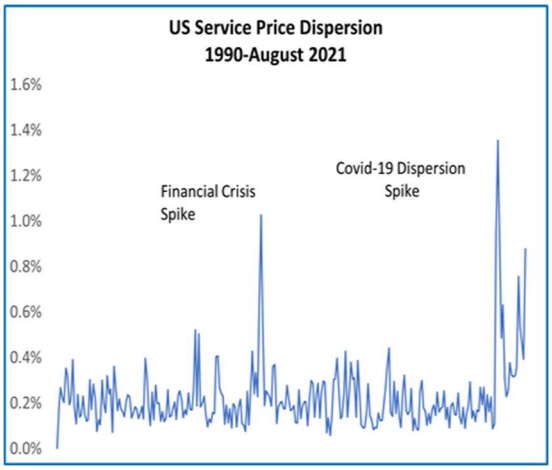
Falling prices signal either falling demand or over-supply and potentially falling profitability. Rising prices signal either rising demand or under-supply and potentially higher profitability. The dispersion in prices across firms and sectors is the means by which resources are efficiently reallocated in times of intense change.

Research on the response of German producers to changes in demand, monitored through the summer of 2020, showed that firms most negatively affected by a decline in demand were more likely to reduce prices, and those that were positively affected were more likely to raise their prices. Interestingly, the same research showed that a negative supply response was more likely to generate upward pressure on prices.

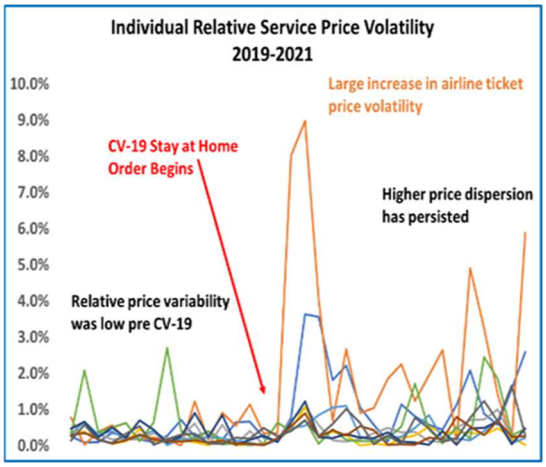
Significant damage was done to the smooth production and distribution of both goods and services within in domestic economies and between all economies. This damage needs to be repaired, and so we should expect to see some very large changes in individual prices of the most affected sectors. And indeed, this is what we observe.

andrew@spencestrategic.com +1-647-987-5198

Using US CPI data, I have calculated a price dispersion variable to identify any unusual price activity through the Covid-19 lockdown-induced downturn. This price dispersion variable measures how much spread we see between the prices we are most interested in ***relative*** to the CPI as a whole as shown below.



The greater the value, the more widely prices are moving relative to each other and the overall CPI and relative to time. A spike suggests that all prices are moving more than usual, relative to each other, both up and down. As the chart below shows, there has been a significant and sustained increase in relative service price dispersion, with some prices moving over a very large range.



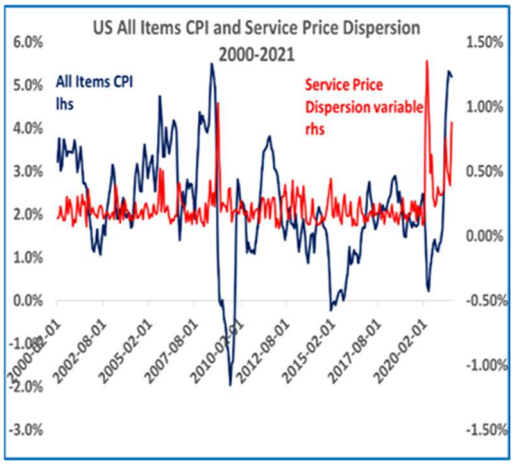
For example, airline ticket prices reflect the scale of the disruption to that industry, and similar volatility can be seen in the prices of social consumption services.

We want to know if there is greater than usual price change dispersion as it hints that there is an underlying churn in underlying resource allocation. Any firm or sector can collapse on any given day, but it takes time to recover resources and reallocate them.

andrew@spencestrategic.com +1-647-987-5198

We can see from the price dispersion measure that US service prices respond quite powerfully to large economic shocks. Clearly the Covid-19 shock was bigger than the disturbance rendered by the global financial crisis, eliciting much more relative price change and has lasted longer. It would seem that repairing the economy is taking longer to achieve.

Is the shock permanent or temporary? If the demand-supply mismatch is temporary. then it will likely have a transitory affect on overall prices, but if there has been a permanent negative supply shock and demand is left to run at a permanently higher level, then the relative price shock will become a general price shock and we will get higher inflation.



The chart left shows the persistence in the price dispersion variable and all items CPI, and a clear positive correlation between the two series is clearly seen. The fact that we see a spike higher in relative prices leading CPI higher should give us comfort that this is a large relative price event and not a general price event. On other words, this is not inflation that needs to be constrained, and relative prices must be left to do their job of hastening efficient economic repair. And central banks are doing just that: letting it run-through.

To restore supply potential in the social consumption sector, wages need to move higher to attract labour, and so prices will have to rise for some products and services. After a long period of sub-optimal demand, there is unlikely to be any profit cushion to absorb higher wages. And, many industries (cruise lines, airlines, for example) took on bridging debt to get through the crisis that they must now service, so ***one-time*** increases in prices should be expected.

Only the passage of time will reveal whether there has been a permanent loss of supply potential at a time when demand has been sustained by large fiscal transfers. If this proves to be the case, then strap yourself in as central banks will have to put the

andrew@spencestrategic.com +1-647-987-5198

government debt ratios and the need to keep debt financing costs down, even as the central banks are willing to act against inflation, they may not be as able to as we assume.

Technical Box – The Math and Intuition of the Price Dispersion Variable

The measure of price dispersion is given by sigma **σ** below, and is calculated as shown.

$$\delta = \left[\sum {}^{xit}/_{Xt} \left(\log \Delta xit - \log \Delta Xt\right) \text{^}2\right] \text{^}0.5$$

where x_{it} is a given sub-price index and X_t is the total price index.

This measure the degree to which prices are moving relative to one another. If the measure was close to zero, then it would indicate that all prices are changing at the same rate. Alternatively, if the measure is moving above zero, it would indicate that price changes were beginning to move out of a narrow range, suggesting an increase in the magnitude of price changes relative to one another and relative to the change in prices as a whole.

In and of itself this would not necessarily signal a change in the average rate of inflation, but instead signal that some prices have been disturbed, likely responding to underlying changes in demand, or supply, or both.

There is some evidence that an elevated level of σ is ***correlated*** with a disturbance to the prevailing average rate of inflation, which was clearly illustrated during and after the CV-19 economic dislocation. But is unlikely that this measure can be said to ***cause*** a move higher or lower in inflation. However, if a sustained and higher value of **σ** through time can be traced to a negative supply shock, rather than a demand shock, then the overall trend in the general level of prices and inflation needs to be carefully monitored.

inflation genie back in the bottle. Given high

andrew@spencestrategic.com +1-647-987-5198

.

DISCLAIMER

Published by Spence Strategic Consulting Group Inc, 22 St. Clair E, Suite 1502, Toronto, Ontario. M4T 2S5.

andrew@spencestrategic.com +1-647-987-5198