REFERENCE REPORT #33

OIL SHOCKS AND THE GLOBAL BUSINESS CYCLE

On July 18, 2007, The National Petroleum Council (NPC) in approving its report, *Facing the Hard Truths about Energy,* also approved the making available of certain materials used in the study process, including detailed, specific subject matter papers prepared or used by the Task Groups and their Subgroups. These Topic Papers were working documents that were part of the analyses that led to development of the summary results presented in the report's Executive Summary and Chapters.

These Topic Papers represent the views and conclusions of the authors. The National Petroleum Council has not endorsed or approved the statements and conclusions contained in these documents but approved the publication of these materials as part of the study process.

The NPC believes that these papers will be of interest to the readers of the report and will help them better understand the results. These materials are being made available in the interest of transparency.

The attached Topic Paper is one of 38 such working document used in the study analyses. Also included is a roster of the Subgroup that developed or submitted this paper. Appendix E of the final NPC report provides a complete list of the 38 Topic Papers and an abstract for each. The printed final report volume contains a CD that includes pdf files of all papers. These papers also can be viewed and downloaded from the report section of the NPC website (www.npc.org).

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Oil shocks and the global business cycle

- **Cyclical and structural factors explain why this oil shock has been absorbed more easily**
- **New risks may emerge if prices keep rising**

World oil prices have more than tripled since 2002 and recently topped a nominal record high $75/bbl. The cumulative increase is approaching that of the 1970s, which produced two, deep global recessions, and an unprecedented surge in worldwide inflation. And yet, the performance of the global economy during the 2000s has been strikingly different from that time. Global growth, while sluggish early on, has averaged 3.7% since mid-2003, which is well above trend. There has been little net change in the rate of core CPI inflation, although the headline rate has risen modestly.

Many factors probably contributed to the different outcomes in the two periods, including the difference in energy intensity, the rapidity of the price rise, and geopolitical tensions. However, the most striking difference is that when oil prices surged in the early and late 1970s, the world economy already was overheated. In this environment, the price rise acted as an accelerant, amplifying late-cycle dynamics already threatening to undermine the expansion. In contrast, when oil prices began to climb in the 2000s, the global recovery was in its infancy and deflation was the principal worry. Indeed, the hallmark of this expansion to date has been reduced unit labor cost growth, stable core inflation, and resurgent corporate profitability.

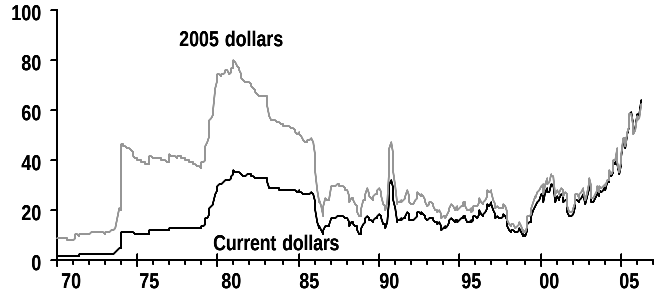
The economy's recent success in absorbing higher energy prices does not necessarily extend to the future. With the global expansion over four years old and utilization rates back above long-term norms, there is a bigger risk of passthrough to core consumer prices, inflation expectations, and labor costs. This would trigger a more forceful response from central banks and from financial markets in general.

The 1970s: oil as a cyclical accelerant

The 1970s oil price shocks dealt a severe blow to the world economy. Prices more than doubled in late 1973 and again in 1979. In both instances the global economy entered recession within a year. There is no doubt that the oil price spikes depressed demand growth, particularly in the consumer sector. However, the subsequent downturns were determined principally by the forces that usually undermine

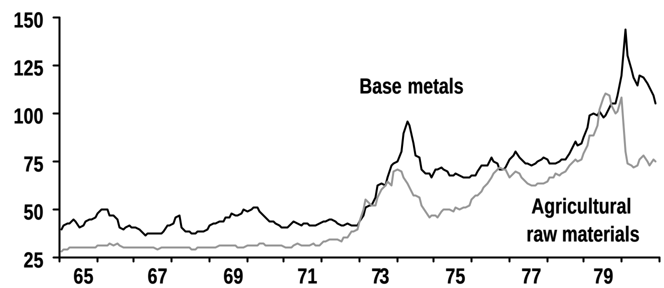
OPEC oil price

$/bbl; real price in 2005 US dollars



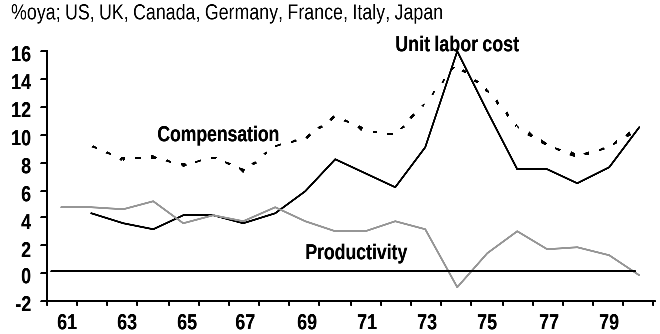
Global commodity prices

1995=100; IMF indexes



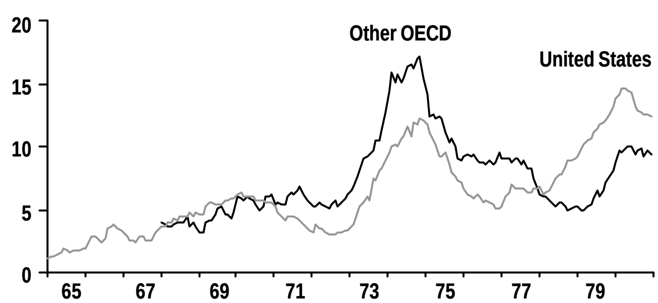
Productivity and costs in the G7

%oya; US, UK, Canada, Germany, France, Italy, Japan



OECD consumer price inflation

%oya



expansions; namely, rising inflation, tight monetary policy, and falling corporate profit margins. These forces already were in place when the oil shocks hit. Thus, in addition to depressing demand, rising oil prices sped up and reinforced factors that would produce economic weakness.

Indeed, the experience of the 1970s—and subsequent decades—highlights the tendency for the price of oil to rise with other commodities in an overheating economy. Three key conditions were present when energy prices took off.

Inflation was accelerating. Booming growth and accommodative monetary policy pushed inflation higher in the early 1970s, well before energy prices increased. In 1973, the OECD standardized unemployment rate was just 3.2%, the lowest in the history of the series (which begins that year). Material shortages were common, and industrial and agricultural commodity prices were skyrocketing (except oil). Consumer price inflation, which was near 1% in the mid-1960s, had climbed to 8%oya in the United States by the middle of 1973, and over 10% elsewhere in the developed world.

Unit labor costs were squeezing margins. With growth soaring and unemployment plumbing new lows, labor compensation growth topped 10% per annum in the G-7 in the early 1970s. At the same time, productivity growth was slowing, resulting in a sharp acceleration in unit labor cost growth. The structural elements of this wage/price spiral are vividly described in The US *Economic Report of the President*, from January 1974 (text box, opposite).

Central banks were tightening. Policymakers responded to the wage/price acceleration. In the developed countries, policy tightening got under way in 1972 and 1978 (and in later decades, in 1988 and 1999), well in advance of the move up in energy prices. US housing markets and auto sales were plummeting when the oil embargo was imposed in October 1973.

Although political factors played a critical role in driving up oil prices, the macroeconomic landscape was supportive as well. Higher energy prices, in turn, magnified forces promoting economic weakness. As oil prices moved higher, inflation and inflation expectations spiked, pushing up interest rates. The Fed hesitated when oil prices surged in late 1973, then raised the federal funds rate to a record 13% in mid-1974. US policy rates reached a high of 18% in 1980.

With wage indexing common, upward pressure on labor costs quickly intensified. G-7 unit labor costs shot above

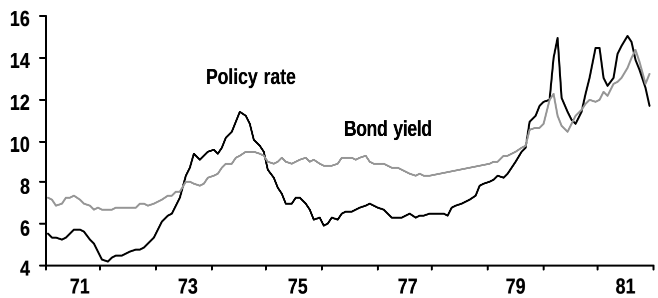
From the *Economic Report of the President*[1]

For eight years economic policy and the news about the [US] economy have been dominated by inflation. The story has been a frustrating one . . . . Inflation seemed a Hydra-headed monster, growing two new heads each time one was cut off. The problem was not confined to the United States; indeed inflation was worse in most other countries. There is now a great deal of inflation built into our system. For one thing, both workers and employers are now used to high increases in money wages which reflect the expectation of rapid inflation . . . . The public is highly sensitive to inflation and reacts in an inflationary way to any news which confirms its expectation of inflation.

1. January 1974, Chapter 1.

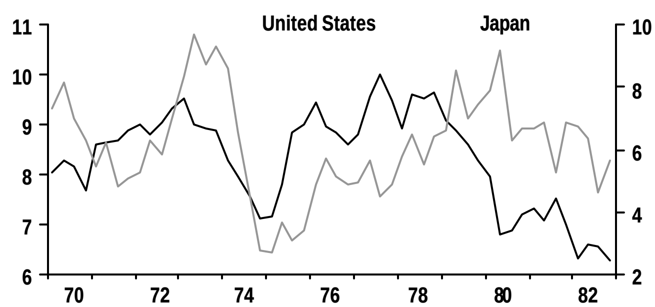
Developed country policy rate and 10-year bond yield

%.p.a.



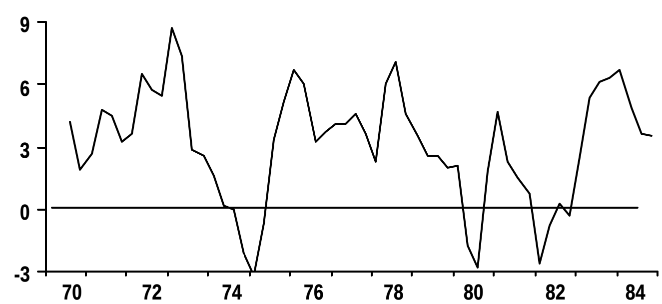
Corporate profit margin

% GDP; both scales



Global real GDP

% change annual rate over 2 quarters



15% in 1974 and 10% in 1980. A more modest but still pronounced rise took place during 1990. Rising interest rates and uncertainties about energy supply reinforced the downturn in spending on housing and consumer durables. Corporates, whose margins already were under pressure, turned cautious, then retrenched.

Entirely different dynamics in the 2000s

In contrast to the experience of the 1970s, the global expansion was just getting started when oil prices began rising in 2002. Both the recession and the early phase of the recovery were characterized by extensive corporate labor-shedding. With inflation low and falling, this opened the door to policies that supported household incomes and spending. Because the early phase of the recovery was so weak and deflation was a threat, central banks cut policy rates to emergency lows. Market rates plunged, cushioning the blow from higher energy prices. This monetary ease was transmitted through global credit and equity markets. Record low rates also bolstered property markets. The resulting wealth effect played an important role in supporting spending, especially in the United States and other English-speaking economies, including the UK and Australia.

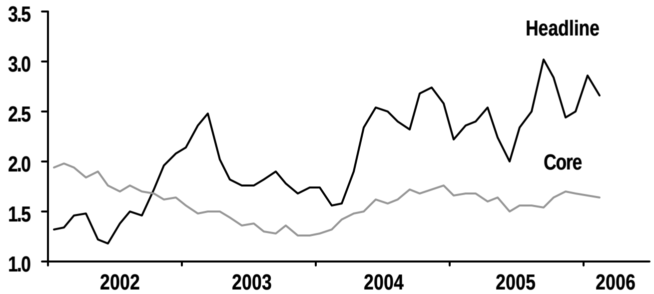
On the fiscal side, US income tax cuts and rebates significantly boosted disposable income growth in 2002 and 2003, when labor income growth was tepid. In the emerging world, many governments shielded consumers from rising global energy prices with a combination of price controls and subsidies. This was especially important in Asia.

This policy and financial market support bought time for companies to restructure. With employment still contracting through 2003, growth in unit labor costs plunged. The combination of moderate demand growth and rising margins promoted a powerful recovery in corporate profits. Gradually the corporate sector turned more expansionary, lifting household income growth and consumer confidence. As the global recovery became better established in 2004 and 2005, market interest rates moved off their lows, but not by all that much. Central banks were slow to normalize rates, with the Fed doing almost all the tightening. Periodic increases in oil prices kept market rates in check because, in the low inflation environment, markets viewed higher energy prices as a tax on growth. In essence, energy prices replaced interest rates in the role of growth regulator.

The contrasting inflation performance also highlights the different institutional setting between the two periods. Today's backdrop is characterized by low and well anchored inflation expectations and disciplined monetary

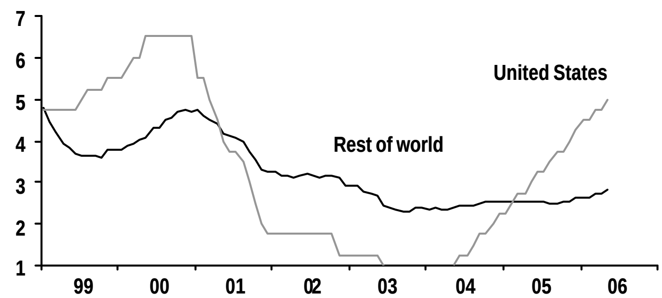
Headline and core global CPI

%oya; excludes Turkey and Brazil



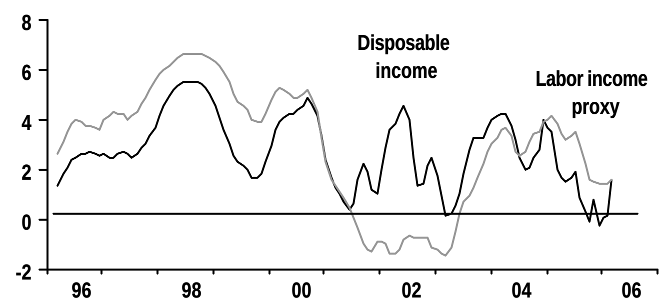
Global policy interest rates

%.p.a.



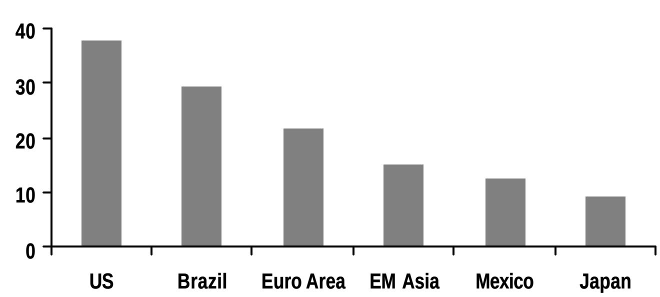
US real personal income

%oya in 3-mo average



Cumulative rise in retail energy prices, Jan 04 -Mar 06

Percent



policy, with many central banks formally targeting inflation. Manufacturing employs a much smaller percentage of the workforce and unionization has fallen, while the volume of global trade relative to total GDP is way up. Inflation indexing and long-term contracts are much less common. Energy-intensity also is down, nearly 50% in the United States.

Inflation risks resurface

The global economic expansion, now over four years old, has matured. Global labor and capacity utilization, which were deeply depressed at the onset of the expansion, have returned to late 1990s highs.

Central banks are normalizing rates to preempt higher inflation. A significant further rise in energy prices would raise the odds of increased passthrough to core inflation and inflation expectations. Long-term bond yields already have increased nearly 70bp in the developed economies this year. Bond yields had fallen during periods of rising oil prices during much of the expansion, cushioning the blow to the economy, but the pattern has broken in 2006. Financial market conditions have not tightened across the board, however. The equity market has risen and credit spreads remain very low. In large part this reflects market confidence that inflation is under control and that central banks will normalize gradually, without the Fed's turning restrictive. Signs of an escalation in core inflation or inflation expectations would change the equation, however, most likely producing significant financial restraint.

The focal point of inflation concerns is the United States, whose expansion is most advanced. Core PCE inflation already is at the top of the Fed's 1-2% comfort zone, so any sign of an increase in unit labor cost growth, core inflation, or inflation expectations will be closely scrutinized. The ECB shares many of these concerns. Euro area inflation persistently has exceeded the Bank's 2% target ceiling. With growth moving back above trend for the first time in five years, officials have limited tolerance for a pickup in wage growth or core inflation.

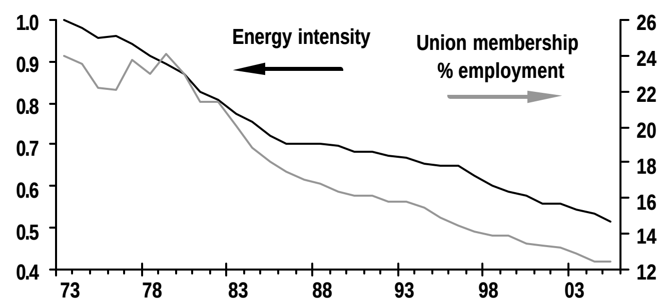
Another risk is worth noting. Many emerging market governments have shielded consumers from rising world energy prices with price controls or subsidies. As the oil-price rise has persisted, this has taken a toll on government finances, causing some (e.g., India, Taiwan, Indonesia, Malaysia, Thailand) to raise prices or roll back subsidies. A further increase in oil prices would result in more widespread action, with negative ramifications for emerging market growth and inflation.

Corporate pricing and unit labor costs in the G4

%oya, US, Japan, Euro area, UK; 2006 is JPMorgan forecast

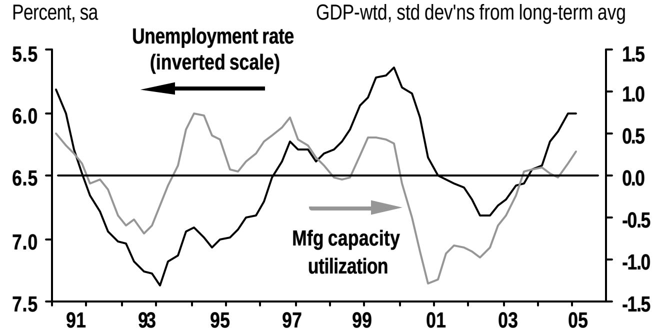
US energy intensity and union membership

1973=1; energy consumption per $ real GDP
% employment



Global unemployment rate and manufacturing capacity utilization

Percent, sa
GDP-wtd, std dev'ns from long-term avg



OPEC oil price and developed country 10-year bond yield

$/bbl
%.p.a.