

ECONOMICS**CHILE****Chile after the Quake – First Economic Analysis****Ernest W. (Chip) Brown**212-583-4663
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- **Preliminary estimates of economic damage from the February 27 earthquake put the loss of infrastructure, residential, and commercial capital at US\$15-30 billion, some 10-20% of GDP.**
- **Lost production because of physical damage could reduce March's GDP by over 1% y/y.**
- **The impact on year-long 2010 GDP will take more time to ascertain, although ballpark estimates suggest that an increase in rebuilding construction and services may fully offset losses of traditional industrial production.**
- **We expect inflation to increase initially and to be more volatile due to price increases in food and transport.**
- **The increase in inflation is supply shock-related. Therefore, we do not expect a reaction by the BCCh. Moreover, as consumption in the short term could be reduced by a negative wealth effect and the diversion of more consumer spending to investment as rebuilding commences, we expect the BCCh to delay an interest rate hike until 3Q10.**

On Saturday an 8.8 magnitude earthquake struck central Chile, mostly affecting the second-largest city, Concepción, and, to a lesser extent, the capital city of Santiago. The death toll currently is above 800. In general terms, big cities weathered the earthquake well, although there was significant damage to key infrastructure, including Santiago's international airport, the ports of San Antonio and Valparaíso, pulp facilities (which are mainly located near Concepción), and highways.

Electricity generation equipment is in relatively good condition, but there are some distribution problems in the south. The financial and banking system is operating. Copper production is likely to resume full operations in the next few days. Most of the industry's mines and its main ports are located in the north of the country, about 2,000 kilometers from the epicenter.

The situation in rural zones is dire. Near the epicenter, older buildings and homes in rural areas have collapsed, and in some coastal areas there is massive destruction due to a tsunami after the main quake that was responsible for a significant share of the death toll.

As much as US\$15-30 billion in damage

The damage from the earthquake is still being quantified, but there is no doubt that it will be significant. Initial projections referred to a capital loss of 10%-20% of GDP (US\$15-30

billion), mostly based on damage to real estate, hospitals, and the transport system. The National Association of Insurance Companies said that the earthquake could cause US\$2.6 billion in insured damage, with total damage possibly reaching US\$30 billion. The initial estimates notwithstanding, some recent reports point to a lower value. There are reports now of 200,000 homes with serious damage, which is lower than the initial estimates. If we assume US\$15,000-20,000 per home (considering that normally these houses were located in poor areas), damage to housing could reach US\$4 billion.

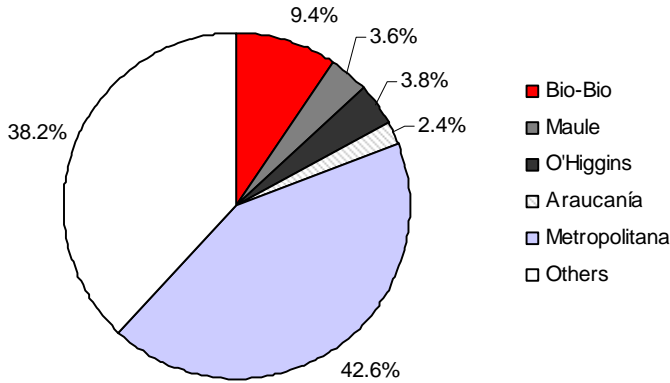
March's GDP to decrease at least 1% y/y

Although the damage to the *stock* of infrastructure, commercial, and real estate capital could reach 15% of GDP, it is important to remember that GDP is a *flow* measure. Thus, damage to infrastructure does not directly affect the level of GDP. For example, if an industry halts its production due to damage, GDP growth is affected by the lower output, not by the damage to infrastructure.

About 13% of Chile's GDP is produced in the most affected regions (Bio-Bio and Maule). Industrial activity represents close to 33% of total GDP in the area. More specifically, **close to 25% of Chile's industrial GDP comes from this area**, mainly from sectors such as pulp, forestry, fishing, and other manufactured products.



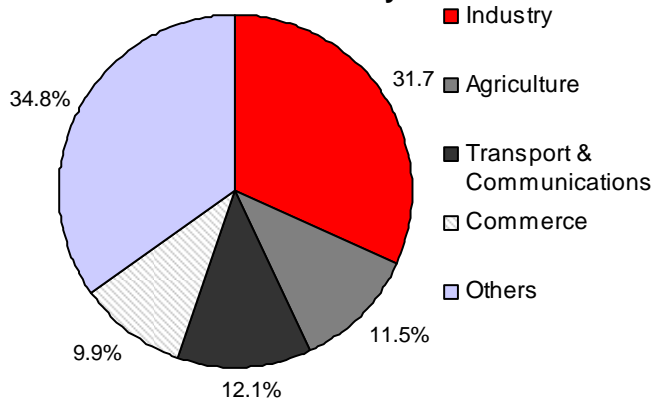
GDP by regional division, 2006



Sources: Central Bank and Santander.

The following graph shows the composition from a supply perspective of the GDP in Bio-Bio and Maule.

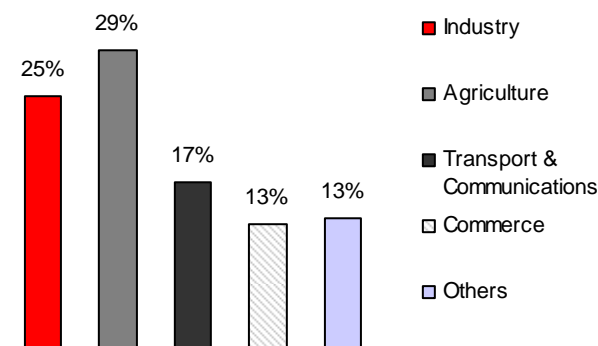
GDP Bio-Bio and Maule, by economic activity



Sources: Central Bank and Santander.

The next graph shows the relative importance of the sectors, showing that about 25% of the Chile's industry production is produced in the area. In the case of agriculture, the proportion produced in the region is 29%.

Relative weight of GDP Bio-Bio and Maule (area GDP/ national GDP, by sectors)



Sources: Central Bank and Santander.

In order to gauge the economic impact of the earthquake, we assume the following:

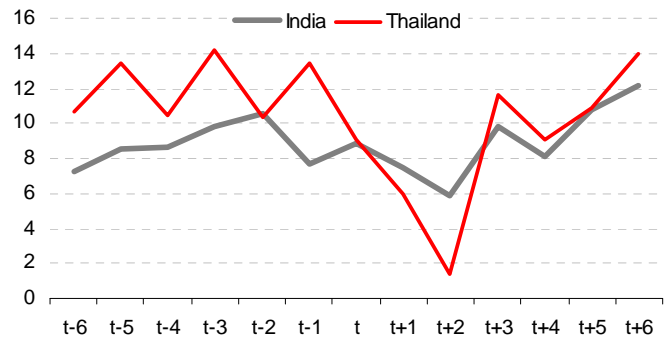
(1) A loss of 80% of the industrial production in the Bio-Bio and Maule area in March, with a partial resumption toward the end of 2010; and

(2) A 20% hit to the output of the rest of the economy in the area.

Under this scenario, we expect March's industrial production to decrease by at least 10% y/y. In addition, as the activity in the rest of the country, especially in Santiago, was also affected, we could expect March's overall GDP to decrease at least 1% y/y. Before the quake, we were estimating March's GDP to expand at a 5.5-6.0% y/y rate.

Industrial production is usually also affected after earthquakes due to damaged infrastructure and problems at ports and roads. The following graphs show industrial production in Thailand and India after the earthquake of December 2004.

Industrial production, y/y, Dec. 2004 Indian Ocean earthquake



Sources: Bloomberg and Santander.

In the rest of 2010, we expect industrial production in Bio-Bio and Maule to recover, but to settle in at a lower rate than we saw in February, due the damage to infrastructure. Thus, we expect industrial production to be flat in 2010 as a whole (we were expecting it to increase 5%), although we expect it to recover strongly, as infrastructure problems are largely resolved, in 2011.

Annual GDP may not be affected

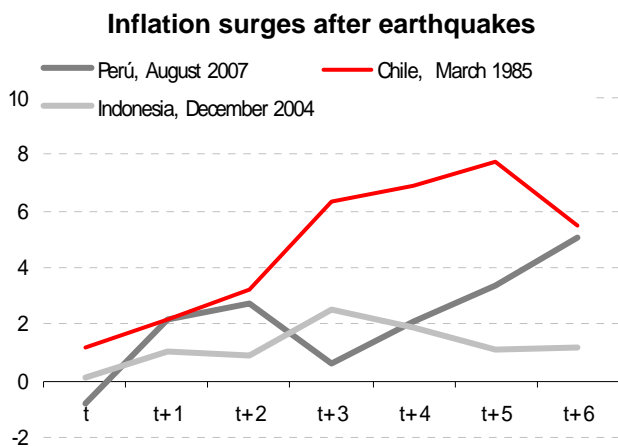
With regard to the impact on annual GDP, we note that although industrial production is expected to be lower, there is also likely to be a sharp pick up in construction and other service activity. If rebuilding efforts are strong and rapidly executed, overall 2010 GDP growth could even exceed our previous estimate. For example, if the construction sector increases 14% y/y in 2010, double the level we previously expected, we calculate that 2010 GDP growth could reach 5.1%, in line with our pre-quake estimate.



Inflation higher, more volatile in the short term

There could be some pressure on inflation in the short term due to shortages of food and other goods. In addition, as the National Institute of Statistics is now using a nationwide CPI, in which Concepción has a significant weight, there could be an increase in volatility. This impact is likely to vanish in the medium term as the rebuilding efforts resolve supply problems. Before the quake the Chilean economy had a substantial output gap due to the 2009 recession. This implies that an output shock now, post-quake, has more room to be absorbed without generating inflation pressures.

An increase in inflation has been observed in other earthquake episodes in Chile and elsewhere. The following graph shows the difference of the annual CPI following an earthquake compared with the three-month moving average of the month before.



Sources: Bloomberg and Santander. Compares monthly inflation with average inflation in the months before an earthquake in three countries, all at annual rates.

With regard to monetary policy, we believe the expected rise in short-term inflation will not prompt the Chilean central bank to hike interest rates. Their longer-term view of inflation, coupled with downward pressure on consumption demand due to a negative wealth effect (the lost value of housing) together with more consumption spending being diverted to investment will likely convince them to keep rates lower for a longer period.

Nevertheless, in the medium term, as the quake may have implied a narrowing of the output gap due to a supply shock, we believe the BCCh will monitor inflation expectations closely in their 24-month policy horizon. We expect the BCCh to keep the benchmark interest rate at its minimum of 0.5% until 3Q10, and to finish 2010 closer to 2.0% than 2.5%, which was our previous estimate.

Looking longer term, we believe the Central Bank may face two inflation forces: (1) an economy pushed by higher public and private spending, and (2) a smaller output gap due to the loss of capital (infrastructure). Thus, **the Central Bank may decide to tolerate higher inflation pressures in the medium term in order to normalize the monetary impulse.**

Possible government measures

In our view, the government will face increasing financing needs, with significant fiscal spending on rebuilding efforts amid lower fiscal revenues. The government has announced the temporary end of property taxes in the area and a delay in VAT collection.

In our opinion, the first measure to be expected might be the approval of an immediate 2% increase in the fiscal budget (US\$900 million), which is permitted by the Constitution in case of national emergencies.

Recall that although further increases in fiscal expenses have to be approved by Congress, the Chilean government has a very robust fiscal position and should easily be able to afford rebuilding expenses. The Treasury is a net creditor (close to 10% of GDP), which is reflected in a sovereign risk (measured by CDS) as low as 50-70 bps in recent sessions, allowing Chile to access international credit at a low cost. In addition, Chile's sovereign wealth fund (SWF) (the social and economic stabilization fund) amounted to US\$11.3 billion as of December 2009.

We believe that if the government needs to finance extraordinary expenses, the main ways could be by issuing external debt and using the SWF. Public external debt reached only US\$2.5 billion (1.5% of GDP) as of December 2009. Domestic issuance is unlikely, as it could add pressure to local rates, affecting local financial conditions, which are also key to the recovery efforts. In order to account for the impact on the CLP, in 2009, when the government announced the sale of US\$3 billion and US\$4 billion, the CLP appreciated 3% and 2%, respectively, on the day following each announcement.



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