BLUE

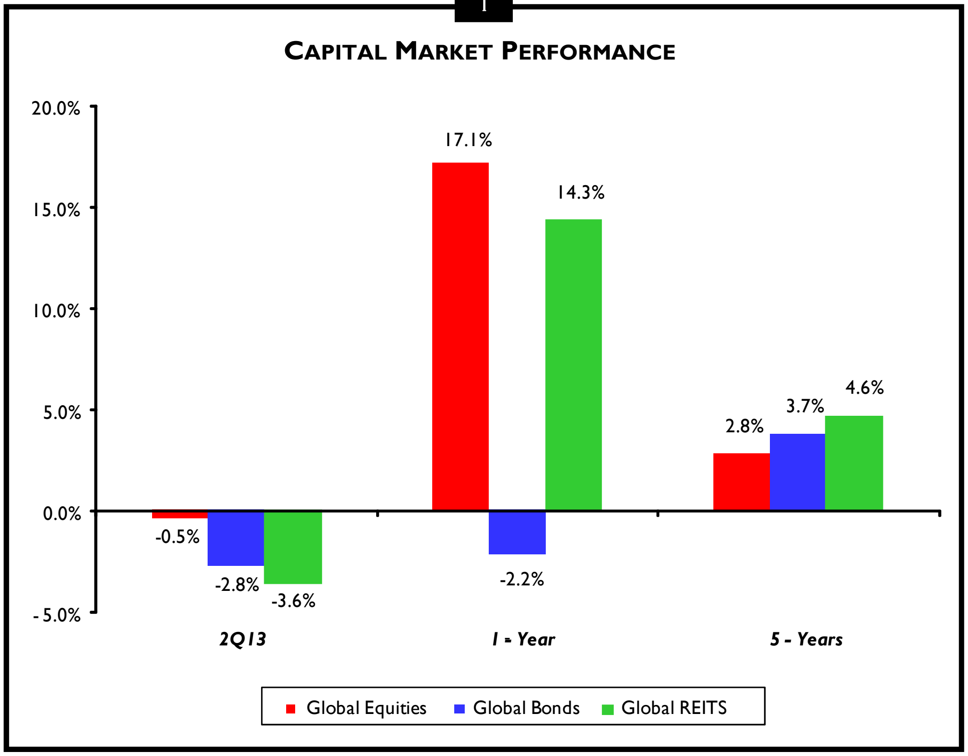
Opium poppies have been cultivated by humans for over 5,000 years. But its chemistry wasn't understood until the early 19th century when the German chemist, Friedrich Sertürner, isolated the two alkaloids that provide its potency. One he named codeine, and the other after the Greek god of dreams, Morpheus. Morphine gained particular popularity as a painkiller after the hypodermic syringe was invented in 1853. Morphine saw wide use in the major wars of that century, starting with the US Civil War in 1861. It was a highly effective painkiller, but it became clear in time that it was also highly addictive.

In 1898, another German chemist, Heinrich Dreser, working for Bayer AG, was searching for a less addictive version of morphine. He experimented by combining acetyl groups to the morphine molecule, and in the course of a year, his work produced two blockbuster analgesics. In one version he attached two acetyl groups to morphine to create diacetylmorphine, and in the second, isolated the natural salicylic acid to form acetylsalicylic acid. The former creation was especially powerful, even, Dreser thought, heroic in its effectiveness. It did indeed perform heroically as a cough suppressant in clinical trials, and was soon marketed as a non-addictive morphine substitute under the brand name, Heroin. Oh, Dreser's other creation, acetylsalicylic acid, also came to market that year as an analgesic under the brand name, Aspirin. It was a very productive year for Herr Dreser.

The turn of the last century saw a surge in the popularity of all sorts of tonics and remedies enhanced with newly discovered drugs to boost health and cure ailments.[1] But in short time, it became clear that these enhancements cured little and were often habit-forming. To Bayer's embarrassment, heroin rapidly metabolizes into morphine.

[1] The only such product that survives today is a tonic beverage called Coca-Cola, originally spiked with cocaine.

1



So, instead of offering a non-addictive substitute, heroin was actually a more potent form of morphine, engendering more, not fewer, drug addicts.

In time, heroin addiction would claim the lives of thousands. It has been a "favorite" drug of celebrity artists, and while some managed to overcome their addiction (Eric Clapton, for example), heroin has taken the lives of many others, from Janis Joplin and Jimi Hendrix to Jim Morrison and Jean Michel Basquiat, even to this day.[2]

Drug/alcohol addiction has always perplexed society. At times, a latent ethical judgment was projected on addicts, as if their addictions represented a personal, moral failing. The renowned Presbyterian minister, the Rev. Lyman Beecher[3], preached that alcoholics are "addicted to sin." In recent decades, drug addiction has been seen less as a moral failure than as a criminal problem, and we have incarcerated hundreds of thousands of drug users.[4] Eventually, in 1967, the American Medical Association declared that alcoholism is a disease.[5]

Whether addiction is seen as a moral failure or as a criminal problem or as a medical disease, treatment has also evolved over the years. The first asylum for addicts was opened in Binghamton, NY in 1864, but these were no more than holding pens, and virtually all of them were eventually disbanded. Beginning in 1907, mandatory sterilization laws were passed in many states tar-

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2 TV actor Cory Monteith died from a heroin overdose this past month.

3 Father of Harriet Beecher Stowe, author of *Uncle Tom's Cabin*, as well as the famed abolitionist Henry Ward Beecher.

4 Approximately 330,000, or more than 20% of the prison population, are incarcerated for drug offenses according to the Bureau of Justice Statistics.

5 Dr. Benjamin Rush, a signer of the Declaration of Independence, wrote in 1784 that chronic drunkenness (the word at the time) was a disease to be treated. It only took the AMA 200 years to come around to that conclusion.

geting addicts, the mentally ill and the physically disabled. Following World War Two, Eli Lilly introduced methadone,[6] a synthetic opioid, as a substitute for heroin, and treatment consists of administering methadone to addicts in gradually lower doses to wean them off of their dependency. This method of treatment is still in use today, although it is highly controversial. Thousands die each year from overdoses of methadone, and evidence of its efficacy is mixed.

Drug addiction ruins lives, takes lives, and effective treatment is far from universally applied, accepted or even understood. Whatever the treatment, it is certain to be a difficult and painful withdrawal process for addicts, with no guarantee of success. As investors brace for a fearful change in the monetary treatment that has been an effective palliative for the past four years, we'll examine how heroin nearly took the life of one of the greatest artists of the 20th century. His genius changed the course of music, and the story of his rise, near death, and eventual recovery gives hope to all facing the challenges of dependency withdrawal.

Investors were surprised (to say the least) when, toward the end of May, following reports of generally weaker economic data globally, Federal Reserve chairman Ben Bernanke chose to announce the Fed's intention of ending the current program of asset purchases amounting to $85 billion per month. He suggested that this "tapering" could begin in the fall and be completed by mid-2014. He cited the prospect of better economic growth in the second half of this year as grounds for winding down this phase of quantitative easing.

Seeing only currently weak economic data, investors sold everything: stocks, bonds, commodities, all declined. In a month,[7] equities in the US dropped more than 5%, Europe and Japan fell more than 10%, and emerging markets plunged more than 15%. Bonds were no safe haven, as UK gilts lost more than 3%, Treasuries more than 4%, and German bunds more than 5%. Emerging market debt lost nearly 11%. Commodities, broadly, fell almost 5% in this short span.

Commodity-related markets were hit the hardest in the quarter. The Australian dollar dropped 12% in the quarter, while Brazilian stocks lost 18% and Peruvian equities plunged 28%. Japan was nearly alone in posting a positive (4%) return in the quarter, but best by far was Bulgaria, up 24% for a 50% rise this year.[8] Precious metals were clobbered, with gold off 23% and silver down 31%. Poor weather helped soybeans rise 11% in the quarter.

Belying their safe haven status, bonds proved no refuge for battered investors. From early May to late June, 10-year Treasury yields jumped more than 100 basis points.[9] High yield bond yields soared 200 basis points,[10] so spreads widened as yields rose, contrary to the usual pattern of spread tightening when rates spike. This performance was much worse (in percentage terms) than the 90 basis point jump in yields in early 1994, a year in which the Fed was to hike rates 300 basis points. As we have noted in previous letters, with yields so low, bonds may not be able to provide protection from principal losses in a panic.

"...bonds may not be able to provide protection from principal losses in a panic."

6 Methadone was developed in 1939 by chemists at Hoechst, anticipating the need for large supplies of opiates for the coming war causalities. The Germans seem to have a history of fascination with opium derivatives. As a consequence of losing the war, the commercial rights to methadone were transferred from Hoechst to Lilly.

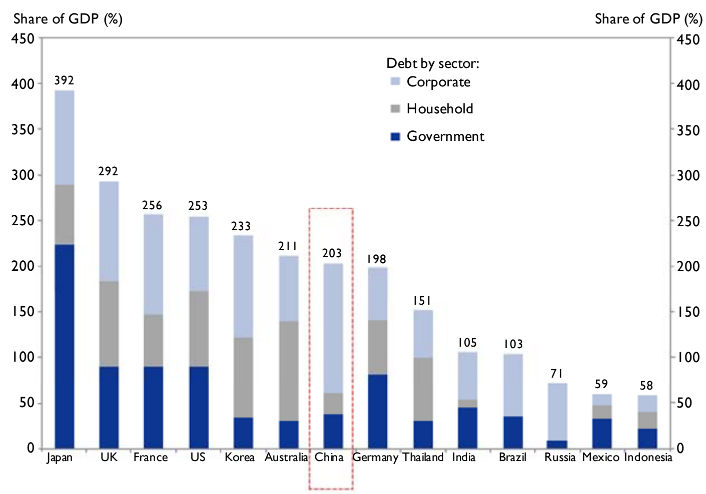
7 22 May-24 June 2013.

8 Embarrassingly, we were not aware that there were listed companies in Bulgaria.

9 From 1.63% on 2 May to 2.66% on 24 June.

10 From 4.8% to 6.9%

2



TOTAL DEBT-TO-GDP RATIO, 2012

Note: "Corporate" includes all private debt for Brazil and Russia.
Source: BIS, IMF, National statistical offices, World Bank.

"It's raining now."

Subdued is how the IMF characterizes the global economy, with an outlook skewed toward weaker growth.[11] Over the past three years, annualized global output has decelerated every quarter, from 5.1% in early 2010 to 2.6% at the beginning of this year. Weakness has occurred in virtually all regions, but most impactful has been the slowdown in emerging market economies, the real engines of growth for the past decade.

In November 2001, China formally entered the World Trade Organization, agreeing to liberalize its trade policies and, more importantly, providing wide access to global markets for its exports. The economic boom in the decade that followed not only saw China's economy surge from 2% of world GDP to 15%, but it brought prosperity to economies that provide China with the raw materials of growth, from Brazil to Russia to Indonesia and beyond. China takes half of the world's output of industrial metals, and consumes half of the world's pork.[12] Let's remember that another major contributor to this growth was Fed monetary policy, which remained loose throughout the decade, thus providing cheap financing for China's exports. In the process, in order to prevent a rise in its currency that might diminish its export growth, China accumulated nearly $4 trillion of reserves for a rainy day.

It's raining now. The consumption binge in the Western economies collapsed under the weight of the massive debt that fueled it, and recently rising real rates has spurred an outflow of capital from emerging markets. The growth model of the previous decade, rising exports financed with cheap money, is broken, and a new model has yet to emerge. Developing economies are still expected to grow around 5% this year, and China is hoping for 7.5%, but this is the slowest pace since 1999.

Capital outflows are weakening emerging currencies, and central bankers have been reluctant to spend foreign reserves to defend them due to uncertainty over future capital flows and future reserves accumulation. So they have chosen to hike interest rates[13] to defend their currencies at a time when economies are slowing.

China faces a different challenge than its emerging market peers: rapidly rising debt, now more than 200% of GDP (Chart 2). Of particular concern is the rise in the largely unregulated non-bank financing, which has grown over the past five years from 20% to 50% of all new credit extension. For reasons that have not been explained, the People's Bank of China decided not to provide liquid-

[11] IMF, *World Economic Outlook*, July 2013
[12] Hence, the proposed purchase of Smithfield Foods, the world's largest pork producer, for $7.1 billion.
[13] 100 basis points in Brazil, and over 200 basis points in Turkey, India and Indonesia.

ity to the markets last month, and on 20 June overnight rates jumped from 2% to more than 13%. They have since retreated, but whether this liquidity squeeze was meant to send a signal to curb lending or was just a policy error, the markets were shaken.[14] China will have to find a way to manage credit growth, resolve the large amount of nonperforming loans and develop a better functioning financial market and regulatory system.

Europe's economy is contracting. The good news is that there appears to be no crisis imminent, as tiny Cyprus' insolvency was handled last quarter with bank depositors losing most of their money. But while various measures have bought some time, it is likely we haven't seen the end of debt problems in Europe. Of particular concern, but for next year, when the first bailout program ends, is Portugal. Two years after the Troika (ECB/EU/IMF) bailout, Portugal's economy is smaller and its indebtedness is larger. The official unemployment rate is 18% and public debt is now around 120% of GDP. Portuguese banks own 20% of the government debt, about €40 billion, equal to 100% of bank capital. When Greek government bondholders were forced to take losses,[15] European authorities swore that this was an exception, that there would be no more haircuts permitted (imposed). But it's hard to see how a debt restructuring can be avoided with Portugal, and the market is beginning to take notice, as Portuguese spreads have widened 150 basis points in the past two months.

Ample liquidity and lines of credit have averted insolvency, for now, but victory can be declared only when economies are in a position to grow faster than their debts. Debt restructuring can help, but fundamental improvement requires structural reform in many countries. Laws limiting the hiring and firing of labor need to be liberalized, restraints on trade removed, and public spending be brought in-line with long-term sustainable revenue. These reforms are needed everywhere: in the US, in Europe, and perhaps most acutely in Japan. However, investors have taken (unwisely, in our view) a rather hopeful view of Japan's prospects.

The markets' high hopes stem from Prime Minister Shinzo Abe's Three Arrows program, announced earlier this year. Abe's first two arrows, a promise to pressure the Bank of Japan to ease aggressively in order to create inflation and, secondly, to spend government money on more public works programs, has been greeted with euphoria, as the Nikkei soared 80% (it has since retreated a bit), and the economy grew at a 4% pace in the first quarter.

"These arrows won't fly far."

These two arrows are likely to induce no more than a temporary high. Over the past 20 years, social spending has doubled, from 11% to 22% of GDP, financed with deficits of 10% of GDP. The working age population peaked in 1990, and total population is in interminable decline. There are twice as many people over the age of 65 as under the age of 14, and this spread will continue to widen. With these demographics and a debt-to-GDP ratio that is the highest in the world (see Chart 2), more fiscal spending is reckless. To raise inflation to 2%, Abe will have the Bank of Japan buy securities equal to 14% of GDP, not just government bonds, but corporate debt and equities as well.

These arrows won't fly far. The third arrow, structural reforms to promote private investment and economic recovery, is the key to establishing a sustainable path of growth.

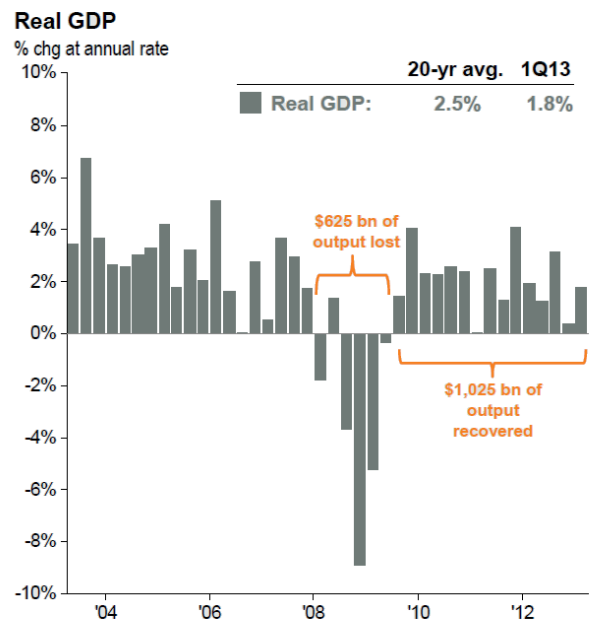
[14] There has been no official announcement of the cause or reason for the decision not to supply adequate funds to the market that day.

[15] Private bondholders, that is, as the ECB holdings of Greek debt were allowed to remain on the books at par.

"...quantitative easing has not stimulated the economy..."

3

FEDERAL BUDGET SURPLUS/DEFICIT
% OF GDP, 1990-2022



Source: BEA, FactSet, J.P. Morgan Asset Management.
GDP values shown in legend are % change vs. prior quarter annualized and reflect 1Q13 GDP.
Data are as of 6/30/13

Japan's labor market is a maze of regulations, agriculture is heavily protected, and therefore inefficient, and corporate governance needs overhauling. These are as much political challenges as economic ones, and based on the proposals thus far, real reform is unlikely to occur.

The US economy also weakened in the second quarter, but the signs are encouraging for a pick-up in the second half of the year. Employment gains have been steady, around 200,000 new jobs, on average, each month. We've maintained that pace for the past 3-, 6- and 9-months. Weekly earnings are up 2.2% from a year ago and hours worked are up 2.5%, so total cash earnings are ahead 4.7% in the past year, or around 3% after inflation. Retail sales are 5.7% higher than a year ago, and industrial production is 2% greater. In 2009, $625 billion of output was lost, but since 2010, the economy has grown by more than $1 trillion (Chart 3).

Inflation is low, up 1.8% in the past twelve months, and running at just a 1% annualized rate in the second quarter. With the Fed's quantitative easing programs adding more than $2.3 trillion to its balance sheet, we find many investors remain perplexed as to how inflation can be so low after this unprecedented monetary easing. Milton Friedman provided the answer 50 years ago when he noted that inflation occurs when the supply of money outstrips its demand. If inflation is falling, it means that the demand to hold money exceeds even the $2.3 trillion of new money supplied. Could that be true?

In the 2008 financial meltdown, asset prices plummeted, from homes to equities. Corporate bonds were priced for a 24% default rate, worse than in the 1930s. Gold plunged 25% and commodities dropped 37%. Deflation was expected for the next ten years. The demand for cash was enormous: more than $2 trillion enormous. So, yes, the expansion of the Fed's balance sheet only met the demand to hold cash, thus it was not inflationary.

Recently, we have signs that conditions may be reversing. Confidence is rising, marginally, and real yields have moved higher. Money has begun to move out of cash and bonds and into equities and real estate, and this might just help push nominal GDP higher. If so, the Fed would be correct to begin to withdraw its quantitative easing.

It's important to note that quantitative easing has not stimulated the economy; indeed, this has been an exceptionally weak recovery. Quantitative easing was necessary to heal the economy, to provide sufficient cash to meet the demand to hold money, but could never boost real economic growth. Tapering, therefore, does not have to harm the economy if, in fact, the demand to hold cash is diminishing.

The US faces many similar challenges as other countries—aging demographics, unsustainable social spending, inefficient tax structure—but also holds a number of significant structural advantages. Energy is one such area. Powered by technological advances, the production of domestic oil and gas has risen 50% per year since 2007, and the US has the potential to be a net energy exporter in the years to come. Natural gas prices are less than half those in Europe, and only about a quarter of the price in Asia.[16] This price differential confers enormous competitive advantage to energy-intensive US industries, such as petrochemicals. By 2020, the energy boom could mean an additional 1.7 million jobs and add nearly $700 billion to the economy.[17]

Additionally, trade competitiveness is improving, and exports of high value-added products, such as autos, airliners and medical devices, are poised to add another almost $600 billion to GDP and another 1.8 million jobs. Advances in computing and analytics, the so-called "big data" revolution, promise to enhance productivity and operational efficiencies in retailing, manufacturing, health care and government services. The US is well-positioned to regain economic leadership in the world, but that will require enlightened political leaders, which is by no means guaranteed. Political failure can have devastating economic consequences, as we saw this past month.

A once-great city filed for the largest municipal bankruptcy in history. This was a long time in the making. Sixty years ago, 1.8 million people lived in Detroit, making it the fifth largest city in the country. Today, it has fewer than 700,000 residents, 18th on the list of American cities. Of its $18.5 billion of debt, $3.5 billion is unfunded pension liabilities and another $5.7 billion is unfunded retiree healthcare liabilities. The city has more retirees than workers currently. Residents, workers, pensioners and bondholders will all likely bear the significant costs of this bankruptcy.

The mismanagement of the US auto industry over decades is an important contributor to the city's demise. 40% of jobs in Detroit are linked to autos, but the city's litany of woes is largely self-inflicted. The model for engendering vibrant cities is no secret: reduce taxes and regulations to encourage business development, support education, focus on the growing areas of health care and technology. Minneapolis and Pittsburgh provide but two examples of successful northern cities that have followed this script. Whether the bankruptcy marks the turnaround of a once-great metropolis, or the funeral of a long-suffering, terminally ill city, will be up to the people of Detroit.

"The US… holds a number of significant structural advantages."

Cleota Mae Henry was a well known blues pianist throughout southern Illinois. She married a well-to-do dentist, and when their son was born in 1926, she was determined to have him learn piano. She detested loud, brash instruments, which is probably why her husband gave his son a trumpet when he turned 13, to irk Cleota Mae. To her dismay, he took to it.

New York was the center of music in the 1940s, and it drew musicians from around the world. Cleota Mae would not permit her son to venture off to that big city on his own, but she relented when he was accepted to study at the Julliard School. He spent part of the next two years attending classes at Julliard, complaining about its emphasis on classical Western composition. Years later he would admit this classical training and knowledge of music theory were fundamental to his development. Most

[16] Per mmBTU, at the end of June, the gas price was $4 in the US, $10 in the UK, $14 in China and Japan.

[17] McKinsey Global Institute, Game *Changers in the US Economy,* July 2013.

of his time in New York, however, was spent trying to meet the great Charlie Parker, "Bird," one of the greatest jazz musicians of all time. Unfortunately, "Bird" behaved so erratically due to his heroin addiction that he found it hard to keep his band together. In 1945, Dizzy Gillespie had had enough of Parker and quit, so there was an opening for a trumpet player.

"The 1950s would see art develop in a new way..."

In the 1940s, jazz had been transformed by Parker and Gillespie into bebop, a fast, frenetic tempo with blaring trumpets reaching for the highest notes. It was loud, upbeat, it was hot. In many ways, bebop reflected the times of a booming post-war America flexing its muscle. Noise, sounds, visual displays all defined the modern life—television, radio, billboards were omnipresent—and bebop fit into the times and spirit.

Parker was a genius, but his heroin addiction made him a poor band leader.[18] Three years under his wing brought fame and recognition, but a combination of not being paid and a desire to do something different, caused a split.

The 1950s would see art develop in a new way, a reaction to the high energy and sensory overload of postwar society. Mies van der Rohe would embody this minimalist counterrevolution in his architecture, with clean, unadorned lines and style. The paintings of Mark Rothko of large, solid colors express this same minimalism. But the beginning of this movement occurred in jazz, with the debut album, *Birth of the Cool*, by the Miles Davis Nonet. It was everything music was not at the time: thoughtful, introspective, minimalist. If bebop was hot, this was cool.[19]

Davis had tried heroin with Charlie Parker, and following this album he went to Paris where he began using it more frequently. He played in clubs to wide acclaim, befriended Jean-Paul Sartre and embraced his existentialism, and fell in love with a singer named Juliette Greco. He returned to the US depressed, perhaps because he knew he could not marry her (she was white and their marriage would not be tolerated in 1950 America), or perhaps it was the heroin. The stunning debut of *Birth of the Cool* was followed by four lost years, bouncing around without direction or purpose. Heroin had halted his career, and worse, interrupted his creative genius.

His father owned a farm in southern Illinois, and in 1954, Davis retreated there to self-imposed solitary exile, determined to break the heroin habit, or die trying. After months of painful withdrawal, Davis emerged drug-free. That summer, he performed for the first time in years, joining Thelonious Monk at the Newport Jazz Festival on Monk's great composition, *Round Midnight*. The critics went crazy for his playing, and Davis soon formed a new quintet featuring Sonny Rollins on saxophone. Rollins quit after two years to battle his own heroin addiction, and was replaced by John Coltrane. The following year, Coltrane was fired for his own heroin use, replaced by Julian Adderley.[20] In 1958, Coltrane returned, Bill Evans became the pianist, and the sextet was ready to make music history.

Columbia Records had taken over a deconsecrated Armenian Orthodox Church on West 30th Street in New York and turned it into a legendary recording studio. Leonard Bernstein and the New York Philharmonic made all of their recordings there, as were the seminal Bach records of Glenn Gould. In two, 3-hour sessions over two days in the spring of 1959, the Miles Davis Sextet entered the church with only the broadest sketches of what to play prepared by Davis and Bill Evans.

The conceptual breakthrough was that the music would abandon the standard chord progressions so familiar to popular music.

[18] Parker died at the age of 35 in 1955 from complications due to heroin use.

[19] This is the origin of that ubiquitous adjective cool.

[20] Known to all as "Cannonball" for his high energy playing.

Instead, the musicians would improvise on scales, or modes. This modality freed the musicians from the constraints of chord progression. It gave them less material to work with, but more time and freedom to explore. The result was a reflective, introverted, introspective music. For centuries, music had been all about the release of tension: the build-up, the anticipation, and finally the resolution. This music was not about the release of tension, but the expression of it. Sound and silence were given equal weight, inviting listeners to find patterns themselves. *Kind of Blue* received instant acclaim and resonance with audiences worldwide. It is the best selling jazz album of all time,[21] influencing the development of jazz, classical and rock music.

Enduring months of isolation and painful withdrawal must been an unimaginable torment for Miles Davis. But had he not overcome his heroin addiction, *Kind of Blue* would not have been made, and Miles Davis would have been but a footnote in music history instead of one of its seminal figures. Davis knew that he could not survive with heroin, but he wasn't sure he could live without it. Thankfully, he did, and was able to give us one of the greatest pieces of music we have.

The unprecedented loose monetary policy creates its own distortions and disincentives, and investors know it cannot last forever. Withdrawal will be painful, and many will wonder if we can survive without the helping hand of central bankers. But restoring the creativity and entrepreneurial spirit to the American economy will require the removal of this massive monetary intervention. The withdrawal will test our resolve, but there's hope on the other side, as Miles Davis could attest.

[21] More than four million copies sold.

Founded in 2001, Angeles Investment Advisors LLC provides investment advice to select institutions and high net worth families and individuals.

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