

The Economy of False Competition: How Zero Interest Rates Are Curbing Inflation

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Introduction

Wall Street Journal reporter Ben Leubsdorf wrote an article in August of 2015 “The Fed Has a Theory. Trouble Is, the Proof Is Patchy”¹ that I believe concisely lays out the dilemma facing Federal Reserve officials today, namely that in spite of falling rates of unemployment, inflation and wage growth remain stubbornly low.

Leubsdorf specifically sheds light on the Fed’s continuing influence by the work of the late economist A.W. Phillips, who, among others, is credited with developing the idea that, to quote Leubsdorf, “employers would bid up wages when workers were scarce, but feel little pressure to raise pay when unemployment is high and many workers are available”, ie, that tight labor markets generate higher inflation. The result of this insight, the Phillips curve, has been iterated upon and adjusted over time, but still influences economists and policy makers today.

Like any economic hypothesis, the Phillips curve has had its advocates and its critics. The Leubsdorf article quotes Janet Yellen telling lawmakers in 2010 that “the Phillips curve model provides a coherent and useful framework for thinking about the influence of monetary policy on inflation.” David Stockton, senior fellow at the Peterson Institute for International Economics and a former top economist at the Fed describes the challenge that economists and policy makers face when drawing upon frameworks like the Phillips curve to inform their actions: “Everyone knows it’s a bad model. The problem is, no one has put a better one on the table that outperforms it.”

Most recently, evidence seems to challenge the validity of the Phillips curve in the current economic climate—after all, measures of unemployment have come *down*, but inflation and wage growth remain *muted*. Yet that has not lessened Phillips’ influence over policy makers. Why not? The simple answer for economists and policy makers alike is that there is no simple answer—it seems as if there is no Newton’s Law for these practitioners to draw upon when considering the correct and appropriate action for a given set of circumstances. Well rooted economic theory can, from time to time, fail to correctly model a given set or circumstances. But why are economic models like the Phillips curve not working at present? Why, given low interest rates, expanded money supply, and lower unemployment, is inflation behaving so stubbornly?

This got us to thinking—is it possible that some of the key policy tools used by the Fed to spur economic growth (namely low interest rates) might actually be *causing* low inflation and stagnant wage growth? Can models of

¹ Leubsdorf, Ben, “The Fed Has a Theory. Trouble Is, the Proof Is Patchy”, *Wall Street Journal*, Aug 23, 2015

the causes of inflation provide the Fed with insight as to how their policy may or may not be changed to drive inflation growth?

In this paper we examine the cost-push model of inflation and suggest that perhaps the Fed's policy of low interest rates is actually working against its goal of driving inflation higher. We recognize that there are unintended consequences to any Fed action, and that in an unprecedented and sustained zero-interest rate environment like this these consequences may be difficult to identify and avoid. We believe that by fostering healthy and widespread debate as to possible solutions, we might all be spared the consequences of Fed policy "getting it wrong".

Fed Objectives

In the Federal Reserve Act, Congress established the statutory objectives for monetary policy: 1) maximum employment, 2) stable prices, and 3) moderate long-term interest rates. In addition to these three primary goals the Fed also communicates policies it will pursue to achieve these ends. In particular, the Fed calls out the importance that inflation rates have on stable prices. According to the Federal Reserve, "The Committee (FOMC) reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is the most consistent over the long run with the Federal Reserve's statutory mandate." ²

Factors of Inflation

Inflation is defined as the rate at which the general price level of goods and services is rising. There are four main factors known to "cause" increases in inflation:

- 1) Increase in the money supply
- 2) Decrease in the demand for money
- 3) Decrease in the aggregate supply of goods and services
- 4) Increase in the aggregate demand for goods and services

Economists distinguish between two types of inflation that result from the causes listed above: Demand-Pull and Cost-Push inflation. Both types of inflation cause an increase in the overall price level within an economy, with Demand-Pull increasing price levels when aggregate demand rises more rapidly than an economy's productive capacity (such as when a central bank rapidly increases the money supply), and Cost-Push occurring when prices of production process inputs increase leading to a decrease in aggregate supply.³

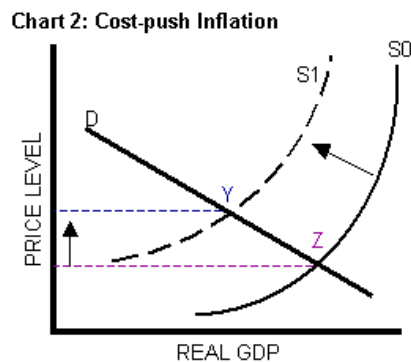
² Federal Open Market Committee, "Statement on Longer-Run Goals and Monetary Policy Strategy", January 2015, http://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf

³ Federal Reserve Bank of San Francisco, <http://www.frbsf.org/education/publications/doctor-econ/2002/october/inflation-factors-rise>

Our recent empirical experience as participants in the US small-cap equity and credit markets has suggested that this marketplace is facing a competitive landscape wherein companies are acting in ways that would run contrary to most economic theory with respect to pricing, cost management and investment decisions. These supply-related dynamics led us to further examine Cost-Push inflation in order to answer for ourselves why it was that businesses were acting this way. The result of this examination is that there are arguments to be made that in a Cost-Push framework, the US economy could actually be facing *deflationary* forces which are curbing inflation, contrary to Fed policy goals.

Cost-Push Inflation

Cost-Push inflation essentially states that when there is a decrease in the aggregate supply of goods and services caused by an increase in the cost of production, then cost-push inflation will occur. Aggregate supply is the total volume of goods and services produced by an economy at a given price level. Cost-Push inflation means that prices have been “pushed upwards” by increases in the component costs of production when firms are running at full capacity. With production costs increasing and productivity maximized, companies maintain their profits on the same amount of goods and services by increasing their price, causing a rise in the general price level.



Federal Reserve Bank of San Francisco <http://www.frbsf.org/education/publications/doctor-econ/2002/october/inflation-factors-rise>

What are the factors of production? In general, economists divide the factors of production into 4 buckets: land (which broadly includes not only land, but elements that can come from the land, like raw materials), labor, capital (machinery, tools and buildings), and entrepreneurship (people who combine the first three factors of production to earn a profit).

What has been happening to the cost of the first three factors of production? In Table 1, we plot the year end values since the recession (2009-2014) of three indexes chosen to represent price trends in Land, Labor, and Capital:

Table 1:

Factors of Production							
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>5-yr CAGR</u>
Raw Materials (1)	609.50	743.24	730.52	759.45	692.00	560.54	-1.7%
Labor (2)	111.20	113.00	114.70	116.60	118.80	121.30	1.8%
Capital (3)	5.65	5.03	4.05	3.44	4.53	3.84	-7.4%
Notes:							
(1) Dow Jones Commodity Index							
(2) Employment Cost Index- civilian wages							
(3) Bloomberg USD US Corporate BBB+, BBB, BBB- 10-year BVAL yield							

If the cost of some factors of production are actually *decreasing*, could it be possible then that the inverse of Cost-Push inflation is actually occurring? That is:

If Cost-Push *Inflation* occurs when there is a *decrease* in the aggregate supply of goods and services caused by an *increase* in the cost of production...

Is Cost-Push *Deflation* occurring when there is an *increase* in the aggregate supply of goods and services caused by a *decrease* in the cost of production?

Criticism of Cost-Push Inflation

In 1981 an economist at the Federal Reserve Bank of St. Louis named Dallas S. Batten published an article titled "Inflation: The Cost-Push Myth".⁴ In it, Batten postulates that Cost-Push on its own fails to explain inflation without help from monetary authorities, because "The ultimate source of inflation is persistent excessive growth in aggregate demand resulting from persistent excessive growth in the supply of money." To paraphrase the main tenets of Batten's work, Cost-Push is a "Myth" because:

#1: Inflation is the result of a persistent excess supply of money. Batten looked at the relationship between money growth across major industrialized nations of his time, and saw the following linkage to rates of inflation:

⁴ Dallas S. Batten "Inflation: The Cost-Push Myth", *Federal Reserve Bank of St. Louis Review*, Jun/Jul 1981, pp. 20-26
https://research.stlouisfed.org/publications/review/81/06/Inflation_Jun_Jul1981.pdf

Table 1
Money Growth and Inflation in the Major Industrial Nations (IV/1975-IV/1980)

Country	Annual rates of money growth ¹	Annual rates of inflation ²
Italy	20.5%	17.1%
United Kingdom	12.3	13.7
France	10.0	10.7
West Germany	7.8	4.1
United States	7.5	9.1
Canada	7.5	9.0
Japan	7.2	6.3
Netherlands	6.8	5.8
Switzerland	5.3	2.5

¹M1 for all countries except the United States for which MIB is used.

²Consumer price index used as a measure of inflation.

Dallas S. Batten "Inflation: The Cost-Push Myth", *Federal Reserve Bank of St. Louis Review*, Jun/Jul 1981, pp. 20-26

#2: Batten further asserts that "Neither economic theory nor empirical evidence indicates that businesses and labor can create continually rising prices."

Why? Because, as Batten argues, "All firms, regardless of the degree of competition in their industry, produce a quantity and charge a price that they expect will yield the highest profit."

"This price is higher in a more monopolistic market than in a more competitive one. If a firm with monopoly power chooses to raise its price arbitrarily, the quantity that it can sell will decrease since a monopolist faces a downward-sloping demand curve."

Therefore profits will fall if prices are arbitrarily increased, and the "monopolist has no incentive to raise prices continually. A monopolist may charge higher prices than a competitive firm, but this does not imply constantly rising (*emphasis my own*) prices." (Of the sort that cause inflation).

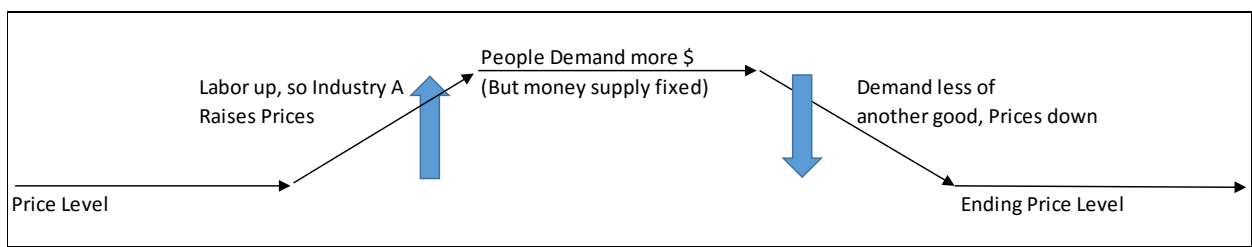
Batten acknowledges that similar arguments have been developed based on changes in the *degree of competition* within markets. Fundamentally, Batten suggests, these go as follows: "Since monopolies do charge higher prices than competitive firms, prices will continue to rise if the economy becomes less and less competitive." This line of argument essentially says that inflation is the result of the acquisition of additional market power by the firms within the economy. Batten continues, "If the economy is less and less competitive, then the continually declining rate of growth of real output that results will cause prices to rise...inflation caused by the acquisition of more and more monopoly power must be accompanied by *less and less* output produced and sold."

Batten negates these competition arguments by comparing a trend rate of inflation (as measured by CPI), with a trend rate of growth of real output (real GNP). Batten contends that "Since the trend rate of growth of real

this time the monetary authority confuses this loss of output (and the corresponding decline in employment) with a permanent decline in aggregate demand, they may increase the money supply.”

This increase in the money supply then prevents the compensatory price declines that economists like Batten would expect to observe in other industries. Batten’s point is that in the example above, the union’s wage gains caused prices in other industries to fall because the money supply was held constant—but if money supply is increased to meet more money demand, the wage increase (Cost-Push) is credited for inflation, but really it has been caused by the monetary authority.

This relationship can perhaps best be conveyed with a simple illustration:



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Using Cost-Push to Understand Where Deflationary Forces Exist Today

Batten’s work provides a helpful framework with which to evaluate the mechanics of Cost-Push Inflation in today’s challenging environment. By utilizing Batten’s framework with today’s economic data, we cannot help but to recognize that much has changed since 1981. Below we utilize current data within Batten’s framework to demonstrate both how Batten’s link between money supply and inflation has weakened and how today’s data shows that the elements of the Cost-Push model suggest that the Fed’s low interest rates are fostering greater competition amongst businesses and thereby *deflation* in certain factors of production. We believe these factors are working contrary to the Fed’s goal of stoking inflation, counteracting its policies.

#1: Money growth is not impacting inflation (or causing it) in the same manner as during Batten’s study:

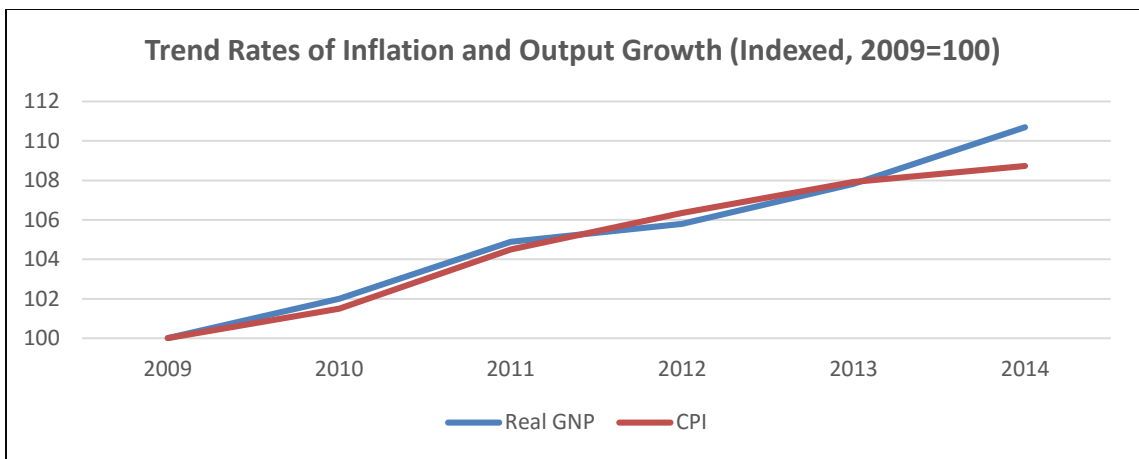
Money Growth and Inflation in the Major Industrial Nations (2009-2014)		
	Money Growth	Annual Inflation
US	12.3%	1.7%
Netherlands	8.2%	1.9%
Germany	7.9%	1.4%
Canada	7.4%	1.6%
Switzerland	7.1%	-0.2%
France	5.7%	1.3%
Japan	4.5%	0.7%
Italy	1.8%	1.6%
UK	-0.1%	2.6%

Notes: M1 used for all countries except UK (M2), and Canada M1+ (Gross) from the Bank of Canada

International Monetary Fund, International Financial Statistics and Data Files, Bank of Canada

The table above seeks to replicate the comparison of money growth and annual inflation made by Batten, but utilizing data beginning at the end of 2009 (a proxy of the period since the most recent recovery took hold). At best, the argument that money growth clearly causes inflation has been weakened in today's environment, and at worst, seems broken as evidenced by Switzerland and the UK.

#2: Batten asserted that since the rate of growth of real output did not show a decreasing pattern while inflation was growing, that inflation during the 1975-1980 period was not the cause of monopolies increasing their market power, *because increasing monopoly power must be accompanied by less and less output produced and sold* (see his original chart in #2 above). Today's evidence suggests the *opposite*: that because real GNP has *increased* (at a greater rate than inflation no less) since 2009, the economy is in a state of competition:



Federal Reserve Bank of St. Louis FRED economic data sets

If the economy is becoming more and more competitive, then the continually increasing rate of growth of real output (aggregate supply of goods and services) that results will cause prices to *decline*.

Further, we believe that empirical evidence since the last recession supports this notion of heightened competition, especially amongst smaller firms.

What follows is a table comparing the average Gross Margin, Operating Margin, Profit (Net Income) Margin, and EBIT/Assets of both the S&P 500 (to represent large companies) and the Russell 2000 (to represent small companies) over the 1998-2014 annual periods with those same metrics during the calendar years ending 2010-2014. A positive difference indicates a result in that year that is above the 1998-2014 average.

S&P 500	1998-2014	Margin in Period minus Average at left				
	Average %	2010	2011	2012	2013	2014
Gross Margin	32.32	0.31%	0.07%	-0.20%	-0.13%	0.34%
SG&A	12.45	1.78%	1.75%	1.96%	0.93%	1.69%
D&A	7.85	-2.37%	-2.68%	-2.60%	-2.73%	-2.63%
Operating Margin	12.02	0.90%	1.00%	0.44%	1.67%	1.28%
Profit Margin	6.98	1.53%	1.90%	1.38%	2.63%	2.25%
EBIT ROA	4.07	0.22%	0.57%	0.20%	-0.65%	0.46%

Source: Bloomberg, Applied Fundamental Research

Russell 2000	1998-2014	Margin in Period minus Average at left				
	Average %	2010	2011	2012	2013	2014
Gross Margin	28.53	0.94%	-0.27%	-0.07%	-0.86%	-0.64%
SG&A	16.77	1.04%	-0.14%	0.39%	-0.08%	0.22%
D&A	5.61	-0.09%	-0.08%	-0.13%	-0.80%	-0.77%
Operating Margin	6.15	-0.01%	-0.05%	-0.33%	0.02%	-0.09%
Profit Margin	1.08	2.11%	1.38%	1.32%	1.45%	1.53%
EBIT ROA	3.24	-0.18%	-0.09%	-0.52%	-0.38%	-0.57%

Source: Bloomberg, Applied Fundamental Research

As evidenced above, the Gross Margin of large firms has been somewhat mixed, especially when we compare this margin differential to the -1.7% 5-year CAGR of the costs of raw materials as evidenced by Table #1 earlier in this paper. Gross Margin was above average in 2010 and 2011 despite increasing raw material costs (good), was below average in 2012 in the face of raw material price increases (expected), but was below average in 2013 despite raw material price declines (bad), and was above average in 2014, but in the face of significant raw material deflation (mixed). The Gross Margin of smaller firms has been below its average in four out of five periods shown, and more so in periods associated with raw material deflation. We contend that this validates heightened competition amongst both types of firms, (though especially among smaller firms), but also that pricing power is low, indicating deflationary pressure. This intuitively makes sense—the vast majority of new business ventures are small businesses competing with other smaller firms.

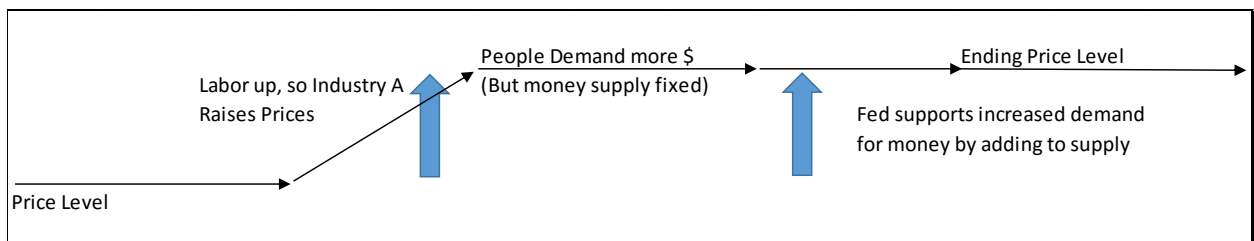
The Operating Margin of larger firms improves upon its difference to average when compared to Gross Margin. The Operating Margin of smaller firms is more of a mixed picture. While there can be many reasons for the difference between larger firms (positive, improved over gross margin) and smaller firms (negative, but still improved over gross margin in 3 periods out of 5), it is most likely that the cause is contained in either lower Selling, General & Administrative (SG&A) costs (either because of efficiencies gained with scale or through technology deployment or more bargaining power with workers than that of smaller firms), or lower relative Depreciation and Amortization (D&A) (largely reflecting a lack of investment in new Plant and Equipment). The SG&A and D&A lines above show how both large firms and small firms have created the relative improvement in Operating Margin—large companies have lowered D&A to fund SG&A, while smaller firms have done the same, albeit at a lesser magnitude. We argue this is consistent with improvements in employment of functions that would reside in the SG&A line and evidence of increasing competition for labor, but we note here any “gain” experienced has come at the expense of Plant and Equipment. This is worrisome to us in that this dynamic

cannot hold permanently given businesses cannot keep reducing other elements in the cost structure to fund SG&A permanently. Therefore, gains in employment functions that would reside in the SG&A line will likely remain asymptotic, which is similar to the empirical evidence reported in Leubsdorf’s article.

Profit Margins (Net Income/Sales) for both large and small firms have been above average, which is understandable given the difference between Operating Profit and Profit Margin is comprised of taxes and interest, the latter of which has declined substantially as a result of Fed policy (see Table 1 above). What is concerning here is that these higher levels of Profit Margin may serve to incentivize market entrants, further increasing competition and lowering prices.

Lastly, the EBIT ROA of large firms has been above average in four years out of five (though driven by lower D&A, which cannot hold), while decidedly below average for smaller firms during the same period, again, arguing for the relative intensity of business competition being greater for smaller firms. A reader might be confused then that we would be concerned with higher Profit Margins incentivizing competition when return on assets is lower than average for smaller firms. We believe that the opportunity cost for return (in this case the return offered by investing in other assets) has made “below average” returns in today’s economic climate satisfactory to entrepreneurs so long as returns and profits are positive. We call this type of competition “false competition”, as it has been fostered by cheap capital (and has derived further benefit from currently cheap raw materials), instead of innovation, which we believe is the only way in which to ultimately make American businesses truly competitive on a global basis.

#3: Batten concedes that Cost-Push Inflation “works” if the resulting increase in demand for money is accommodated by the monetary authority in the form of increased money supply, which is exactly what the Fed is providing to the economy today (see #1 above for recent growth in US money supply). In a “perfect world” then, Batten’s Fed-assisted Cost-Push model would in fact yield an increase in the general level of prices:



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And yet, this hasn’t happened to the extent that the Fed would like. Why?

Putting it All Together

The Fed’s monetary policy, through increasing the money supply, has decreased interest rates, lowering the cost of capital for businesses, which when combined with lower raw materials costs promotes competition, this competition is increasing aggregate supply, reducing overall price levels, while demanding more labor, which has

decreased unemployment, but increased the cost of labor, which in turn increases the cost of factors of production, offsetting the deflationary forces of lower costs of raw materials and capital. In short, lower interest rates have made it easier for competition to exist, and heightened competition is “fighting” the Fed’s policy goal of increasing inflation.

What Can Be Done

One can see how the Fed faces a difficult policy task ahead of them. Fed policy has put more Americans to work, but has ultimately fostered an economy of “false competition” that has lowered rates of return for businesses and entrepreneurs, depriving them of profits needed to finance true innovation.

We would advocate the Fed raise rates to a level that forces businesses earning low/no rates of return out of business. While this would temporarily reverse gains in employment, we believe higher interest rates would force businesses to innovate and truly compete in a healthy manner. The result would be a business environment where prices could be raised by more and more competitive “winners”, leading to ultimately better outcomes for labor, capital and the American economy.

What Does This Mean for Investors

Of course, as investment managers, the primary objective of our research is to gain insights that drive positive results for our investors. The topics covered by this paper are fruitful for this purpose for all investors. As value investors first and foremost, we are attracted to the evidence of heightened competition among smaller businesses, and to the evidence that many businesses have been competing based primarily on easy access to low-cost capital. This creates an environment that will foster big winners (those businesses who possess a true competitive advantage) and outstanding disappointments (those businesses without a competitive moat) that exist only in this unique (and temporary) world that the Fed has created since the Great Recession.

There has never been a better period since 2008 to be in the business of stock and bond *selection* in the small-cap space. Participants over the next fraction of the business cycle will be rewarded by the ability of their diligence processes to uncover businesses with true competitive advantage, and punished for mistaking sizzle for steak. Let the best investors win.