

BREAKING WAVE



On the outskirts of the ancient capital of Edo (Tokyo) in 1760, a boy was born to the Kawamura family. His father worked as a mirror polisher for the Tokugawa Shogunate. The boy's given name was Tokitaro, but it was changed to Tetsuzo at the age of ten. It would not be the last time his name was changed; he would use more than 30 names in his lifetime.

The Tokugawa period (1600-1867) was a time of Confucian values and a strict social hierarchy in Japan. But Tetsuzo (as we'll call him now), was a Bohemian spirit: restless (he lived in over 90 houses throughout his life), quarrelsome (he was kicked out

of every school he attended), and singularly focused on becoming an artist.

The Tokugawa period was also a time of isolation for Japan, when contact with foreigners was very strictly regulated, and possession of foreign goods prohibited. Of course, a few Western items were smuggled in, including some works of art, mostly Dutch and French landscapes. Tetsuzo found a way to see these contraband paintings, and absorbed their style and method into his own work.

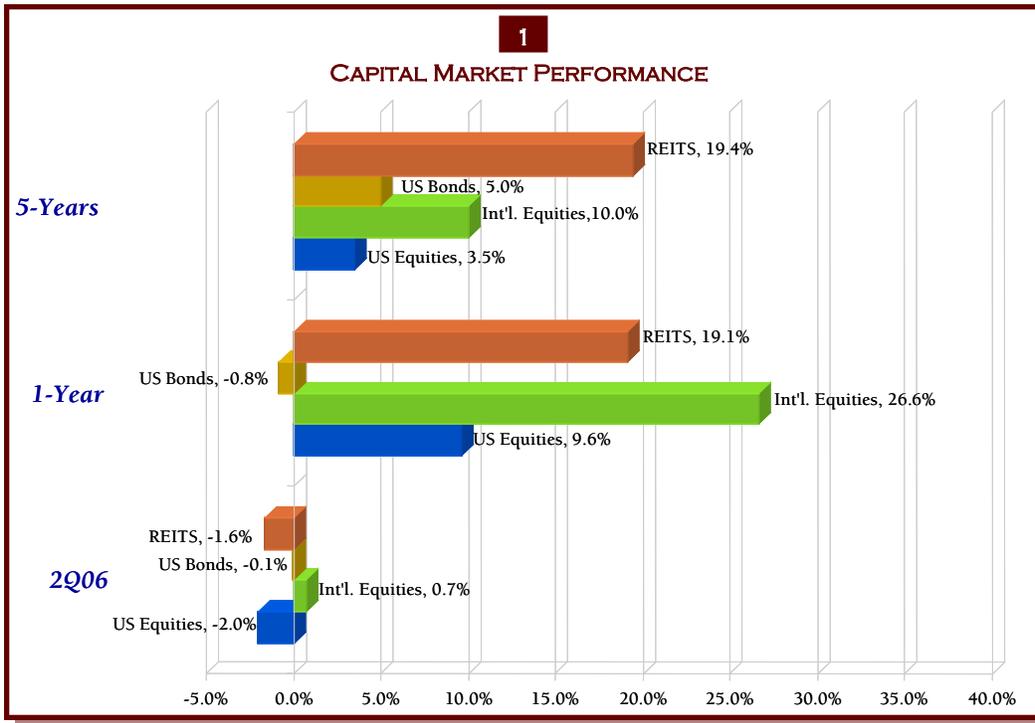
This most unconventional boy, from the most conventional of societies, would become the most important artist of the 19th century. The influence of Western art on his work,

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nearly 30 years. Every economy in the world is growing (actually, Zimbabwe is the one that's not), and every major economy is experiencing falling unemployment (except the UK) and above-average capacity constraints (except France; see Graph 2). China has been trying to cool its torrid growth, but its economy soared 11.3% in the past year, the fastest pace in 12 years.

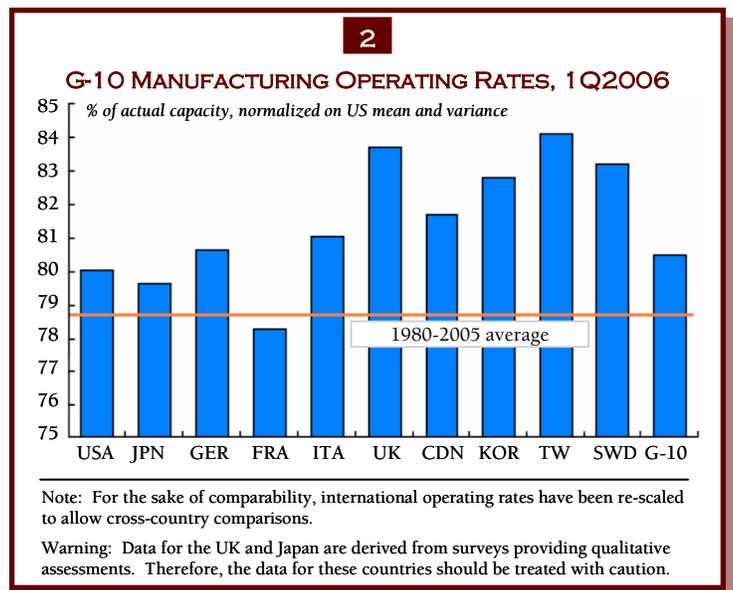
and the impact he had on the development of Western art, give us a lens to view the profound dynamics of today's global economy.

More recently, the quarter just ending was a disappointment for most investors: stocks, bonds, real estate, and the dollar all declined. Turkish stocks (yes, there are a few) fell more than 30% in the quarter, and natural gas (due to the global heat wave—an inconvenient fact) dropped 15%. We noticed that stocks in Malta also lost 15% last quarter, but the other Mediterranean island stock market, Cyprus, gained 19%. Copper jumped 39% in these three months, which was perhaps no surprise to anyone building or remodeling a house today, but the 40% gain in General Motors, which is pinning its corporate existence on a bailout from the French government? Well, that was a surprise.

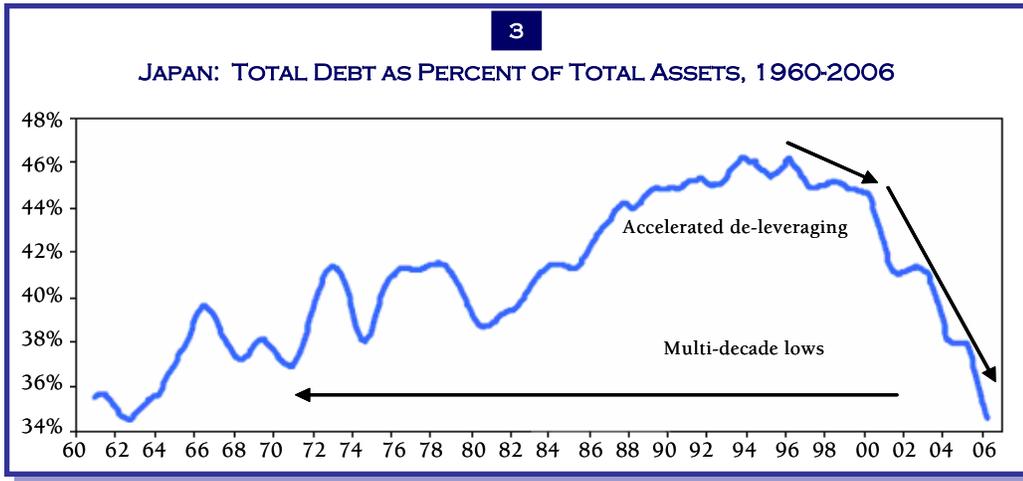
The modest declines in most major capital markets mask three important trends. These trends affect the past, the present and the future, a convenient sequence for our review.

World economic growth has been strong, very strong, as strong as we've seen in

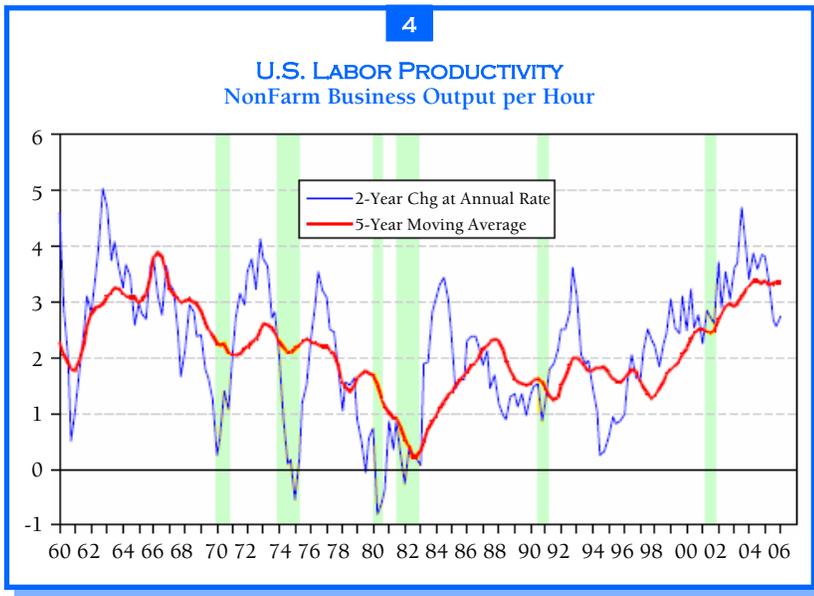
profits (as a percentage of GDP) are the highest in at least 60 years, while corporate balance sheets are rock-solid (interest coverage at 10:1 is a record high and debt/cash flow is near a record low). De-leveraging has been even more pronounced in Japan (see Graph 3, pg 3), a process that will allow an emergence from a 15-



Graph Courtesy of Morgan Stanley



Graph Courtesy Bridgewater Associates



Source: Bureau of Labor Statistics/Global Insight, ML
Graph Courtesy Merrill Lynch

most important measurement we have that correlates closely to real growth and living standards over the long-term. From 1975-1995, productivity averaged 1.5% p.a. Since 1995, it has averaged 2.9% annually (see Graph 4). This is a huge (and very positive) change.

Broadly, there are three ways to increase

productivity: improve the quality of labor (training, etc.), use more efficient tools (technology, etc.), and re-design business practices. Almost all of the productivity gains of the past decade have come from the latter two components, and now, there is evidence (from Dale Jorgenson of Harvard, *i.a.*) that it is this last aspect, re-designing business practices, that is moving to the forefront. This pattern is consistent with past observations (it takes years to incorporate new technology into widespread use—see Table 1, pg. 4), and promises that productivity gains can continue apace.

Economic data have been strong, but they reflect the past.

At present, the pressing issue for investors (geopolitical concerns aside) is the

L-word: Liquidity. Rather, the loss of it.

Market cycles are influenced very strongly by monetary policy. Periods of “easy” money, ample liquidity, encourage leverage and risk-taking, whereas “tight” money causes de-leveraging and flight-to-quality. For a long time now (we can mark the October 1987 stock market crash as a starting point), coincident with the long tenure of Alan Greenspan as Fed chairman, the monetary reaction to every financial calamity was additional liquidity. This was true in 1987 (equity crash), 1989 (equity mini-crash), 1995 (emerging market collapse), and 1998 (following the Russian debt default

year depression of bank failures, deflation and zero growth. This past month, the Bank of Japan raised the overnight lending rate to 0.25%, marking the end of a six-year period of ZIRP (zero interest rate policy).

With economies around the globe humming, commodity prices have jumped off the charts. In the first half of this year, nickel has doubled in price, copper and zinc are up 80%, and have more than quadrupled in price over the past three years.

Perhaps the most encouraging aspect in all these data is the sustained rise in productivity. Productivity is not just another economic statistic; it is the

TABLE 1
DIFFUSION OF SELECTED TECHNOLOGIES

Innovation	Year of Invention*	US Household/business penetration**		Time Elapsed (years)	
		Commercial (1% Share)	Diffusion (50% share)	Commercialization	Diffusion
Business Applications					
Steam Engine	1712	c.1830	c.1870	118	40-50
Electric Motor	1821	c.1895	c.1917	74	22
Telegraph	1830	1870s	n.a.	40	n.a.
Computer	1947	1960s	1997	15-20	30-35
Consumer Applications					
Telephone	1876	c.1890	1946	14	56
Radio	1895	1923	1932	28	9
Television	1920s	1949	1954	20-25	5
Computer	1947	1980	2000	33	20
Internet	1969	1991	2001	22	10
Mobile phone	1973	1989	2003	16	14

*Some dates are approximate, as the original inventor is in dispute.

**Share of US households for "consumer" technologies, share of manufacturing/total businesses for "business" applications.

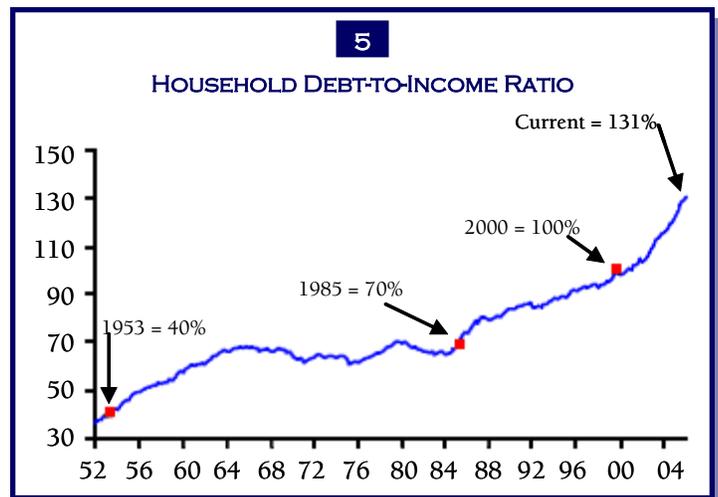
Source: Department of Commerce, *About.com*, *Atlantic Monthly*, Our calculations
Graph Courtesy Goldman Sachs

and the collapse of Long Term Capital Management). The pattern repeated in January 2001, following the bursting of the technology bubble, as the Fed brought the Fed funds rate down from 6.5% to 1% in 2003 and held it there for more than a year. Investors first flocked to bonds (flight-to-quality), but in 2003, with overnight rates 1% and long-term yields at 3.1% (June 2003), investors recognized the signal that it was time to embrace risk. Money poured into emerging markets, high yield (junk) bonds, small cap stocks, commodities and property (from spec houses in Santa Monica to condos in Las Vegas to offices in Shanghai). These asset classes have nothing in common other than risk, and investors seeking risk in hopes of earning high returns, flooded into these assets.

At first, as is always the case, there were good (i.e., economic) reasons for these investments. Emerging countries had bolstered their balance sheets, corporations were deleveraging, and China was booming. So we reduced our savings (to a negative rate) and levered up (Graph 5).

The Fed began taking back some of its over-generosity in 2004, but interest rates were so low and no other central bank joined suit that investors reckoned (correctly) that risk taking would continue to be rewarded. Importantly, inflation remained low throughout this period, as monetary stimulus was offset by an enormous supply shift in the labor markets (India, China

et.al.). Thus, liquidity could be withdrawn gradually and without the risk of slowing the global economy. But that risk/return balance tipped over in the 2nd quarter. There was probably no precipitating cause, but an accumulation of events: a new Fed chairman needing to establish his credibility, 400 basis points of Fed tightening over two years, and 16 other central banks beginning to tighten monetary policy too. Graph 6 shows that central banks have fallen behind the curve, as private credit growth vastly outstrips the pace of monetary



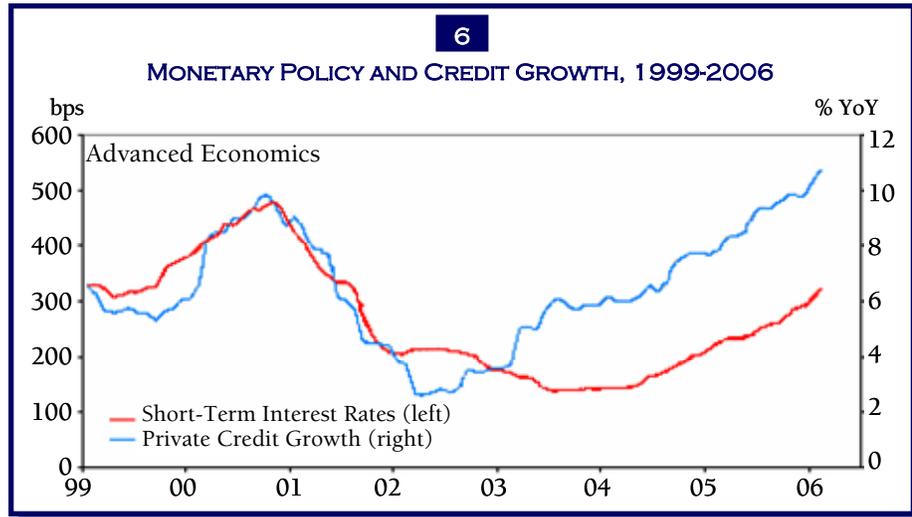
Source: Federal Reserve Board, Merrill Lynch
Graph courtesy Merrill Lynch

tightening. In about six weeks, from early May to mid-June, emerging market equities had fallen 25%, as had the speculative metals (copper, zinc).

The strong global economy and low inflation permitted the Fed to begin its tightening phase with impunity. But with growth slowing and inflation rising (to a ten-year high—see Graph 7), the balance today is far more delicate: continue withdrawing liquidity to combat rising inflation and risk a more precipitous economic slowdown, or pause or reverse course and risk seeing inflation rise more, requiring even tougher medicine later.

Inflation is still relatively modest, but moderate inflation does not mean there is little economic risk. Friedrich Hayek, the great Austrian economist and Nobel Laureate, noted that the Great Depression of the 1930s followed a period of stable prices in the 1920s. He argued that it was a credit-fueled investment boom that the Fed tried to tame that caused the economic collapse. Likewise, Japan in the 1980s experienced stable prices amidst a credit-fueled investment boom that the Bank of Japan tried to curtail in 1989; a 15-year recession ensued. History will tell us whether the surge of funds these past few years into property, emerging markets and commodities was a credit-fueled investment boom, but the withdrawal of liquidity by central banks, heretofore under benign conditions with few adverse consequences, enters a far more uncertain period.

Longer term, over a generation or more, the most profound trend will be the integration of vast populations into the global economy. This, of course, has already begun, and the global labor force has expanded 25% since 1990. China, alone, currently has 166 cities with populations more than 1 million (there are 9

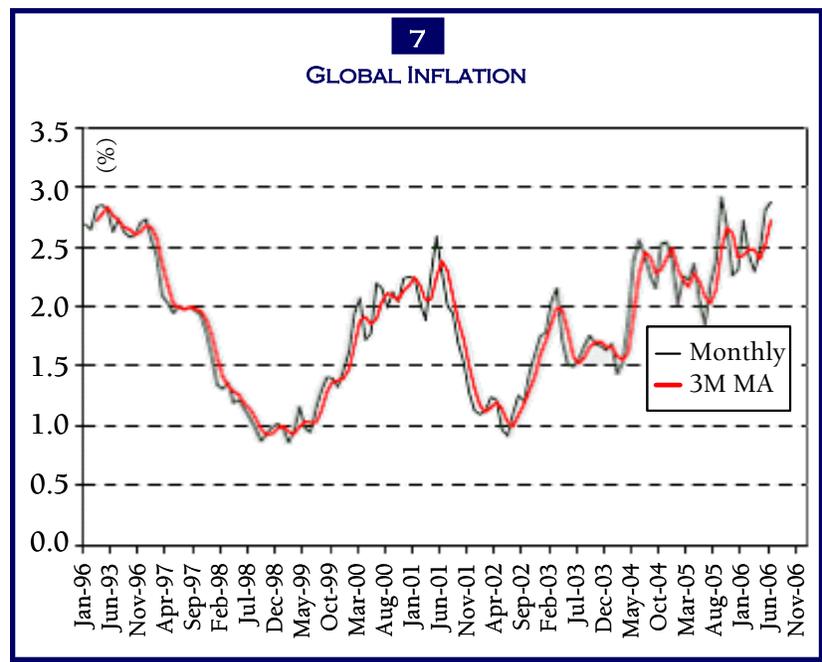


Source: IMF

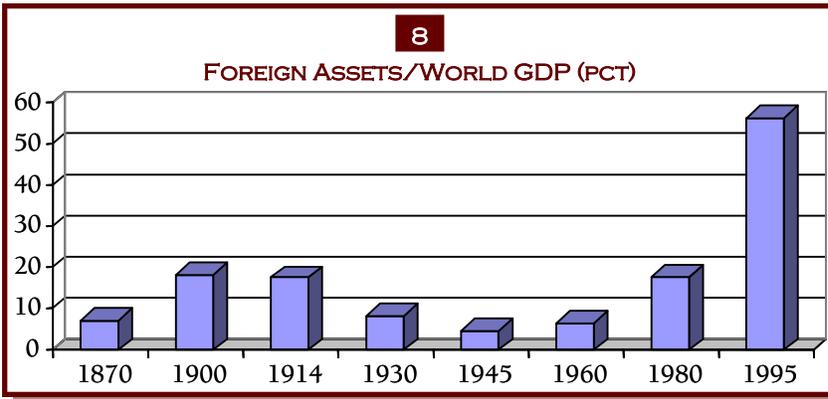
Graph Courtesy Morgan Stanley

such cities in the US). In the next 25 years, another 350 million people will move to China's cities, easily the largest mass migration in history.

We have to go back to the 19th century to see any comparable dynamic. The Industrial Revolution that changed the world was marked by urbanization, rapid technological change, an explosion of world trade and closer integration of markets and economies. The steam ship, the railroad, the telegraph all helped to reduce production costs 50-90%. Global railway mileage



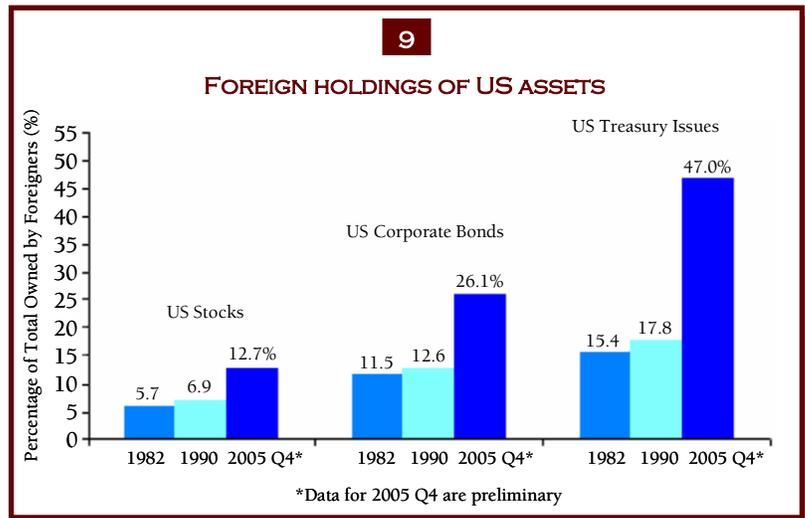
Graph Courtesy Morgan Stanley



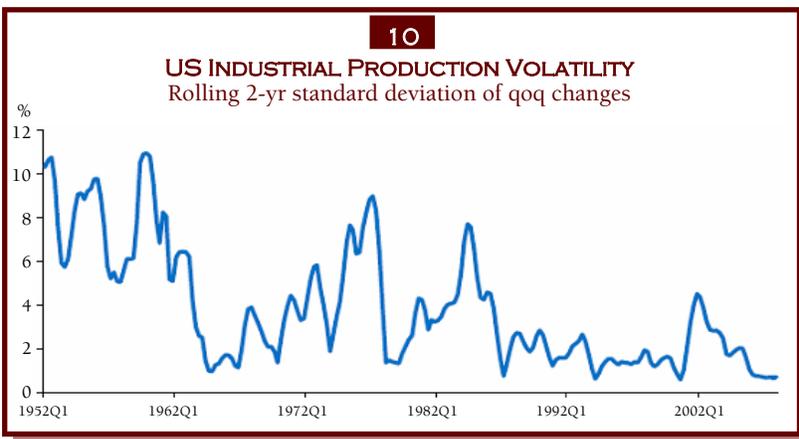
Source: IMF

rose 3,900% between 1840 and 1880. In the century, the cost of transporting wheat fell by two-thirds. World trade exploded and capital flowed around the globe to an extent not surpassed until recently (see Graph 8). Foreigners now have large claims on U.S. assets (see Graph 9).

One (positive) consequence of globalization has been a reduction in macroeconomic volatility (see Graph 10). A less positive consequence is the rising correlation of market returns. Tighter integration of world markets and economies raises the risks of systemic shocks, where problems in one area reverberate globally. And portfolio diversification can be harder to achieve, not only because average correlations are rising, but also



Source: Federal Reserve Board, US Portfolio Strategy
Graph Courtesy Goldman Sachs



Source: Goldman Sachs Economic Research, Goldman Sachs Strategy Research
Graph Courtesy Goldman Sachs

because correlations tend to be higher (and diversification benefits less) when needed most (see Table 2, pg 7).

Hokusai is the name we remember of this greatest Japanese artist. In his 89 years, he completed over 30,000 works of art, but felt that he was only just getting the hang of it: *all I have done before the age of seventy is not worth bothering with*, he said. He figured he would be a great artist when he reached 100, but his art wouldn't reach perfection till he was 110. He was wrong.

From Dutch and French land-

scapes, Hokusai learned perspective, shading and realism, bringing them to Japanese art, but also applying the Japanese tradition of using color as a central element in painting. The result profoundly changed the development of art, and directly influenced the greatest of Western artists. Think of the colors and images of Van Gogh, Gauguin, Manet, Lautrec, all of whom collected Hokusai's work, and brought such new vitality to Western art. The bridge between 18th and 19th century art not just ran through Hokusai, it *was* Hokusai, and his influence extended into the 20th century in the works of

**TABLE 2
CORRELATIONS OF EQUITY MARKETS**

When US Return is	<-8%	<-5%	<-3%	<-1%	>1%	>3%	>5%	>8%
Europe ex UK	0.72	0.71	0.71	0.69	0.20	0.14	-0.07	-0.07
UK	0.82	0.69	0.67	0.58	0.37	0.35	0.25	0.16
Japan	0.50	0.32	0.26	0.40	0.07	-0.01	-0.02	-0.25
Frequency (# of months)	15	33	62	137	198	117	54	16
Average	0.68	0.57	0.54	0.56	0.21	0.16	0.05	-0.06

Source: DataStream, GS Calculations

Graph Courtesy Goldman Sachs

*Using monthly, equity returns data since 1973

Picasso, Escher and other. In Hokusai’s The Hanging Lantern of Kaya Temple (see below), the trees are painted with chiaroscuro shading in the European style and the waves are still in the Chinese tradition, but the perspective is all wrong (as Picasso would famously embrace 70 years later): the tail of the boat is higher than the houses behind it and the boat appears higher



than the house in front.

His most iconic painting, The Breaking Wave Off Kanagawa (also called The Great Wave—see cover), is remarkable in its contrasts, its yin and yang: the enormous presence of the great wave with the empty space below it; the violence of the wave as it’s about to crash versus the calmness of the confident, experienced fishermen below; a sea storm with the sun shining.

Hokusai took from the West and gave back to the world. If the Industrial Revolution profoundly changed societies on one level, Hokusai’s art and its influence changed the world on another level. There are many parallels between the 19th century’s Industrial Revolution and the 21st century’s Technological Revolution, and we can look back 150 years to help us understand how technology will be adopted, how business practices will change, how cultural values will shift, how there will be many winners but also some losers as it all unfolds. We are also reminded that the process of global integration ended abruptly in August 1914, and hope that we can build stronger bridges than last time around. Hokusai gives us an example. 🌊

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