



Market Musings

May 26, 2010

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2 – 4 – 6 – 8: What's the Right Inflation Rate?

For two decades, the 2% inflation target has been a sparkling jewel in the collective crowns of central bankers the world over. However, it has been tarnished by the global credit crisis, and in its weakened condition is now coming under attack.

Stirring Up Inflation

The most recent bombshell – and the focus of this report – was lobbed by an IMF report which mused that a 4% inflation target might prove superior to the traditional 2% target in helping to minimize the impact of future economic shocks. For old school inflation fighters who remember well the 1970s and 1980s, this is nothing short of sacrilege.

Double the Fun?

The basic argument for a 4% inflation target instead of 2% is that it greases the wheels of monetary policy, affording central banks even more room to add stimulus.

When central banks cut policy rates to the zero bound in 2008-09, they only managed to simulate a real interest rate of about -2%. There is little doubt that they would have aspired to even more stimulus had it been possible. For instance, our modified Taylor Rule calculations show that the ideal real interest rate in the U.S. would have been in the -5 to -7% range. Instead, some nations were obliged to simulate a lower rate by engaging in quantitative easing and shovelling fiscal stimulus into the economic furnace.

By contrast, a 4% inflation target would allow central banks to take the real interest rate down even further, by an additional two percentage points. These extra two percentage points would have come in quite handy during the recent crisis.

Given a structural increase in both leverage and speculation in recent decades, economic growth may simply be more volatile than once imagined (refer to our earlier report, "[Ever More Bubbles, Ever More Quickly?](#)"). Again, this might bring the zero bound into play more often. A higher inflation target solves this dilemma.

Moreover, if widespread projections (including our own) prove correct that the rate of sustainable economic growth in the developed world is diminishing, the issue may become even more relevant. Slower economic growth generally begets a lower neutral central bank rate, and this shift could make the zero bound a much more commonplace constraint.

Also, with particular relevance to the present, higher inflation would allow a faster restoration of cost-competitiveness in certain countries (i.e. those with high fiscal deficits), circumventing the problem of nominal wages resistant to decline. Higher inflation would also reduce the burden of pre-existing debt – an important matter given ranging fiscal crises – though this is not a costless trick.

One Wrong Rights Another

The IMF is a normally staid institution, but it has recently taken to ruffling feathers. First, it prodded nations to confront the credit crunch with aggressive fiscal stimulus, despite the inefficiency and risks involved. This destroyed the fiscal discipline it had long sought to instil in the world, with potentially calamitous consequences roiling the world today. Now, the IMF contemplates a higher inflation target.

These two issues – fiscal discipline and the inflation target – are not as unrelated as they first seem. In fact, the second represents a sort of penance for the first. A higher inflation target – for all of the noxious odour it generates – undoubtedly allows central banks to more readily contain future financial crises. In turn, fiscal incontinence can be

avoided, allowing the IMF to get back to what it does best – encouraging sustainable fiscal practices, no matter the market conditions.

Broadly, this is the case for a higher inflation target. However, there are compelling counterarguments, too, and many of them are based – fittingly, perhaps – on IMF research.

Milking the 2% Scapegoat

As a starting point, it is perfectly natural to emerge from the credit crunch in search of a scapegoat. This is human nature. The 2% inflation target is a tempting culprit, given that the credit crunch happened on its watch.

However, the level of the inflation target itself is most certainly not to blame for the credit crunch. While it may have limited the ability of central banks to respond to the crisis, it did not create it. Fault for that can be laid on many doorsteps, including those of sleeping regulators, superficial ratings agencies, misguided social policies, and financial institutions with inadequate risk controls. The 2% inflation target must not be the baby that is thrown out with the bathwater.

Tilting at Bubbles

If the conduct of monetary policy must be dragged into the mix, it was the belief that low and stable inflation is a sufficient condition for economic and financial stability that is most deserving of blame. Instead, it now appears to have been a necessary, but not sufficient condition. This has led to many a proposal that the official focus of central banks needs to be broadened to encompass asset prices, and bubbles more generally.

We parried this in an early report from December 2009, entitled “[Tilting at Bubbles](#)”. Our conclusion was that the introduction of proper macroprudential regulations and a slightly more flexible stance to the inflation targeting time horizon should be sufficient to fend off the need for explicitly leaning into asset bubbles. It is simply too difficult to consistently identify damaging asset bubbles, and too costly to lean into them. Whether the inflation target is 2% or 4% is peripheral.

The Economic Cost of Higher Inflation

The definitive study on the relationship between inflation and economic growth was published in 2000 by the IMF itself, entitled “*Threshold Effects in the Relationship Between Inflation and Growth*”. The primary conclusion is that higher inflation in the industrialized world begins to impede economic growth when inflation is not far from 2%.

Of the five specified models in the IMF paper, three suggested the optimal inflation rate is 1%, one suggested a 2% target, and one suggested a 3% target. These findings are hardly a ringing endorsement for a higher inflation target during normal economic conditions, let alone a shift all of the way to 4%.

The five specifications then calculate what the economic cost would be to shift from a 2% to a 4% inflation target. All five specifications calculate an annual economic sacrifice of 0.25-0.50% for the industrial world. Further, a higher average inflation rate tends to translate into more volatile inflation, with additional unaccounted for economic costs. The question is then whether sacrificing at least a quarter to half a percentage point of economic growth per year is worth the flexibility of being able to lower real rates by an additional 2 percentage points when a major crisis hits. This is quite a steep insurance premium, with the implication that productivity in the industrial world must increase about a quarter less quickly than before.

The Regularity of Crises

It is apparent that some pundits are falling prey to a dangerous case of the “recency effect”: the tendency to overweight recent events (like the credit crunch) at the expense of equally relevant but more distant events (like long periods of stable economic growth previously).

For the vast majority of the countries that have pushed their central bank rates down to the zero lower bound in response to the credit crunch, it is the first time in their history that the monetary pedal has connected with metal. In turn, it is the first time there has been any widespread regret that real interest rates could not have been turbocharged any further, via a higher inflation target.

Providing a more objective assessment, the San Francisco Fed uses 25,000 years of simulated U.S. economic data to calculate that a central bank with a 2% inflation target should only bump up against the zero bound about 5% of the time. This type of figure is broadly confirmed elsewhere in the literature¹, with some suggesting probabilities closer to 10%. Qualitatively, this seems higher than the historical reality, but provides a useful pessimistic benchmark against which to contrast the advantages of a lower inflation target. In turn, we calculate that about 5-10% of economic growth would have to be sacrificed for each trip down to the lower bound. This would have been a poor trade-off in the most recent crisis, as the output gap grew no larger than about 5% in most countries, and this slack is rapidly being worked off.

The Fiscal Drag

What about the fact that the occasional need for supplementary fiscal stimulus creates an economic drag of its own? If one presumes that the each premature encounter with the zero bound adds 10 percentage points to the debt-GDP ratio, the IMF estimates that this extra burden reduces potential GDP growth by about 0.15%. While this burden would be theoretically additive with each further crisis, the extra economic growth supported by a lower inflation target in the intervening years and the substitution of fiscal restraint in place of monetary restraint would help to eliminate the cumulative effect (we assume each factor would reduce the debt-GDP ratio over the intervening years by about 5% for a total of 10%). In sum, a higher debt burden might diminish the economic benefit of running lower inflation, but would offset less than half of the benefit.²

Worst-Case Scenario

Really, the only remaining compelling argument for a higher inflation target is that a future crisis might be even larger or trickier than the last one, of the sort that lassoed Japan twenty years ago and hasn't let up since. Usually, the consequence of hitting the zero bound is just that the return to normal takes longer than it otherwise might. Only in extreme instances does the zero bound become a deflationary black hole, as in Japan. The Bank of Canada has estimated that even with pessimistic assumptions such as an ultra-low 0% inflation target, fewer than one in sixty encounters with the zero bound would create the feared deflationary spiral. Japan has (arguably) mismanaged its monetary policy, with stimulus that was implemented too slowly, without enough forcefulness from quantitative easing, and an unwillingness to think outside the box such as experimenting with price level targeting or a temporary increase in the inflation target. In our view, the (admittedly pungent) cocktail of

¹ For instance, Board of Governors of Federal Reserve System, Reifschneider and Williams, “Three Lessons for Monetary Policy in a Low Inflation Era”.

² As a further complicating factor, note that debt burden effects are rarely linear. Instead, the additional burden of sovereign debt can seem virtually nonexistent until a threshold (such as a 90% debt-GDP ratio) is met, with substantially more dramatic repercussions thereafter.

quantitative easing, central bank commitments, and fiscal stimulus did the trick in the latest crisis. With an improved macroprudential framework in the future, this combination could cure what ails the global economy once again in the future. For shocks of a regional nature, a depreciating exchange rate remains a viable option for those not in currency unions.

The Enduring Charms of 2%

It is easy to forget that a great deal of effort went into the original choice of the 2% inflation target. The number was hardly drawn out of a hat. Not only do economic costs begin to mount above 2%, but the complications of the zero bound begin to multiply below 2% (and note that most measures of inflation overstate the true rate of price increase by about 0.5-1.0%, so actual inflation is less than it seems). The 2% target occupies a sweet spot since it is indistinguishable from price stability for the average person and business, and so it can mostly be ignored in their day-to-day functioning.

There is also a more practical consideration. The global economy seems to be recovering – if sometimes fitfully – from the worst collapse in eighty years. This feat of renewal is being accomplished on the 2% target's watch. In fact, the IMF itself recently conducted a cross-country study, determining that the world's inflation-targeting nations (mostly with targets in the range of 2%) survived both the 2007 commodity spike and the later credit crunch better than their peers. If the 2% target performed so admirably, it hardly deserves abandonment at the curb.

The Cost of Change

As anyone who has moved residences can attest, the determination of whether to move must be based on more than just whether the new house is marginally nicer than the old house, but also on the cost of moving itself. It is no different for changing inflation targets. The cost of the change itself is dauntingly high, regardless of the relative merits of the old and new targets. We discuss some of the costs here.

Central banks have spent the better part of twenty years anchoring price expectations around the 2% level. In the event of a new target, some of that effort would endure as the very concept of an inflation target has now been well established, and is equally relevant regardless of the numerical goal. But engraining the specific 2% inflation level itself took quite some doing, and would have to be started anew. In fact, it would be a slightly more onerous challenge as households and businesses would need to first unanchor their expectations before they could be moored to a new level (by contrast, with the original introduction of the 2% target there was no previous target to forget). This process would take years.

A changed target has massive consequences everywhere. Wage and other business contracts would need to be renegotiated. In the event of a higher target, bond investors would be crushed, as a shift from 2% to 4% would require an extra 200bps selloff across the curve.³ For a 30-year bond, this would be the equivalent of about a 40% loss in value. A further credibility premium would also need to be priced into the market, as would a volatility premium, since higher inflation naturally brings higher volatility. All of this would result in further losses. A liquidity trap in the traditional sense might form, namely that few investors would wish to take the substantial losses associated with a higher inflation target. Yields might rise even further.

³ In theory, equity investors might be aided as corporate profits would grow more quickly with a higher inflation rate, but slower sustainable economic growth and costly inflation taxes would severely dampen this effect.

Un-indexed pensioners would see the real value of their pension worth 50% less than they expected twenty years into retirement, and pension funds themselves would find many of their investment assumptions blown to bits.

Central bank credibility is important. It would be fractured by any significant change in the inflation target. Economic players would be reluctant to trust a central bank's new target, since it could just as easily be changed again in the future.

There is something to be said for being part of the 2% inflation targeting club, as the dynamics are well understood by the financial market. It would be far riskier for a country to venture out on its own towards a distinctly higher (or lower) inflation target, as the market would be less certain in its interpretation of and expectation for central bank action and economic growth. Given a persistently positive interest rate spread and inflation rate spread, this would add complications to the nominal exchange rate, too. This might create a mild aversion towards that country's financial assets.

Is all of this just the sort of curmudgeonly thinking that would have argued against pursuing the original inflation target of 2% back in the early 1990s? Not at all – the differences are quite substantial. The advantages of an inflation target over none whatsoever were huge.⁴ By contrast, the advantages (if any) of an inflation target of 4% (or 1%) instead of 2% are much smaller, and more easily swallowed whole by the cost of the change itself.

Punish Savers, Reward Borrowers

A changing inflation target is unequal in its treatment of economic actors. Some win, some lose. The most striking dichotomy is between borrowers and savers. Borrowers (including governments) are richly rewarded by a rising inflation rate as their cost of borrowing remains fixed while their nominal income rises. Savers are punished as their investments no longer yield a sufficient return to compensate for the higher inflation. In turn, it is not surprising that some savers opt to throw up their hands and become borrowers themselves. This is not necessarily a desirable shift, both from an economic and moralistic vantage point.

Generally, savers tend to be older than borrowers. This brings two additional reasons not to increase the inflation target. First, older people tend to be more politically active, suggesting potential political resistance to a higher inflation target (and recall that the political wing maintains final control of the inflation target in many nations). Second, seniors are generally absent from the workforce and so have little ability to make up for the diminished purchasing power of their savings/pension.

Perhaps most compellingly, and most simply put, there is something clearly undesirable about a change that would so clearly punish such a large fraction of the population, regardless of whether other groups would benefit by as much or more. Such a change is just not pareto optimal, whether it is economically optimal or not.

Assorted Ills

High inflation has many assorted ills. At its essence, people need to be confident that their money will retain its value.

If this trust is broken, it becomes necessary for households and businesses to exert more effort to protect themselves against the ravages of inflation. For instance, the length of wage contracts, business contracts, term deposits, and even the duration of corporate bonds naturally shortens with higher inflation. Resources are misallocated. Unproductive speculative investments into such "real" products as precious metals, art

⁴ Inflation expectations were anchored, real interest rates fell, to name a few.

work, and real estate are encouraged by high inflation. Shoe leather costs rise, meaning workers feel a need to spend their paycheque immediately upon receiving it before its purchasing power falls any further. This is time and money that could better be spent on more productive purposes.

Inflation also seriously distorts the tax system. Part of the story relates to non-indexed income tax brackets, which are solved easily enough and already have been in many countries. Less easily solved is the problem of paying taxes on inflation. With 4% inflation and a 50% marginal tax rate, an investment return of 8% turns into 4% after tax, and then 0% after inflation. Earning real profits becomes maddeningly elusive for investors. The fiscal discipline of governments can be rapidly lost in such an environment.

Contrarian Canada

Most of the world's major central banks have rejected the IMF's contemplation of a higher inflation target. But Canada provides a particularly extreme version of that stance, since the Bank of Canada is quite seriously pondering a reduced target. The Bank next renegotiates its 2% inflation target with the government in late 2011, so the issue must soon be resolved.

It is increasingly becoming apparent that simply shifting to a lower inflation target is not the most likely option for the Bank of Canada. As we have noted, there are costs to inflation below 2%, just as there are costs to inflation above 2%. Instead, the braintrust at the Bank appears to be gravitating towards price level targeting, whereby earlier price over/undershoots are met by a compensatory offset later on. We also suspect there is thought being given to pursuing a lower average rate of increase of perhaps 1% instead of 2%. As a result (and presuming a 1% target), if inflation is 2% one year, price level targeting requires that inflation be 0% the next year to average 1% over time.

There are three main theoretical advantages to price level targeting. The first is that the price level in thirty years can be known with the same level of confidence as the price level next year. This greatly aids long term decision-making.

The second theoretical advantage is that central banks need no longer fear the zero bound or deflationary spirals. This is because even when the central bank rate is stuck at the zero bound, inflation expectations will rise steadily higher since everyone knows the central bank will make up for lost time later with a higher inflation rate once the shock is over. In turn, given a flat nominal interest rate and rising inflation expectations, the real interest rate falls. This provides important stimulus to the economy.

The third theoretical advantage is that asset bubbles can be more easily addressed as the central bank may intercept an asset bubble and consequently accept a lower price level in the near term, in the knowledge that it will avoid a larger deviation in the price level later on.

Despite these alluring advantages, we remain sceptical of price level targeting. A brand new approach would naturally create confusion. The entire premise is based on the assumption of a sophisticated public with forward-looking inflation expectations. We are not convinced that this condition holds. If inflation expectations are instead set adaptively, mainly as a function of the historical trend in inflation, then the ability to circumvent the zero bound is lost. Put more practically, it is hard to fathom the public's expectation for future inflation rising every time the present rate of inflation falls.

Using a stylized example, if inflation jumps to 3% from the 1% target in one year, the Bank of Canada would have to force it down to -1% the next year. Unless inflation expectations are perfectly forward-looking and central banks are perfectly credible, this would require a sharp economic slowdown, and would add significantly to economic volatility.

In reality, Canada's existing approach to inflation targeting already resembles a mix of the two systems. The IMF characterizes Canadian monetary policy since the mid-1990s as a "hybrid" between inflation targeting and price level targeting. As they put it, "this implies that bygones are not completely bygones". In turn, Canada is reaping some of the stability benefits of price level targeting already.

Another argument against price level targeting is that no other nation has embraced it yet. It has not been properly tested in the real world, and moreover the market might punish the first mover. This presents an impossible threshold, admittedly, but it is a relevant problem regardless.

Conclusion

To paraphrase Winston Churchill and his musings on democracy, we rather cheekily conclude that the current 2% inflation target is the worst guide of conduct for central banks, except for all the others. It certainly isn't perfect, but other approaches appear to have even greater costs. Repeated studies associate significant departures from 2% with additional economic costs – greater distortions when inflation goes much higher, and greater risks associated with the zero bound and deflationary spirals when inflation goes much lower.

On top of this, changing an inflation target is a very costly – and ultimately unfair – endeavour. Economic actors need to be re-taught – a process that might take many years. In the case of a higher inflation target, savers would be punished – precisely the group that should be encouraged.

Price level targeting presumes perfectly forward-looking inflation expectations. If this condition does not hold, the merits of the approach rapidly fade, and may even translate into economic and market volatility.

Instead, we suggest that the best tactic is for governments and central banks alike to maintain their newfound embrace of macroprudential rules that minimize future asset bubbles. Should negative economic shocks nonetheless arise that require extreme policy measures beyond the abilities of conventional monetary policy, the motley combination of quantitative easing, forward-looking commitments, fiscal stimulus, and even exchange rate revaluation have proven their merit and could reluctantly be used again in the future. In particular, quantitative easing has come into its own as an emergency tool, given its ability to both increase the amount of money in the economy and to lower the cost of borrowing to the average business and household, even when the central bank rate had already plunged as low as it can go.

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