

El BCE aleja las subidas de tipos de interés y precipita la caída del euro

Trichet deja intacto el precio oficial del dinero en el 1,25% ● Los síntomas de desaceleración en la economía mundial provocan un fuerte descenso del petróleo

CLAUDI PÉREZ
Madrid

Pudo haber sido poeta, pero Jean-Claude Trichet —presidente del Banco Central Europeo— eligió convertirse en ingeniero antes de graduarse en la Escuela Nacional de Administración, donde se forman las élites de Francia. Y pese a llegar tarde a la banca central se ha labrado una sólida reputación como guardián del euro en medio de una crisis que a punto ha estado de llevárselo por delante. En la recta final de su carrera en el BCE, Trichet presenta una hoja de servicios con un solo error claro, la subida de los tipos de interés de julio de 2008, en pleno derrumbe del sistema financiero. Trichet maniobró ayer para evitar un segundo borrón: tras el aumento de abril, dejó intacto el precio del dinero en el 1,25% y sugirió que no solo no habrá una sucesión de subidas este año, sino que, de momento, únicamente puede esperarse un alza para julio. En otras palabras: consiguió controlar a los halcones, el ala más ortodoxa del BCE, los consejeros preocupados por la inflación cuando Grecia, Irlanda y Portugal lidian con una crisis fiscal demoledora.

Los vientos van cambiando en la economía global. El petróleo sigue muy caro, pero ayer bajó casi 10 dólares de golpe (hasta los 112 dólares por barril): el conjunto de las materias primas ha iniciado una corrección desde máximos que tiene mucho que ver con las dudas que siempre aparecen cuando la recupera-



Trichet da la palabra a los periodistas durante la comparecencia de ayer en Helsinki. / J. NACKSTRAND (AFP)

El barril de crudo se abarató 10 dólares y aleja los temores inflacionistas

ción se complica. Ese caldo de cultivo provocó una inflexión en el discurso del Eurobanco. Trichet fue todo lo criptico que era de esperar, pero empieza a reflejar todo eso dentro de su habitual retórica antiinflacionista. El banquero central efluó en todo momento pronunciar la temida

“fuerte vigilancia” sobre el nivel de precios (que equivale a subidas de tipos inmediatas) y optó por expresiones más suaves, que obligan a especular con una segunda subida, como pronto, para julio. Eso sí, en algunos momentos de la rueda de prensa, en Helsinki, fue tajante: “Subiremos los tipos de interés cuando lo creamos necesario”. Eso descarta aumentos inminentes.

El euro sufrió una notable corrección tras los comentarios de Trichet, de 1,49 dólares por unidad hasta 1,45. Eso son buenas noticias: beneficia la exportaciones europeas tras unas semanas

en las que la fortaleza del euro ha sido un lastre para las ventas al exterior de la eurozona.

Trichet tiene un problema. Las economías del centro y del norte de Europa, comandadas por Alemania, se han recuperado con rapidez y han llevado a varios consejeros del BCE —encabezados por Mario Draghi, más que probable sucesor de Trichet— a reclamar más subidas del precio del dinero para evitar un recalentamiento. En la otra esquina, las economías del sur lidian con el problema contrario, un enfriamiento preocupante, una recuperación muy frágil

y una crisis fiscal que se complican aún más con esa obsesión por los precios: las subidas de tipos suponen en los países periféricos más paro, pérdida de rentas y retrasos en las inversiones. Las palabras de Trichet sugieren que el BCE ha bajado el pistón de la ortodoxia; no habrá cambios en junio y para julio dependerá de si se confirman los signos de desaceleración de la economía mundial y el consiguiente abaratamiento del petróleo y de las materias primas.

Aun así, no faltaron las habituales referencias a ese miedo —tan alemán— por la inflación: “Los riesgos para los precios siguen al alza. Vamos a seguirlos muy de cerca”, avisó Trichet. La inflación se situó en abril en el 2,8%, por encima del objetivo del BCE —del 2%— por las tensiones en el norte de África y Oriente Medio y su efecto sobre el petróleo. Si se confirma que la reactivación mundial y europea lleva plomo en las alas —los pedidos de bienes intermedios en Alemania registran caídas del 4%, según los datos conocidos ayer—, los precios pueden relajarse. Aunque el BCE volverá a tener munición dentro de un mes: “En el próximo consejo de gobierno se elevarán las previsiones de inflación para el conjunto del año; eso debería ser suficiente para que el BCE se encamine hacia una subida de tipos para julio”, dijo Julian Callow, de Barclays.

Ese tipo de movimientos tácticos son habituales. Y sin embargo, la inflexión en el discurso de Trichet provocó movimientos en las casas de análisis: si hasta ayer el consenso del mercado preveía cerrar el año con los tipos al 2%, tras las palabras de Trichet la cifra se situó en el 1,75%. La ortodoxia sigue avanzando, pero desde ayer el “ritmo” de las subidas esperadas ha bajado, explicó Elga Bartsch, de Morgan Stanley.

How shale gas will transform the markets

The future of energy

NICK BUTLER

The FT begins a three-day series on global energy after disaster in Japan and turmoil in the Middle East

The past 100 days have been a dramatic time for energy markets, as a nuclear accident in Japan followed revolt across the Middle East, with oil prices fluctuating sharply in the aftermath. Despite the sense of crisis, however, neither Fukushima nor conflict in Libya is likely to disrupt long-term patterns in global energy supplies. But there is one new development – the rising importance of shale gas – that just might.

Much of Libya's oil production has been lost for the past two months but other members of the Opec producers' cartel have boosted supplies. There are still 4m barrels a day of spare capacity. Prices rose by more than 20 per cent, but this reflected nervousness about what could happen next in the Middle

East. In particular, there are signals of uncertainty in Saudi Arabia, with persistent rumours about King Abdullah's health and no clarity on the succession. Following last week's correction, when prices started to fall back, it appears \$125 a barrel was a temporary peak. The market valuations of companies such as Shell and Exxon, which would have benefited more from sustained high oil prices, have remained largely unchanged.

Nor has the tragedy in Japan transformed the nuclear sector. Only Germany has closed nuclear plants, although others have delayed or reviewed plans. And even Germany is making up lost supplies with imports from neighbouring France and the Czech Republic – both of which, ironically, generate their electricity from nuclear power.

The rest of the world is pausing while reviews identify exactly what happened in Japan. In the developed world, the resulting extra safety requirements will make nuclear power more expensive and dependent on subsidies. The relief for the industry is that most of the nuclear plants planned for the next two decades are in the developing world. There, too, some plans are on hold

but they are unlikely to be abandoned – especially in countries such as China and Russia, where public opinion carries little weight.

So despite the sense of crisis in the headlines, the energy market has shown both resilience and resistance to rapid change. Across the world, coal, oil and natural gas remain the source of more than 80 per cent of all primary energy demand, with

Neither Japan's troubles nor conflict in the sands of Libya will force a fundamental change to supply patterns

nuclear adding only 6 per cent. Renewables are the fuels of the future but remain dependent on subsidy and regulation. They still provide less than 2 per cent of global energy needs – a figure that will at best rise to just 7 per cent by 2035.

But in the tumult of recent months one crucial, if little noticed, development has the potential to transform the energy market. A cautious but authoritative survey

published last month by the US Energy Information Administration set out, for the first time, estimates of the volumes of technically recoverable shale gas in 32 countries. Shale is natural gas trapped in rock, and removed by hydraulic fracturing techniques. Once thought too costly, it has of late begun to transform the American energy scene. Production has risen 12-fold in the past decade, and it now supplies almost a quarter of US gas needs. Once a major importer, the country is today self-sufficient in gas. Some now talk of exports.

The EIA does not assess the wider commercial viability of the gas. But the scale of the potential supplies – 6,600trn cu ft in total, with significant deposits in China, Argentina, Mexico and northern Europe – shows the potential. To put such figures into context, the shale gas identified just in the countries the report covers will add 40 per cent to the world's technically recoverable gas resources – and further reserves may yet be found in the Middle East, Russia and Mediterranean countries.

Shale gas can be controversial. Carbon emissions are higher than for conventional natural gas, and several small-scale projects in Europe are

held up by environmental concerns. But high energy prices and political uncertainty in the Middle East could now spur many of the world's energy importers to exploit these new, indigenous gas supplies. What has happened in America could also happen elsewhere. Specialist US firms are looking at opportunities in China, and the development of shale gas there could pre-empt the huge imports of both oil and gas that have been widely predicted.

Significant moves towards shale would have big ripple effects in other energy markets, too. Investments in the Middle East and Africa would be undermined if gas exports into China were smaller than expected. Shale could also rival renewables that require big subsidies, and new pipeline and liquefied natural gas projects. There will no doubt be more energy crisis headlines in 2011. However lasting changes are unlikely to flow from political conflicts in north Africa or the nuclear sector in Japan. Instead, it is the quiet combination of geology and technology that could transform global energy in decades to come.

The writer chairs the King's Policy Institute at King's College London

Greek problems put focus on Spain

Concerns over possible contagion

Critical week ahead for bond markets

By David Oakley in London and Kerin Hope in Athens

Greece has denied that it is considering leaving the eurozone but its looming cash crunch could revive fears that the bloc's debt crisis may spread to Spain.

The admission at the weekend by George Papaconstantinou, finance minister, that Greece was seeking European Union help to finance its debt obligations in 2012 and 2013, rather than return to markets, is set to fray investors' nerves as eurozone bond markets face a critical week.

A year after its bail-out by the EU and the IMF, Greece has made little progress towards putting its public finances in order, let alone achieving the sizeable budget surpluses needed to stabilise its public debt.

Greece's plight could dash hopes that Portugal's bail-out announcement last week had drawn a line in the sand in the more than year-long debt crisis.

One senior investor said: "The hope is that Portugal will be the last bail-out and there will not be contagion to Spain. But worries over Greece could spark a big sell-off in peripheral bond markets and increase the chances that Spain will need rescue loans too."

That would then lead to a deepening of the crisis as Spain, the fourth-biggest economy in the eurozone, is widely seen as the key domino. If Spain falls and needs rescue loans, then the whole eurozone project could be threatened.

A report last week in the German newspaper *Der Spiegel* claiming that Greece was thinking about whether to leave the eurozone prompted furious denials by Greek officials. Philip Sachinides, deputy finance minister in charge of public debt, said: "This is completely untrue... It's a move against the euro-

zone." However, in spite of the denial, the euro fell more than 1 per cent against the dollar on Friday. It has fallen more than 3 per cent since Wednesday, highlighting how Greece is hitting sentiment.

Investors and strategists say the debt crisis can probably be contained to Greece, Ireland and Portugal if Athens can ride out the storms and restructure its bonds in an orderly way. The first signal that Greece is moving towards a restructuring, if only a partial one, came at the weekend when Mr Papaconstantinou discussed with eurozone colleagues the possibility of extending the maturity of bonds due to expire in 2012 and 2013 in agreement with investors.

Financial markets think a Greek default or restructuring will not undermine sentiment in the eurozone if a clear plan is laid out. Indeed, markets expect Greece will have to restructure its debts because its economy remains stuck in reverse and its public debt levels are too high.

However, if Greece abandons the euro, which would force a restructuring or default and leave investors facing big losses or haircuts on their bonds, confidence across the euro area could collapse. This could undermine Spain's bond markets and increase the risks it would need a rescue too. This could spark a sell-off across eurozone bonds and in the single currency.

"If the debate moves from orderly Greek debt restructuring - that markets have priced in - to one of disorderly Greek default - not priced in - then risks seem likely to come back with a vengeance," said Win Thin, currency strategist at Brown Brothers Harriman.

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Greek bail-out heads for revamp

Focus on difficulty for Athens to raise funds

Options include debt payment delays

By Peter Spiegel in Brussels and Kerin Hope in Athens

European officials are preparing to revamp Greece's bail-out package after concluding that Athens would be unable to raise money in the markets early next year, as envisaged under a €110bn rescue plan.

Eurozone ministers this week-end publicly acknowledged that Greece would probably need additional cash from the European Union or other international institutions.

"We think that Greece does need a further adjustment programme," said Jean-Claude Juncker, Luxembourg's prime minister and chairman of the eurogroup of finance ministers.

George Osborne, UK chancellor of the exchequer, said changes to the Greek bail-out programme were "inevitable".

Although such a conclusion had been widely accepted by analysts and officials working on the issue, the public recognition marks a turning point in the debate over Greece's future.

Officials involved in the discussions insist that no decisions on how further to help Greece have been made, though George Papaconstantinou, the Greek finance minister, said it could include additional assistance from the eurozone's €440bn bail-out fund or further delays in Greek debt payments.

"We now have to complete procedures for borrowing in

2012 and 2013 from the temporary European mechanism as markets continue to be mistrustful of us," Mr Papaconstantinou said, conceding Greece had dropped its plan to return to markets at the end of this year. Mr Papaconstantinou and Mr Juncker were speaking after they attended a previously undisclosed meeting on Friday in Luxembourg between a select group of eurozone finance ministers and top EU officials.

Greece needs to raise €25bn-€30bn next year to meet debt repayments that would not be covered by its current bail-out loan. In addition to selling bonds to the EU rescue fund, Athens could also propose a voluntary extension of maturities on debt due to expire next year, a Greek official said.

The option of restructuring Greek debt had been excluded, Mr Juncker said. Jean-Claude Trichet, European Central Bank president, and Olli Rehn, the top EU economic official, have concluded a restructuring would cause more problems than it would solve, a top official said.

Mr Juncker also dismissed rumours that Greece was mulling an exit from the eurozone - which unnerved the markets on Friday - as "stupid".

One senior European official involved in the meeting said Mr Papaconstantinou was invited so his fellow eurozone ministers could impress on him that Athens should stop seeking additional concessions without making greater efforts to implement a €50bn privatisation plan and crack down on tax evasion.

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Drop in oil prices may carry hidden dangers

Economic Outlook

EMILY KAISER
REUTERS

SINGAPORE After all the angst over pricey oil and the threat it posed to the global economy, it is hard to see the recent slide as anything but a welcome reprieve.

If it holds, the decline would increase consumers' discretionary spending power, calm inflation concerns and perhaps bolster confidence.

But it may also cool short-term demand. Fearful of further price increases, some U.S. businesses have rushed through orders and built up inventories. While that probably helped

Inflation may be calmed, but short-term demand could also end up cooling off.

lift exports in April from China and elsewhere, it may have come at the expense of orders and future shipments.

China is scheduled to release its trade data for April on Wednesday. Economists polled by Reuters are looking for an

increase of 29.4 percent in exports, a strong reading but a bit softer than the jump of 35.8 percent in March.

Recent reports showed inventories growing at U.S. manufacturing and services companies. One respondent in the Institute for Supply Management's survey of purchasing managers reported "buying ahead of cost increases." Another said "customers are rebuilding safety stock levels of inventory, and also trying to buy ahead of material price increases."

U.S. government data this week may support that anecdotal evidence. On Tuesday, a report on wholesale inventories is expected to show an increase of 1 percent for March, although sales are expected to rise even more quickly, which would ease concerns of an unmanageable buildup of stocks.

Thursday brings data on U.S. business inventories, which economists expect to show a rise 0.9 percent.

As long as consumers keep buying, a little extra inventory is not disastrous. Several U.S. retail chains recently reported solid April sales.

Economists expect the U.S. Commerce Department's retail sales report on Thursday to show an increase of 0.6 percent for April, which would be up a bit from March.

U.S. trade data for March arrive Wednesday and are likely to show that the deficit widened slightly, to \$47 billion, in part because of the rising costs of oil imports.

China reported in April a rare trade deficit for the first quarter, a point that Beijing will likely tout during the Strategic and Economic Dialogue in Washington this week as evidence that it takes seriously its pledge to refocus its economy toward domestic demand rather than exports.

But the deficit was largely because of the rising cost of commodity imports, not structural changes in the Chinese economy, so falling prices could trim the import bill and reverse the trend.

Trade and the value of the Chinese currency are regular topics of discussion when the United States and China meet, and this week will be no different.

Eswar Prasad, an economist at Cornell University in New York State, said talks on economic policy might soon be "overshadowed by the political calendars in the two countries, which herald a gradual hardening of positions and less room for maneuver on both sides."

President Hu Jintao of China and Prime Minister Wen Jiabao are expected to step down in late 2012, while President Barack Obama is up for re-election in November 2012.

"This makes it unlikely we will see any major policy shifts in the bilateral relationship, unless dictated largely by domestic political and economic circumstances," Mr. Prasad said.

While figures from the United States and China get most of the attention, another batch of trade data also bears watching.

Taiwan releases its April report on

Global economic indicators

Top economic releases expected this week, including the median forecast of analysts surveyed by Reuters and the last reported figure.

DAY	COUNTRY	INDICATOR	MEDIAN FORECAST	PRIOR PERIOD
Tue.	Italy	Industrial output* adjusted for March	0.5%	1.4%
Tue.	U.S.	Import prices* for April	1.8%	2.7%
Wed.	Germany	Inflation rate* final for April	0.2%	0.2%
Wed.	Britain	Trade balance for March (in billions)	-£7.25	-£6.78
Wed.	U.S.	International trade for March (in billions)	-\$47.10	-\$45.76
Thurs.	Britain	Industrial output* for March	0.8%	-1.2%
Thurs.	Euro zone	Industrial production* for March	0.3%	0.4%
Thurs.	U.S.	Producer prices* for April	0.6%	0.7%
Thurs.	U.S.	Retail sales* for April	0.6%	0.4%
Fri.	France	Gross domestic product preliminary† for Q1	0.6%	0.4%
Fri.	Germany	Gross domestic product flash† for Q1	0.9%	0.4%
Fri.	Euro zone	Gross domestic product flash estimate† for Q1	0.6%	0.3%
Fri.	U.S.	Inflation rate* for April	0.4%	0.5%
Fri.	U.S.	Reuters/Univ. of Michigan sentiment May preliminary	70.0	69.8

*Month over month. †Quarter over quarter

Economy watch

A snapshot of key figures for the world's largest economies.

COUNTRY	G.D.P. in billions in 2010	G.D.P. GROWTH Year over year	CURRENT ACC'T/G.D.P. in 2010	INFLATION Year over year	JOBLESS
United States	\$14,658	1.8%†	-3.2%	2.7%	9.0%
Euro zone	12,474*	2.0	-0.2*	2.8	9.9
China	5,878	9.7	5.2	5.4	4.1‡
Japan	5,459	-1.3†	3.6	0.0	4.6
Germany	3,316	4.0	5.3	2.6†	7.1
France	2,583	1.5	-2.1	2.2†	9.6
Britain	2,247	1.8	-2.5	4.0	7.8
Italy	2,055	1.5	-2.1*	3.0	8.3
Brazil	1,601*	5.0	-1.5	6.5	6.5
Canada	1,574	3.3†	-3.1	3.3	7.6
India	1,538	8.2	-3.2	9.0	n.a.
Russia	1,222*	4.5	4.1*	9.6	7.1
Mexico	1,039	5.5	-0.7*	3.0	4.6
South Korea	833*	4.2	3.9*	4.2	4.0

* Actual figures of 2009. † Harmonized figures. ‡ Quarter on quarter annualized. § Urban end March

Sources: Governments, I.M.F., World Bank

Reuters

Monday, which should provide more insight into how the effects of the March earthquake and tsunami are affecting Japan's trading partners.

"Events in Japan still pose downside

risks given that Taiwan imports a substantial amount of capital goods and high-tech electronics parts from Japan," Tomo Kinoshita, a Nomura economist, wrote in a note to clients.

U.S. has breathing room to reach a deal on debt

WASHINGTON

Crisis could be avoided by extraordinary steps, but interest cost may rise

BY BINYAMIN APPELBAUM

The U.S. government will not run short of money to pay its bills May 16, when the federal debt reaches the legal maximum of \$14.3 trillion.

Even after Aug. 2, the deadline the Treasury Department set this week for Congress to lift the borrowing limit, the government might be able to delay a crisis, perhaps even for a few months, through extraordinary measures like asset sales.

But with every passing week of political stalemate over the debt ceiling, the risk increases that investors will start to fret that the United States will not pay its debts and will demand higher interest rates for lending money to the U.S. government. Should that happen, the cost could be huge and the damage difficult to reverse.

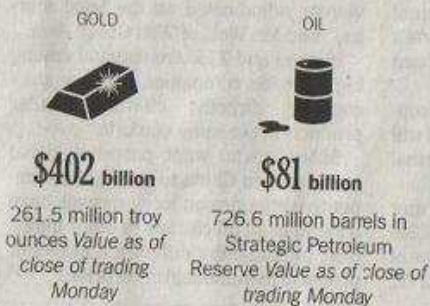
Debates over the debt ceiling have become a regular feature of political life in Washington. Congress has lifted the ceiling more than once a year, on average, over the past half-century — often just at the deadline. But the debt has never been so large, and the political climate has rarely been as contentious.

Republicans and some Democrats insist that an increase in the debt ceiling must be accompanied by concrete limits on spending, entangling an issue that requires urgent attention with a debate unlikely to be resolved before the 2012 elections.

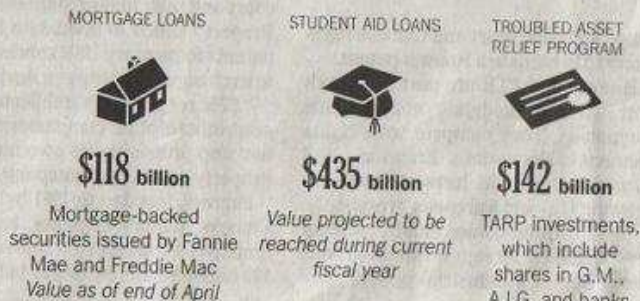
"When I talk to investors, their general reaction is they've seen this movie before. They expect that Congress will

The U.S. government's holdings

HARD ASSETS with a current value of **\$483 billion**



LOANS with a total estimated value of **\$923 billion**, including



"I think the important thing to do would be to make it clear to markets that the government is not going to default on its debt."

increase the debt ceiling," said Mary J. Miller, assistant Treasury secretary for financial markets. "But I'm concerned, because the stakes are higher here, and the amount of time we can buy with extraordinary measures is smaller."

The debt ceiling basically is the credit limit on the national credit card. The government hits the limit with some regularity because federal spending largely exceeds its revenue. Over the years, Congress always has raised the limit; after all, it ordered the government to spend the money.

When the current limit is reached May 16, after the Treasury completes its latest round of borrowing, the government will need to find \$125 billion a month to pay its bills.

The Treasury estimates that it can avoid a crisis until early August with

few, if any, lasting consequences by spending about \$100 billion in cash that it keeps on deposit with the Federal Reserve, the country's central bank, and by temporarily suspending \$232 billion in special-purpose borrowing programs so it can instead borrow money to finance general operations.

The Treasury secretary, Timothy F. Geithner, warned Congress in a letter in April that once those resources were exhausted, the government would be required to default.

"A broad range of government payments would have to be stopped, limited or delayed," he wrote.

A range of experts, including the Federal Reserve chairman, Ben S. Bernanke; former Treasury officials from both political parties; and economists from across the ideological spectrum, warn that missing payments would be catastrophic. In particular, they say, investors would view Treasury debt as risky and Washington would have to pay higher interest rates.

Many Republicans argue that the government could maintain the confidence of investors by prioritizing interest pay-

ments. There is ample revenue to make those payments, and the Republicans — also backed by economists and financial experts — say investors would not punish the government for failing to fulfill other financial obligations.

"I think the important thing to do would be to make it clear to markets that the government is not going to default on its debt," said Senator Patrick J. Toomey, Republican of Pennsylvania, whose bill assigns priority to interest payments.

Treasury officials respond that the failure to pay any obligations would set off a crisis.

Prioritizing interest payments would also require cutting spending immediately by much more than either party has ever proposed. The Congressional Research Service reported in February that the government would need to stop all discretionary spending and reduce payments in programs like Social Security.

So far, investors have shown no signs of concern. The market reaction to past standoffs suggests that investors have learned over time to ignore the theatrics in Washington.

Investors demanded risk premiums of as much as half a percentage point during a heated confrontation in 1995 and 1996 between House Republicans and the Clinton administration. They demanded smaller risk premiums during standoffs in 2002 and 2003, according to research by Pu Liu, a finance professor at the University of Arkansas. But during more recent standoffs in 2005 and 2006, Mr. Liu found no evidence of any risk premium.

Investors, he wrote, have taken to treating Washington "like the boy that cried wolf."

Of course, investors were more sanguine about risk in 2006 than they are now. But even if markets do remain calm, the cost of a standoff will rise sharply when the Treasury exhausts its current measures, expected near Aug. 2.

Then the government could stave off default for a time by selling assets at fire sale prices. The United States owns about \$402 billion in gold at prices set Monday and about \$81 billion in oil. It holds a portfolio of loans estimated to total \$923 billion by September, including more than \$100 billion in mortgage-backed securities it is selling slowly to investors, and more than \$400 billion in college student loans.

Administration officials, however, say such a move would amount to a modest grace period. It would not change the fundamental need to raise the debt ceiling.

A more likely approach would borrow a page from the administration of President Bill Clinton, which threatened in early 1996 to suspend Social Security retirement checks payments for a month.

Congress immediately passed special legislation permitting the government to borrow the necessary money without counting it against the debt ceiling for one month. One day shy of a month later, Congress permanently raised the ceiling.

Global warming is lifting food price

NEW YORK

BY JUSTIN GILLIS

Global warming is already cutting substantially into crop yields in some countries, to such an extent that it may be a factor in the price increases that have caused worldwide stress in recent years, researchers suggest in a new study.

Yields were down more than 10 percent in Russia and by a few percentage points each in India, France and China compared with what they probably would have been without rising temperatures, according to the study, to be published Friday in the journal *Science*.

Corn yields were off a few percentage points in China, Brazil and France from what would have been expected.

Some countries saw modest gains from the temperature increases, however. And in all agricultural countries, the additional carbon dioxide that humans are pumping into the air acted as a fertilizer that helped plant growth, offsetting some of the losses from rising temperatures caused by that same greenhouse gas.

Consequently, the study found that the global effect of climate change on crop yields was small: total yield losses of a few percentage points at most for wheat and corn, compared with what

they would have been without climate change. The overall effects on production of rice and soybeans was nearly nil, the study found.

But the authors of the study, David Lobell and Justin Costa-Roberts of Stanford University and Wolfram Schlenker of Columbia University, pointed out that temperature increases were expected to accelerate sharply in coming decades, making it likely that the effect on food production will worsen at a time when demand is expected to rise sharply.

Temperatures are already increasing briskly in many of the important agricultural regions around the world. A notable exception to that pattern is the

The effect on food production is expected to worsen at a time when demand is rising sharply.

United States. For reasons climate scientists do not fully understand, temperatures in the Midwestern corn and soybean belt during the summer crop-growing season have not increased in recent decades, defying the global trend.

"One way to think of it is that we got a pass on the first round of global warming," Mr. Lobell said.

But in almost all of Europe, large parts of Asia and some parts of Africa

s, study says

and South America, temperatures during the growing season have warmed an average of several degrees in recent decades, increasing the likelihood of extremely hot days when crops are in the ground.

Plants are known to be sensitive to high temperatures, especially if the hot days occur when they are flowering.

"The basic thing is to just understand how fast weather is changing in areas where people grow crops," Mr. Lobell said. "In many of these countries, a typical year now is like a very warm year back in 1980."

Wheat, rice, corn and soybeans account for the majority of calories con-

sumed by the human race, either directly or as meat raised on grains. Because demand for these commodities is inflexible and rising, the losses from higher temperatures probably accounted for price increases of about 6 percent in all four in recent years, the paper found.

"We aren't talking about the sky falling," Mr. Lobell said. "But we are talking about billions of dollars of losses. Every little bit of production is valuable when we're trying to feed the world."

If the price estimate is correct, it makes climate change a small contributor to a large trend. The prices of many foodstuffs have doubled or tripled in re-

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Global warming is lifting food prices, study says

WARMING, FROM PAGE 15

cent years as a result of a host of factors, including fast-rising food demand in Asia, government mandates to use crops for biofuel production and extreme weather events that may or may not be linked to climate change.

The new paper specifically excluded the effects of extreme weather because of limitations in the data that the scientists used. For that reason, Mr. Lobell said, the paper's estimate of the effect of climate change is probably conservative.

An economist who does similar work but was not involved in the paper, Michael Greenstone of the Massachusetts Institute of Technology, agreed that the estimate could be judged conservative.

Mr. Greenstone offered a criticism of the paper, saying it should have focused more on what climate change was doing to the costs of producing food.

Assuming that temperatures continue to rise, the prospect is not for food shortages, Mr. Greenstone said, but for higher prices that could hurt some of the

poorest people in the world.

The price increases of recent years were barely noticed in the West, where most people spend only a fraction of their incomes for food. But they have already destabilized governments in poorer countries, where people often pay half or more of their incomes for food.

Dozens of riots broke out around the world when prices first jumped substantially in 2008. Public anger over food prices also appears to have been a factor in the recent revolts in the Arab world.