

Discussion

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It is an interesting time to be discussing equity prices, as the graphs below show. They illustrate the price-to-book-value (P/BV) ratios for the TSE 300 index, as well as for other Canadian, U.S., and world stock market indices.¹ In Figure 1, the curve for the TSE 300 goes nearly vertical around 1996, although the valuation ratios for all equity markets are well into record territory (see Figure 2). I would like to present my comments on Giammarino's paper with these figures as a backdrop, because both his paper and my comments lead up to the theme illustrated in the graphs. I will return to them later.

But first, I will quickly review what Giammarino's paper sets out to do, and set out how this leads up to these very curious figures. The paper, as the author puts it, seeks to "provide an overview of what is known about the links among inflation, stock prices, and central bank policy so as to ... identify areas where knowledge is lacking and raise some questions for future research." This is done by posing, and answering, three questions.

The first question is whether equities hedge against inflation. On the face of it, this is an odd question to ask when inflation, at least in North America, is the lowest in a generation, and no one expects a resurgence any time soon. The question becomes even odder when the empirical evidence contradicts what many investors would have considered gospel—it turns out that equities not only do not hedge against inflation, but are in fact

1. I could have chosen one of many different valuation ratios—most tell the same story—but I chose P/BV because they are not unduly distorted by cyclical swings in earnings, unlike price-to-earnings ratios.

Figure 1
TSE 300 Price to Book Value by Quarter

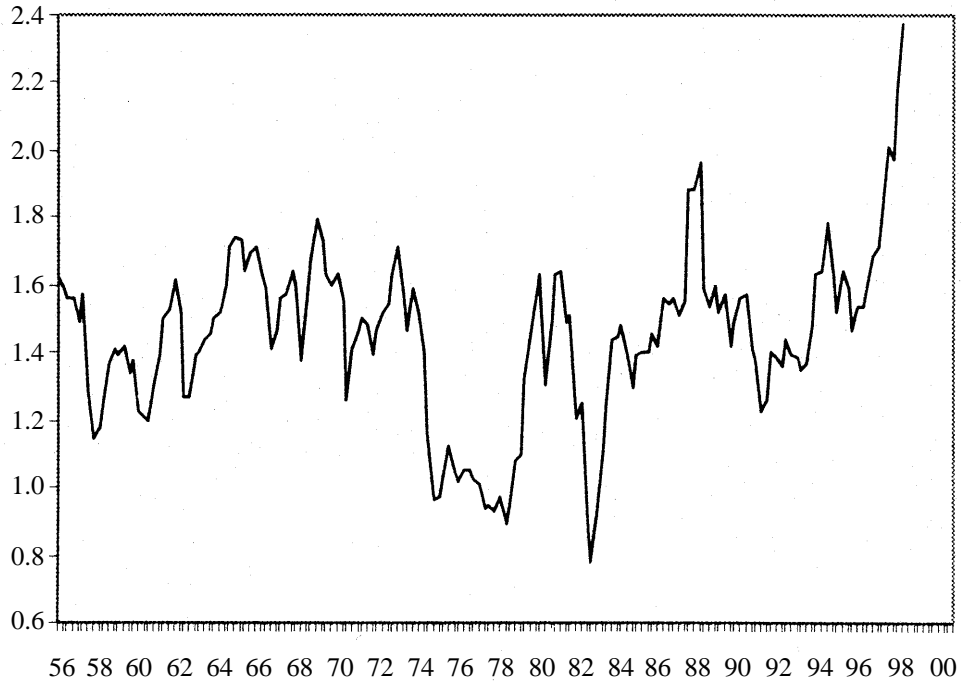
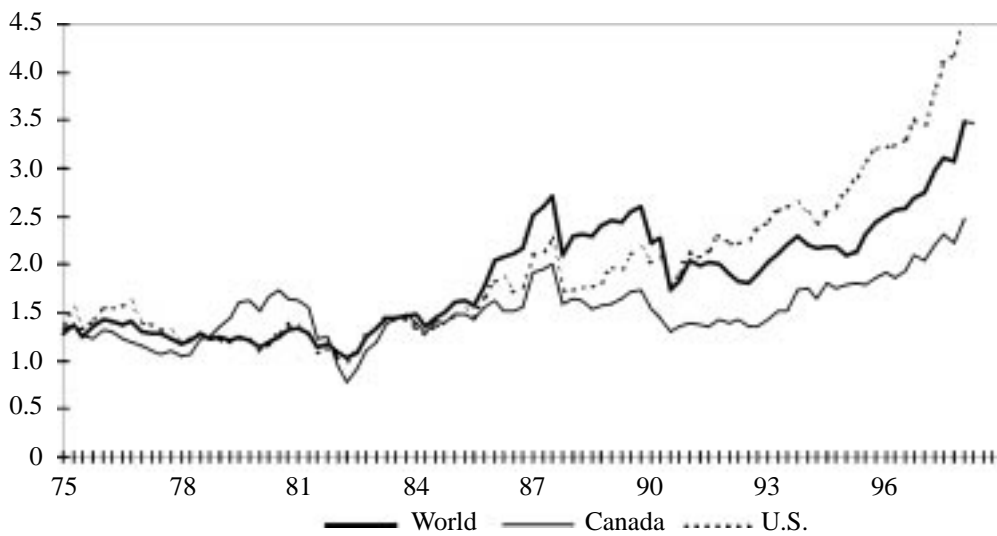


Figure 2
Global Equity Ratios–Price to Book Value by Quarter



Data source: Morgan-Stanley Capital International

negatively correlated with inflation. But to move the discussion towards the valuation graphs below, maybe it would be helpful to turn the question posed by Giammarino on its head: If equity returns are *negatively* correlated with inflation, and inflation goes *down*, does this mean that stock markets should go up? This would seem to be the case. In fact, one of the studies the author reviews, Domian, Gilster, and Louton (1996), notes the asymmetric response of equity returns to inflation—equity returns increase significantly when inflation comes off.

And this leads to the second question posed by the Giammarino paper: What is the link between equity returns and central bank policy? To make a long story short (and to summarize Giammarino's review of the material), it turns out that the key variable is real economic activity. It seems that the reason equity returns increase when inflation is reduced is because there is a negative relation between inflation and real activity, and a positive relation between real activity and stock returns. Add a central bank that can control inflation, and the story is complete: The Bank of Canada reduces inflation; the economy is put on a solid growth path; and equity prices increase to reflect the good underlying fundamentals of the economy. And all of this fits very well with the Bank's official "party line" for many years: The best contribution that the Bank of Canada can make to strong economic performance, and to Canadian public life in general, is to get inflation under control.

But this leads to the third, and most troubling, question Giammarino poses: What should the central bank do about equity-price bubbles? This question is particularly troubling when equity-price inflation occurs (at least partly) because the central bank has gotten all other price inflation in the economy under control—we are victims of our own success.

And it is at this point that I will again refer to Figures 1 and 2, and to add some more critical commentary to my discussion of Giammarino's paper. Now, I enjoyed the paper—so much so that my main criticism of it is that it ended about five pages too early. I would have used this extra space to answer this critical third question on equity-price bubbles a little more fully, and, frankly, a little differently than did Giammarino. His answer seems to be summarized in the final two sentences of his paper—that there is little evidence that central banks can identify bubbles, and that, in any event, there is little evidence that bubbles should be a major concern if there are no inflationary pressures. (This may be characterizing Giammarino's treatment of the material a little sharply, but that is in fact how he concluded his paper.)

Starting with the first point, that central banks cannot identify bubbles: I do not think that there will ever be any consensus on when bubbles are occurring in markets, if only because, by definition, it takes a

difference of opinion to make a market. And it is all the more difficult to identify bubbles when there are already sound fundamental reasons for stock prices to increase, as we have discussed. But these questions, difficult as they are, have all been asked before, and in terms almost identical to those in Giammarino's paper. For example, quoting from the minutes of a Federal Reserve Board meeting:

There is no means of knowing beyond question how far this recent rise in share prices represents excessive speculation and how far a readjustment of values to increased industrial efficiency ... and larger profits.

This meeting was held 70 years ago, in 1928, shortly before the Great Crash. One thing we have learned from that experience is that we cannot expect clear answers when identifying bubbles; and we certainly cannot wait another 70 years for the question to resolve itself. In the meanwhile, the central bank must judge the risks inherent in bubbles, and judge whether the probabilities of such scenarios are increasing or decreasing. As the valuation graphs (Figures 1 and 2) show, although we cannot definitely say we are in a bubble, the risks of being in one are increasing.

This brings us to the second point in Giammarino's analysis of bubbles: The risks they pose. I would argue that there are three main risks posed by asset-price bubbles, and thus three reasons why central banks should care about equity prices. Of these three risks, one is emphasized in the conclusion of Giammarino's paper, and one is mentioned more in passing. But the third, and, to my mind, most important risk is not emphasized enough in the paper.

The first risk, emphasized in the paper's concluding sentence, is that of general inflationary pressure. The link between asset prices and other prices in the economy lies through the "wealth effect:" people own stock; stock prices go up; people feel wealthy; spending goes up; inflation goes up. It seems straightforward—except that after the biggest bull run of this century, there still does not appear to be any significant inflationary pressure in the economy. Although general inflationary pressure should always be a concern of a central bank, to this point it seems that none has been coming out of the equity market.

The second risk, mentioned in the body of Giammarino's paper but not its conclusion, involves misallocation of resources. If prices do not reflect "fundamentals," however defined, then resource-allocation decisions based on those prices will be fundamentally unsound. In particular, excessively high equity prices are associated with an "irrational exuberance" that leads to excessively high business and household debt, the overextension of credit, and overinvestment in what is ultimately excess

capacity. Again, this is a potential risk that is very easy to conceptualize, but very difficult to identify in the current economy. If it is difficult for a central bank to identify bubbles in highly visible market indices, then how much more difficult it must be for a central bank to define “misallocations” in the millions of independent decisions made by the “invisible hand” of self-interested actors a highly complex economy.

But both of these first two risks of asset-price bubbles—general inflationary pressures and the misallocation of resources—are tied together in the third, and, to my mind, most important risk. It is both easier to identify than the other two and not sufficiently emphasized in Giammarino’s paper. This is the risk to the economy when the bubble finally pops. One might think of this risk as what happens when the first two risk channels kick into reverse. First, the wealth effect reverses: people own stocks; stocks go down; people feel poor; spending goes down; the economy goes down. This “reverse-wealth effect” may be asymmetric; the negative impact of declining stock prices could be sharper than the positive impact of rising stock prices. That is, households may sharply scale back spending in order to maintain the value of their portfolios. (This in fact has been the case in Japan, where household saving has actually increased even while interest rates have plunged to their lowest level in history.)

Likewise, there may be an asymmetric response in investment when the misallocation of resources—the second risk channel—is exposed by a slowing economy. Investment will not merely slow, but may drop to zero because firms will not want to add to excess capacity at even a slow rate.

The risks to the economy from popping asset-price bubbles are very well documented in the historical record; the experience of Japan is only the latest example. These risks are sufficient in themselves to justify central bank attention to equity-price bubbles, regardless of any risk of additional inflation or resource misallocation. (Note that Japan is suffering the consequences of a “bubble economy,” but did not have a general inflation problem.)

I will close by touching briefly on two aspects of how central banks might respond to equity-price bubbles.

One aspect was discussed by Giammarino: the Bank of Canada has only one policy tool at its disposal—control over very short-term interest rates—and presumably only one direction to push them in order to pop a bubble—up. The question becomes if, when, and by how much.

And this leads to a second aspect of the central bank’s response Giammarino did not mention: how to sell such bubble-popping policy to a public exuberant about buoyant equity prices. Or for that matter, how to sell the policy to the finance minister. I would love to be a fly on the wall when

Governor Thiessen explains to Finance Minister Paul Martin that the Bank of Canada hiked interest rates even though inflation was not a problem, just because it wanted to provoke a big sell-off in the Toronto stock market. One can imagine the Finance Minister's response! But dealing with vocal critics is, unfortunately, an occupational hazard of being a central banker.

Another critic of the Bank, Canadian journalist Terence Corcoran, once paraphrased Governor Thiessen to argue that the central bank would not recognize an equity-price bubble if it saw one, and would not know how to react even it did. Perhaps. And, as Giammarino concluded in his paper, clearly a lot of work remains to be done. But a start has been made, and Giammarino's very enjoyable paper will no doubt lead to other such efforts by our Bank. I certainly hope so.

References

- Domian, D., V. Gilster, and D. Louton. 1996. "Expected Inflation, Interest Rates, and Stock Returns." *The Financial Review* 31 (November): 809–30.