# Terms of trade, commodity prices and inflation dynamics in Chile[1]

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## 1. Introduction

Commodity prices, terms of trade and real wages play significant roles in shaping the inflationary dynamics and persistence of prices in small open economies. The Chilean economy is a case in point. A small and very open economy, with a structure of production starkly different from the structure of demand, the Chilean economy is subject to the effects of significant shocks to commodity prices.

On the production side, Chile's endowment of copper is sizeable (both in absolute terms and in relation to the world markets), while the rest of the export basket is heavily tilted towards exports of raw or processed natural resources. On the demand side, firms and households import a significant part of their intermediate inputs (particularly fuels), machinery and equipment, and durable goods. The above, coupled with a general policy conducive to free trade and with fairly reduced public intervention in the distribution and retailing of goods and services, imply that shifts in commodity prices are fed through the economy rather rapidly, affecting the allocation of production and demand, as well as changing cost pressures and hence, inflationary dynamics.

This paper presents, in a stylised way, how the Central Bank of Chile has undertaken the task of understanding these different channels. Given the existence of nominal rigidities, changes in the structure of production and demand will have an impact on the economy's degree of slack, and hence will affect inflationary pressures as well as nominal and real wages. Commodity prices, particularly those that affect the local energy prices, will generate supply shocks that ripple through the cost structure of the economy and potentially affect expectations and the inflationary process over and above its direct impact. These changes in relative prices also have a bearing on the real exchange rate, thus potentially dampening the effect on the real economy but itself adding to the cost shifts.

To assess the proper conduct of policy, given the forward-looking character of monetary policy in an inflation targeting framework, as well as the large swings in commodity prices that we have witnessed in the past few years, we need to develop a structural view of the transmission mechanism of commodity prices to inflation dynamics. Small, semi-structural models fall short, requiring the construction and simulation of models that render in richer detail the production and demand structure of the economy.

The rest of the paper is structured as follows. The next section presents a brief description and outline of the structure of production and demand, highlighting the relevant role played by mining and other natural resource sectors. The different dynamics of a set of price deflators are also shown, particularly the differences between CPI inflation and the annual inflation of the GDP deflator. The movements of the real exchange rate and the terms of trade are also shown. The third section brings these issues together in a version of the *Model for Analysis and Simulation* (MAS), a DSGE model of the Chilean economy that is now routinely used in monetary policy discussions. The fourth section subjects this model to a number of shocks, namely oil price and copper price shocks, and the monetary policy

[1] Prepared for the BIS Annual Meeting of Deputy Governors, 5–6 February 2009.

response to each of them is analysed, conditional on the degree of credibility of the inflation target and the behaviour of the fiscal authority. These exercises help to highlight the transmission mechanism of these different shocks to inflation, taking into account the multi-sectoral nature of the Chilean economy, the role of the real exchange rate, and real wages. The fifth section describes recent developments in the inflationary dynamics in Chile. The final section presents some tentative conclusions.

## 2. Economic structure, relative prices and inflation

Table 1 presents a broad outline of the sectoral structure of the Chilean economy, in current US dollars for the most recent year for which detailed national accounts data are available (2006). Several features are noteworthy. On the production side, the intensity of natural resources is readily apparent. Mining, farming and fisheries, for instance, account for 22% of total domestic supply, without considering the part of manufacturing that is related to natural resources. Imports of mining, farming and fisheries represent only 12% of the total supply (net of markups) of these sectors. Conversely, on the demand side, a large fraction of the demand faced by these sectors is represented by exports: 62% of total demand, and a significant 92% if only exports and final domestic demand are considered.

From this perspective, manufacturing provides an interesting counterpoint. A large fraction of total supply is provided by imports (28%), while only close to one-half (15%) of total demand arises from exports. Note that petroleum and chemical products, a sector where local production is dwarfed by imports, is included within manufacturing.

Table 1

**Production and demand structure (US$ million, 2006)**

| **Farming and fishery** | | **15,549** | **Farming and fishery** |
|---|---|---|---|
| domestic supply | 11,880 | 7,289 | intermediate consumption |
| imports | 733 | 5,004 | exports |
| markup | 2,936 | 3,257 | final domestic demand |
| | | | |
| **Mining** | | **50,576** | **Mining** |
| domestic supply | 43,348 | 14,255 | intermediate consumption |
| imports | 6,964 | 36,265 | exports |
| markup | 264 | 56 | final domestic demand |
| | | | |
| **Manufacturing** | | **112,779** | **Manufacturing** |
| domestic supply | 57,079 | 46,179 | intermediate consumption |
| imports | 31,787 | 17,225 | exports |
| markup | 23,912 | 49,375 | final domestic demand |
| | | | |
| **Other sectors** | | **145,220** | **Other sectors** |
| domestic supply | 133,948 | 64,896 | intermediate consumption |
| imports | 6,757 | 8,481 | exports |
| markup | 4,515 | 71,843 | final domestic demand |
| | | | |
| **Total** | | **324,124** | **Total** |
| domestic supply | 246,255 | 132,618 | intermediate consumption |
| imports | 46,242 | 66,975 | exports |
| markup | 31,627 | 124,531 | final domestic demand |

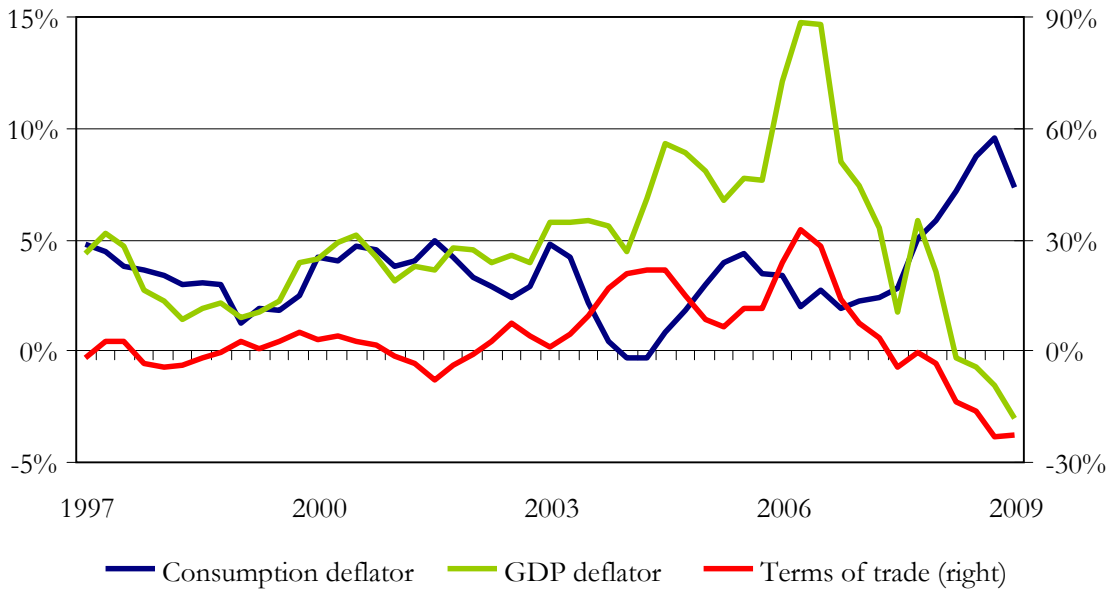
Other, non-traded sectors share the usual characteristic of being mostly supplied and demanded locally. Overall though, they represent less than half of total demand and supply in the Chilean economy, again underscoring the relevance of primary and tradable sectors, mostly linked to natural resources, in the sectoral structure of the economy.

These structural peculiarities make the one-sector/one-good paradigm particularly limited as a representation of the different linkages and sectoral relationships of the Chilean economy when modelling inflation and output. The fact that the domestic demand bundle differs from the production bundle naturally leads to different – but likely related – price dynamics between the production and consumption baskets. Figure 1 presents the annual change in the GDP deflator, the private consumption deflator, and the terms of trade. As can be seen, the dynamics of the GDP and private consumption deflator differ markedly, due to the large terms of trade swings that affect the Chilean economy, and the small representation of exportable goods in the consumption basket.

Figure 1

**GDP and consumption deflators, and terms of trade**

(year-on-year percentage change)



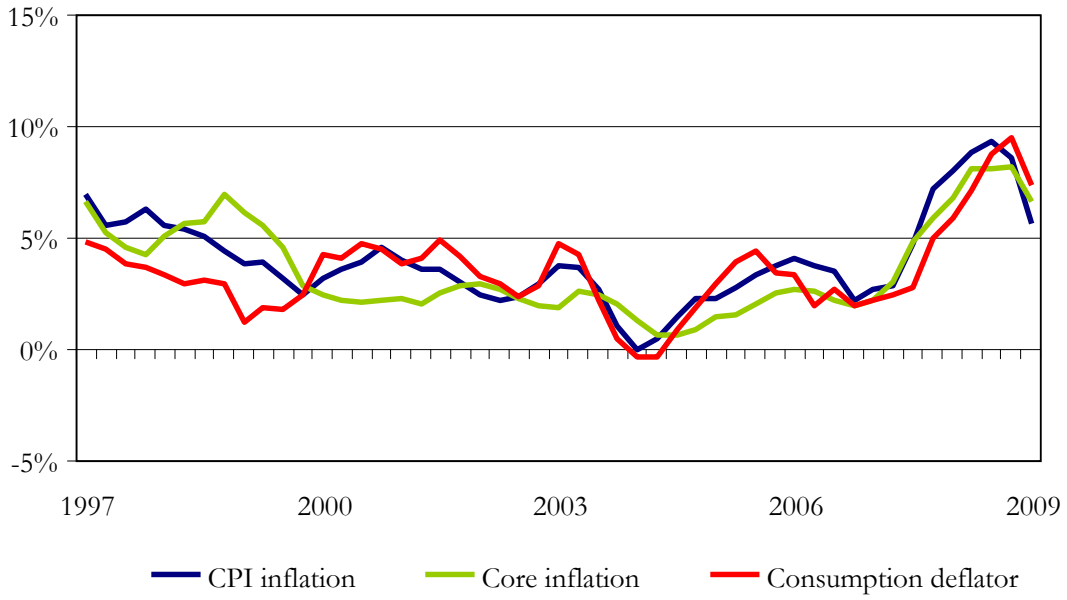

From 1997 to early 2003 the annual fluctuations in the terms of trade were rather limited (but not muted), at around +/- 10%. Over that period, it can be seen that private consumption deflator and the GDP deflator fluctuated closely, at or below 5% annually. In contrast, from late 2003 onwards, large swings in the terms of trade led to a sharp dissociation of the consumption deflator and the GDP deflator. The latter followed the swings in the terms of trade, as can be seen in 2006 when the GDP deflator increased 15%, while the terms of trade rose 30%, both on an annual basis.

The private consumption deflator, on the other hand, does not follow the swings of terms of trade, and shows what seems like a countercyclical fluctuation: deceleration at a time of terms of trade gains, and acceleration as the terms of trade moderate. This pattern is more striking from early 2004 onwards, when gains in terms of trade coincided with a deceleration in the private consumption deflator. Figure 2 shows that the evolution of the consumption deflator is similar to the CPI inflation readings, both headline and core.

Figure 2

**Consumption deflator and CPI inflation**

(year-on-year percentage change)




The natural link between consumer price inflation and the terms of trade is, of course, the real exchange rate. As a commodity exporting economy, the linkage between the real exchange rate and the terms of trade has been widely researched and documented.[2] This link, however, seems to have grown weaker over time, thanks to an increased diversification of the export base, and also in response to an enhanced macroeconomic framework, which allowed, for instance, the insulation of fiscal policy from copper income shocks, as well as a floating exchange rate regime that now bears the brunt of the adjustment to changes in external conditions. Thus, although the sensitivity of the overall economy to terms of trade shocks is likely to have diminished, this is not necessarily the case with respect to the exchange rate, particularly given the huge swings that the prices of copper and oil have experienced in the near past.

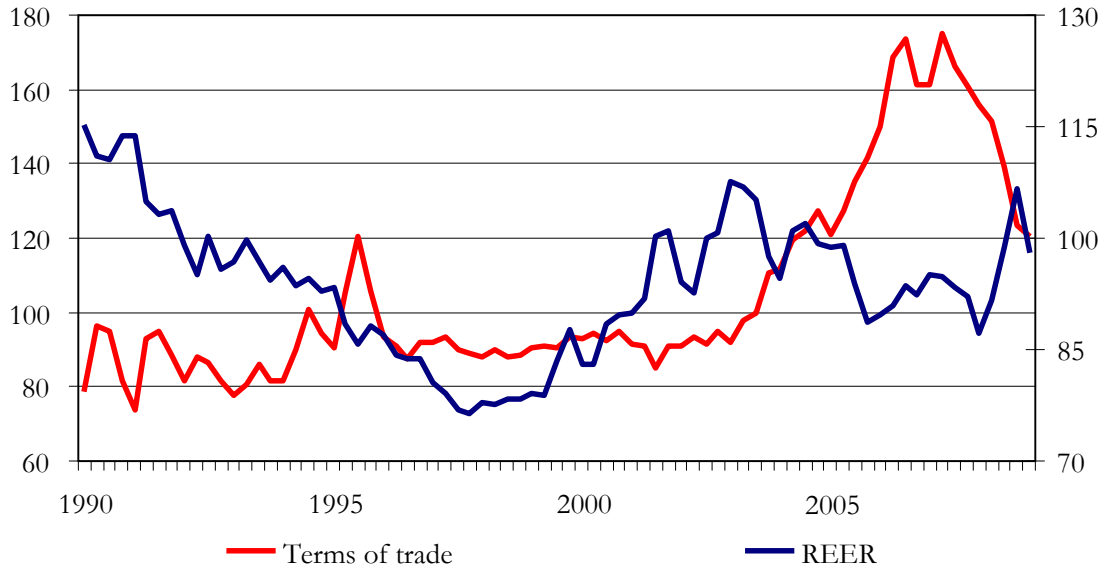
Figure 3 shows the path followed over the last decade and a half by the real exchange rate and the terms of trade. Although a link is hardly evident, in recent years it appears that swings in the real exchange rate are related to changes in terms of trade. This association would help to explain the gap between terms of trade changes and domestic consumption behaviour.

[2] See Caputo and Nuñez (2008), and Cerda, Donoso and Lema (2005), amongst others.

Figure 3

**Terms of trade and the real exchange rate**

(index, sample average = 100)




## 3. A structural model of the Chilean economy

In order to understand from a general equilibrium perspective the impact of commodity price shocks on different macro variables, we analyse the impulse-response functions to commodity price shocks derived from a structural DSGE model for a small open economy.

The model is a small open economy model in the spirit of Christiano, Eichenbaum and Evans (2005), Altig et al (2004), and Smets and Wouters (2003). The economy includes two types of households: Ricardian (optimising, forward-looking) households that make choices about consumption and borrowing, and set wages; non-Ricardian households that consume all their labour income and neither save nor borrow. Production technology uses labour, capital and oil. Both prices and wages are sticky (subject to nominal rigidities à la Calvo), with partial indexation to past inflation. There are adjustment costs to investment, and the pass-through from the exchange rate to the domestic price of imports is imperfect in the short run. The model also includes a commodity sector whose production – based on natural resources – is completely exported. This sector is meant to characterise the copper sector in the Chilean economy. Monetary policy is conducted through a policy rule for the interest rate, while fiscal policy is conducted through a structural balance rule. A brief summary of specific aspects of the different building blocks of the model is given below (for specific details, see Medina and Soto (2007a)).

### 3.1 Households

The domestic economy is inhabited by a continuum of households. A subset of the households is Ricardian, with full access to capital markets to smooth consumption. These households make consumption and savings decisions that maximise their expected utility. The remaining subset is composed of non-Ricardian households without access to capital markets. These households consume all of their after-tax disposable income in every period. We also assume that all households exhibit habit formation in their preferences. This means

that consumption evolves slowly over time in response to shocks. Each household consumes a basket composed of three types of final goods: domestic goods, foreign goods and oil (fuel). The composition of this basket is determined optimally by minimising its cost.

Each household is also a monopolistic supplier of a differentiated labour service, and sets wages in a staggered way. In each period, each household faces a probability of being able to re-optimise its nominal wage. A household that is able to re-optimise its wage at *t* will maximise the expected discounted future stream of labour income net of the disutility from its work effort, subject to labour demand and to an indexation rule in case it cannot re-optimise in the future. This process determines a slow adjustment for nominal wages in response to shocks.

### 3.2 Investment process

A representative firm rents capital goods to firms producing intermediate goods, and decides how much capital to accumulate each period. The firm may adjust investment each period, but changing the flow of investment is costly. This assumption provides a tractable approach to modelling investment inertia (see Christiano, Eichenbaum and Evans (2005)). The firm chooses the level of investment, and the rental price of capital, to maximise its expected future profits (rental returns on capital net of the cost of investment), subject to the law of motion of the capital stock, which accounts for depreciation and investment adjustment costs.

### 3.3 Domestic production

Domestic goods are produced by firms with monopoly power over particular varieties of these goods. These firms maximise profits by choosing the price of their differentiated good subject to the demand they face, and the available technology. The technology to produce a particular good is a function that combines capital, labour and oil. Since oil is an imported intermediate good, it does not add to the value added in production. The value added is given by a Cobb-Douglas function with capital and labour. The technology for gross output combines value added and oil with an elasticity of substitution between them that is less than one.

Price setting is assumed to follow a Calvo-type structure. In every period, the probability that a firm is able to adjust its price is fixed, and is the same for all firms, independent of their history. If a firm does not receive a signal, it indexes its price following a simple rule that weights past inflation and the inflation target set by the central bank. Given this pricing structure, the behaviour of inflation is captured by a new-Keynesian Philips curve with indexation. In its log-linear form, inflation depends on last period's inflation, expected inflation in the next period, and marginal costs.

We also assume that a single firm produces a homogeneous commodity good that is completely exported abroad, e.g. copper. Production requires no labour or capital. Production in this sector can be interpreted as the exogenous evolution of an endowment of natural resources. The price of this commodity is determined in the world market.

### 3.4 Fiscal and monetary policies

In the baseline case, the model assumes that the government follows a structural balance fiscal rule (see Medina and Soto (2006b)). The purpose of this fiscal rule is to avoid excessive fluctuations in government expenditure stemming from transitory movements in fiscal revenues. Government expenditure can increase if the long-run price of copper rises, or if potential output growth increases. In the case of a transitory rise in fiscal revenues from a copper price increase, the rule implies that the additional fiscal income should mainly be

saved. The same happens with extra revenues collected from a transitory expansion in output beyond potential.

Monetary policy is characterised as a simple feedback rule for the real interest rate. We assume that the Central Bank responds to contemporaneous deviations of core inflation from the target of 3% and also to deviations of output from its trend. In the model, core inflation corresponds to a linear combination of the inflation of domestic goods and the inflation of imported goods, excluding oil. While it is true that the target for the Central Bank is defined in terms of headline CPI inflation, its intermediate objective is to keep expected inflation on target. In the case of open economy DSGE models, it has been shown that expected inflation rules tend to render the model undetermined (see Batini and Pearlman (2002)). In order to avoid such a problem, the model assumes that the Central Bank reacts to contemporaneous deviations of trend inflation – proxied by core inflation – from target.

## 4. Macro responses to commodity price shocks

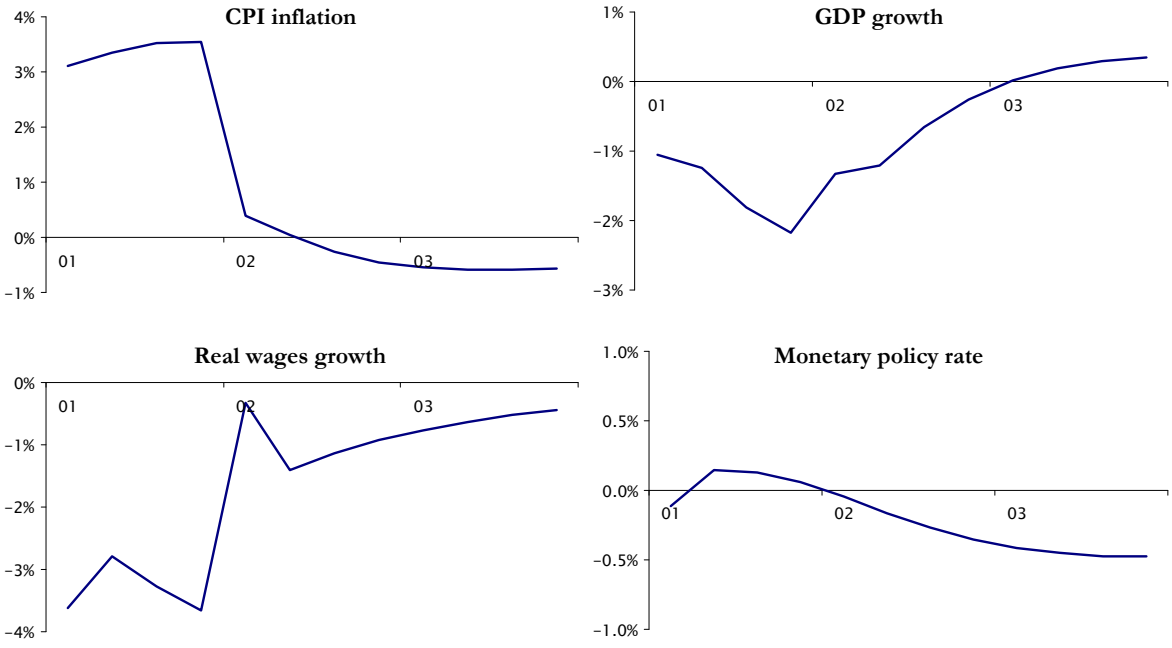
### Oil price shock under perfect credibility

We analyse first the responses to an oil price shock under perfect credibility regarding the target of the monetary policy. The shock corresponds to an increase of 100% in the real price of oil (nominal price of oil in US$ deflated by the international price level).

Figure 4

**Quarterly impulse response to an oil price shock under perfect credibility**

(year-on-year percentage change from steady-state)




Results are depicted in Figure 4. Since oil is part of the consumption basket and thus enters directly into the measure of the price level relevant for consumption, an oil price shock generates an immediate increase in CPI inflation. It also affects inflation indirectly through its impact on marginal cost faced by domestic firms. Since prices are sticky, this increase in

marginal cost is not completely transferred to prices, and markups shrink. This leads to a contraction in activity of almost 2% within a year of the shock.

Notice that the contraction in activity implies a reduction in labour demand, which in turn requires an adjustment in real wages. This variable actually falls in response to the shock and remains below trend for several quarters, even after inflation has converged back to target after a year.

The monetary policy response to the shock is initially an increase in the policy rate, followed after two quarters is by a rate reduction below the neutral rate. The muted increase in the policy rate despite the relatively large increase in CPI inflation is due to the fact that the shock is transitory and that the policy is credible. The subsequent lowering of the policy rate is required in order boost demand so that output returns back to trend.

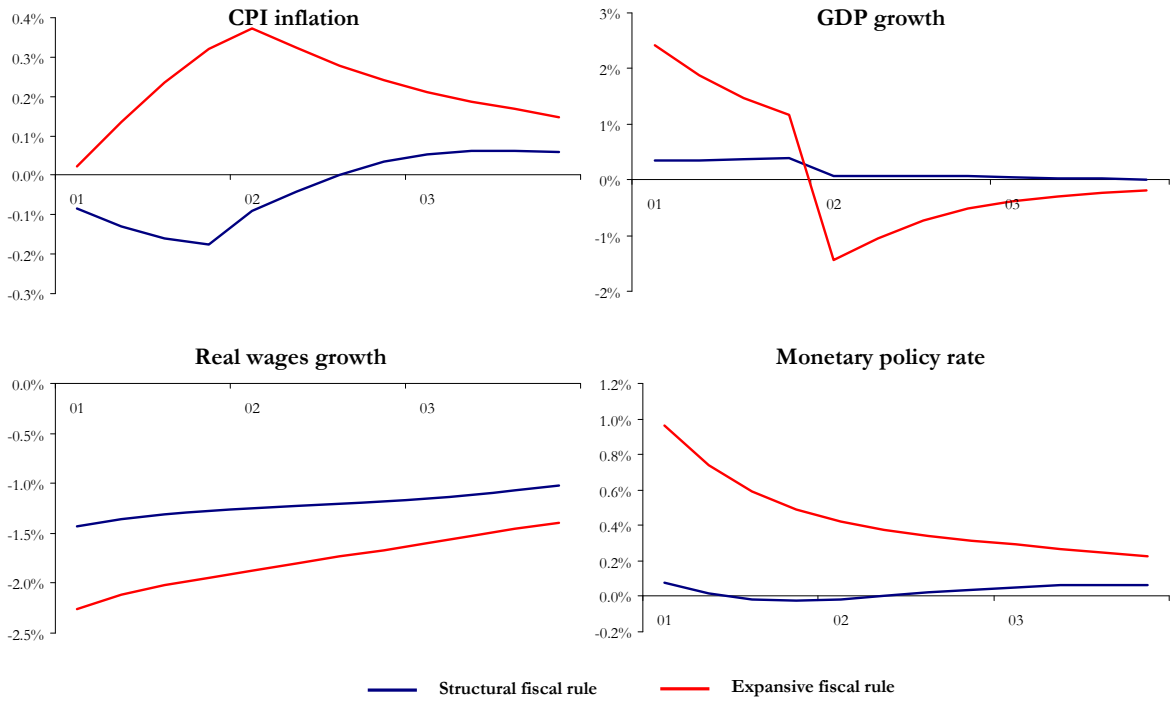
### Copper price shock under alternative fiscal policies

As mentioned above, the baseline case scenario considers a fiscal policy that follows a structural rule, which is intended to replicate the policy rule being followed by the Chilean government since 2001. We use the model to ask ourselves what would have happened in the economy if, instead of following this rule, the government had followed a procyclical pattern, increasing expenditures one to one with a copper price shock.

Figure 5

**Quarterly impulse response to a copper price shock under alternative fiscal policies**

(year-on-year percentage change from steady-state)




The results of this exercise are reported in Figure 5. The most striking difference in the responses of the main macro variables to the copper price shock under alternative fiscal policies is regarding inflation. When the government raises its expenditure in response to the windfall gains from copper, there is a large increase in demand, and output rises. As a result, inflation increases and the real exchange rate appreciates significantly.

When the government follows the structural rule, instead, most of the windfall gain is saved. The currency appreciates since the net foreign asset position of the country improves. The appreciation of the currency leads to a fall in the inflation of imported goods, and total CPI also decreases.

This sharp contrast in the response of inflation to the copper price shock leads to a very muted monetary policy reaction. In the first case, when the government follows a highly expansionary fiscal policy, monetary policy needs to be tightened strongly. In contrast, if the government follows the structural rule, the monetary policy does not need to respond.

### Oil price shock under imperfect credibility

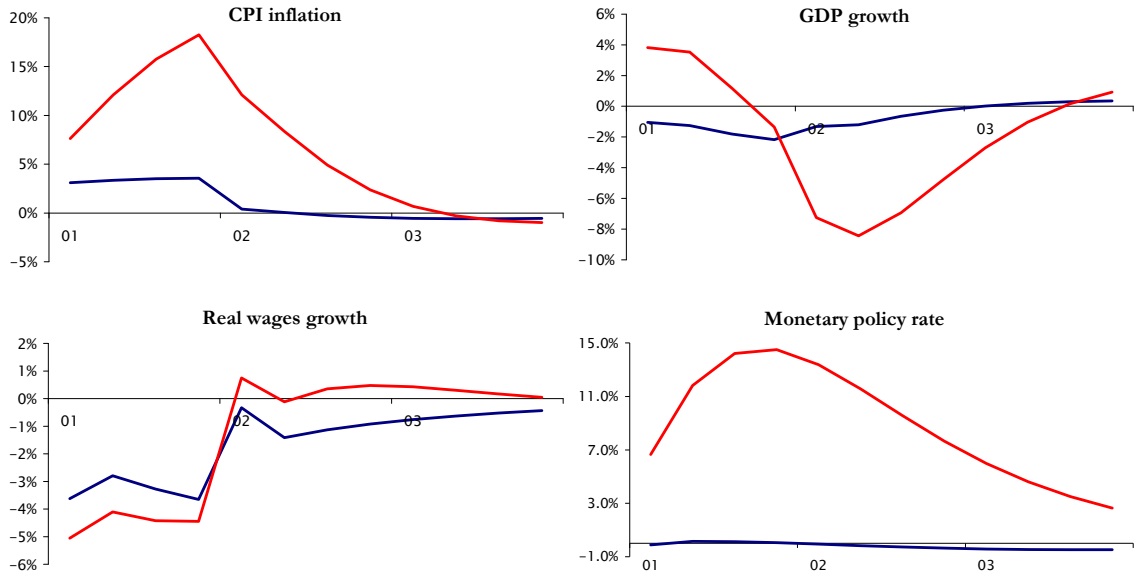
Now we turn to the case of imperfect credibility regarding the objective of monetary policy. In order to analyse this case, we assume that private agents assign certain probability that the Central Bank will transitorily deviate from its target. More precisely, since the oil price shock leads to a temporary increase in inflation, we assume that private agents believe that part of this increase is due to a relaxation of the target by the monetary authority, while in fact it is not.[3]

When the monetary authority lacks credibility, an oil price shock leads to a much larger increase in inflation. Inflation not only rises by more when credibility is imperfect, it is also much more persistent in response to the shock.

Figure 6

**Quarterly impulse response to an oil price shock under perfect and imperfect credibility**

(year-on-year percentage change from steady-state)




Note that, initially, output may grow above trend during some quarters. This is due to the fact that the real interest rate (not shown) falls during the first quarters after the shock, because the nominal interest rate has not increased as much as necessary to compensate for the

[3] This exercise is taken from Medina and Soto (2008).

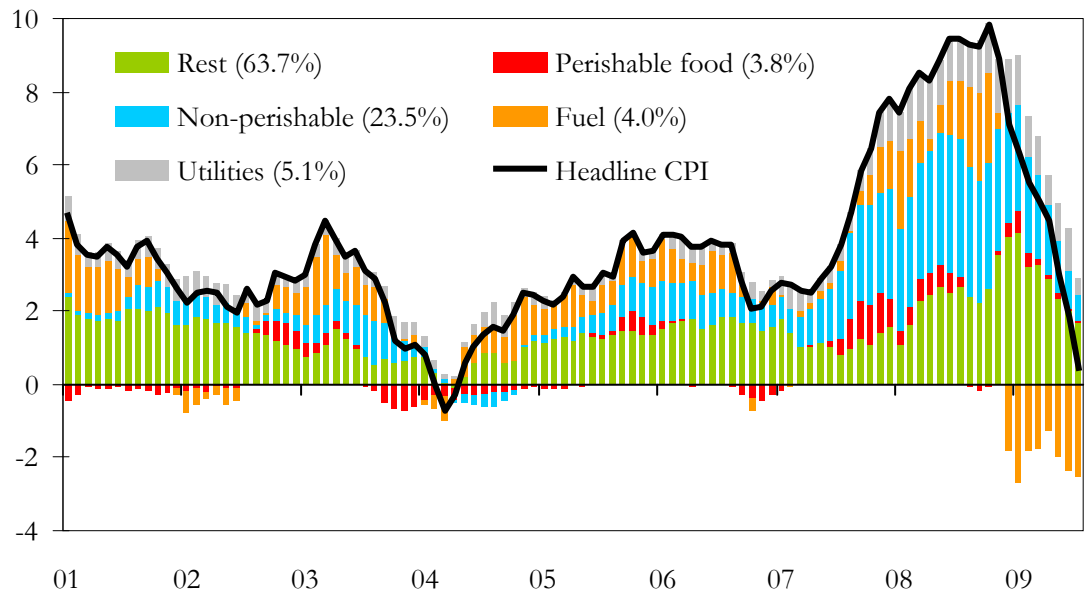
surge in inflation. After a few quarters, the monetary authority tightens even further, and succeeds in inducing an increase in the ex-ante real interest rate above the neutral rate. This creates a contraction in activity that is much stronger than in the case of perfect credibility. This is the only way the Central Bank can bring expectations back in line with the target in order to reduce inflation. In sum, if the monetary authority lacks credibility it will face a more serious trade-off between stabilising output and inflation. As a result, the sacrifice ratio will also be larger.

## 5. Recent inflation trends in Chile

The inflation process in Chile has shown dramatic changes in the past year and a half, thanks to significant swings in the international prices of food and energy, and their various implications on the price setting behaviour of domestic agents. By mid-2007, inflation surprises in energy and foods showed that the pass-through of international prices to local prices was proceeding quickly, and in August 2007 annual inflation breached the high end of the Central Bank's tolerance range (4%) and kept increasing, reaching close to 8% by year-end. This process was further exacerbated by the significant impact of local weather conditions (ice storms in springtime) on the prices of perishable foods, which contributed to a significant hike in non-core inflation. Also, the regulatory environment implied that the higher costs of energy generation, resulting from an increase in the likelihood of a drought in 2008, and hence of a lower contribution of hydroelectric power, along with higher energy prices and the scarcity of imported gas, led to significant increases in residential tariffs.

Figure 7

**Incidence in headline inflation**



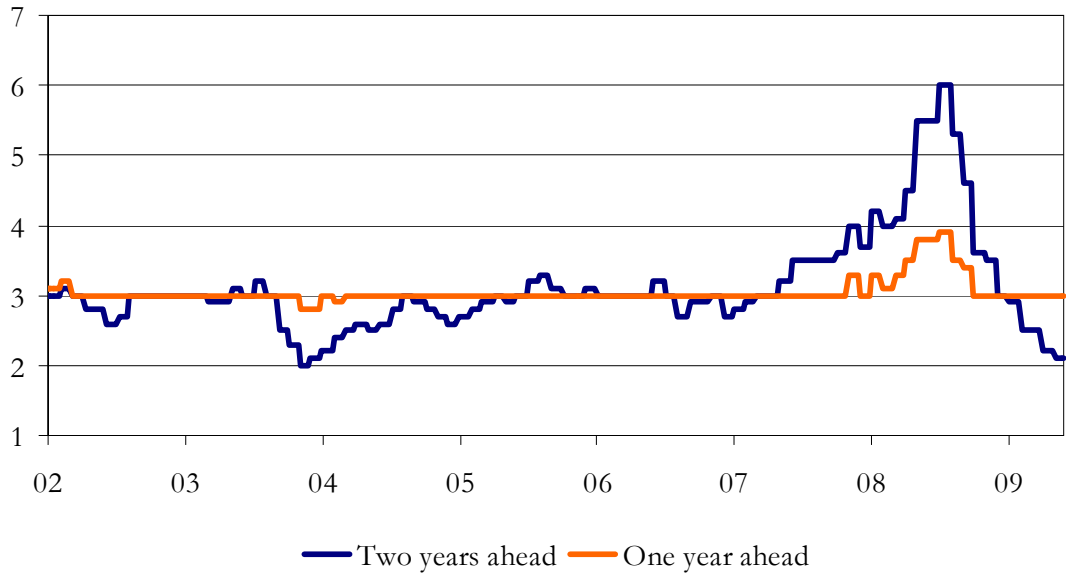

Over this period (late 2007), however, the broadly held view was that the inflation spike was merely a supply side shock derived from higher international prices and specific domestic factors, but where no generalised inflation pressures were evident. The bulk of the argument regarding this point relied on the stability of inflation expectations up to that point. Although one-year-ahead expectations had showed a small increase, they nevertheless implied a very quick convergence to the target over 2008 and early 2009. Moreover, with the exception of perishable foods, energy and tariff components, core measures of inflation had been

remarkably resilient to the sharp spike in headline inflation. The official forecast for inflation presented in the Inflation report of early 2008 considered that by the end of that year inflation would have fallen to slightly below 5%.

Over the first quarter of 2008, the inflation prospects became more uncertain. On the one hand, the incoming data on headline inflation was somewhat reassuring, in that no evidence was available of further large surprises on that front and data on wages and indexed prices did not show an abnormally large response to the higher inflation of 2007, as a propagation on core components of inflation was expected to occur anyway. The significant appreciation of the nominal exchange rate, due to the swings in currency markets over the initial period of the global financial crisis in late 2007 and early 2008, indicated lower inflationary pressures in the medium run. On the other hand, inflation expectations remained stubbornly sticky at levels higher than the official forecasts, and breakeven inflation rates kept on creeping upwards. In this complex macroeconomic environment, the Board of the Central Bank held the policy rate constant and actually initiated a programme of reserve accumulation in April 2008 to increase the insurance against a further deterioration of the global financial environment. The monetary policy report of May 2008 presented forecasts for inflation that still considered a somewhat rapid convergence to the target and thus the bias on the policy stance was starkly neutral.

Figure 8

**Expected inflation – monthly survey**

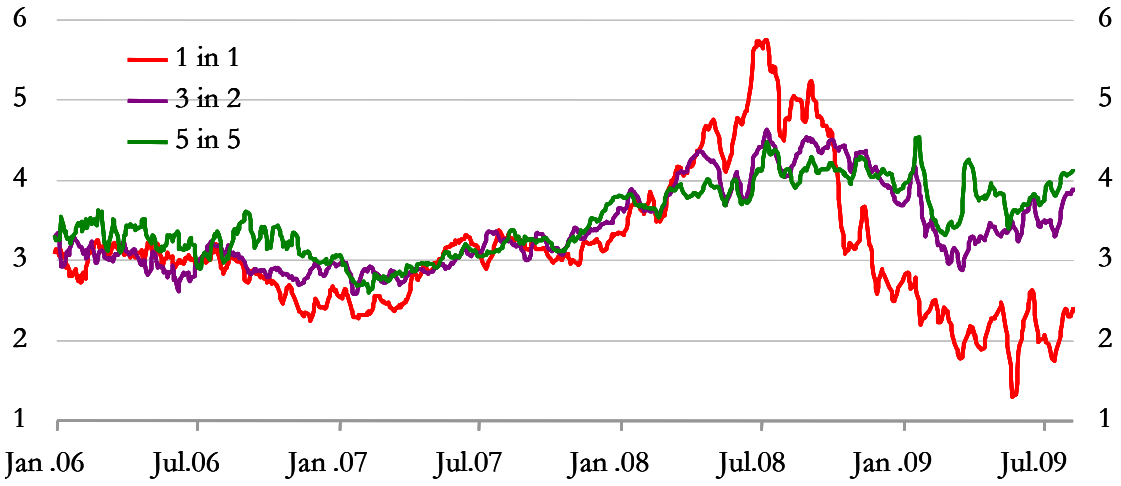



Between April and September the inflation genie got out of the bottle, quickly showing that the inflation forecast had become obsolete. Headline inflation exceeded 9% in June. Although this period also coincided with the significant spike in fuel prices globally, propagation of inflation pressures to core components became increasingly visible: our non-fuel non-energy CPI inflation crept up over 5% and expected inflation shot through the roof, to levels that implied clearly non-convergence to the 3% target over a two-year horizon. Monetary policy moved accordingly to a tighter stance, hiking the policy rate by 50 basis points in June, July, August and September, to 8.25%. The likelihood of double-digit inflation increased significantly. In the Monetary Policy Report presented on 11 September 2008, the Board communicated that a tough stance had to be taken to fight the inflationary tendencies, announcing that further monetary policy rate hikes were in the pipeline, over and above what the market was expecting at the time. The basis of this argument was that global conditions would not help much in the disinflation process and that local growth was actually surprising

us on the upside. Expected GDP growth for 2008 was in the 4.5–5.0% range, and oil price futures pointed to steady prices of around $109 per barrel. Lehmann Brothers collapsed the following week.

Figure 9

**Inflation break even rates – swap contracts**




Since October 2008, this environment changed yet again in dramatic fashion. Commodity prices collapsed, emerging market exchange rates depreciated markedly, and the impact of the global financial crisis was felt acutely in the domestic front. In our two most recent Monetary Policy Reports (January and May 2009), the Central Bank acknowledged that since the last quarter of 2008 the economy had observed a much weaker performance than expected, weakening the labour market and widening the output gap, and that as a result we now expected the slack of the economy to persist well into 2010. This led the Central Bank in January 2009 to initiate a policy-easing cycle without precedent in our history. Policy rates were cut by 775 basis points, from 8.25% in January 2009 to 0.50% in July of the same year. Thanks to the resilience of our financial system, the markets have accommodated a large depreciation of the exchange rate with actually lower break-even inflation rates going forward, despite the sharp easing of policy rates in the very short term. Just as the previous increase in international prices fed into local fuel prices during the first half of 2008, the dramatic fall in energy prices has been quickly transferred to domestic prices, leading to large negative headline inflation readings in recent months. We expect negative annual inflation rates again, at the end of the third quarter and the beginning of the fourth quarter of 2009. Our May 2009 Monetary Policy Report projects that inflation will reach 0.6% by year-end, and will gradually converge back to 3% within our two-year policy horizon.

## Conclusions

The Chilean economy is a small and very open economy, with a structure of production that is starkly different from the structure of its demand, and regularly experiences significant commodity price shocks. Commodity prices, terms of trade and real wages play significant roles in shaping the inflationary dynamics and persistence of prices in Chile. In particular, given the competitive nature of its retail sector, commodity prices are fed through the economy rather rapidly, affecting the allocation of production and demand and the dynamics of inflation.

To describe adequately the different channels through which commodity prices affect the cost structure of the economy, and potentially also expectations and the inflationary process,

in this paper we present the results of a stylised DSGE model of the Chilean economy. The model is subjected to two types of commodity price shocks to highlight the transmission mechanism to inflation, taking into account the characteristics of the Chilean economy, in particular the role played by the fiscal policy rule in smoothing copper price shocks, and credibility regarding monetary policy.

An oil price shock generates a direct increase in CPI inflation, and an indirect effect through its impact on the marginal cost faced by domestic firms. Since prices are sticky, this increase in marginal cost is not completely transferred to prices, and markups shrink. This leads to a contraction in activity of almost 2% within a year of the shock. The monetary policy response to the shock is initially a small increase in the policy rate, which is followed by a small reduction below the neutral rate. The muted reaction of the policy rate, despite the relatively large increase in CPI inflation, is due to the fact that the shock is transitory and that policy is credible. We show that if monetary policy lacks credibility then an oil price shock leads to a much larger and persistent increase in inflation. In this context, the monetary authority needs to tighten further, which creates a contraction in activity that is much stronger than in the case of perfect credibility.

We also analyse the impact of a copper price shock in the context of a fiscal policy that follows a procyclical pattern, where fiscal expenditures increase one to one with terms of trade gains. The results are contrasted with those obtained assuming a fiscal policy that follows a structural balance rule, which intends to replicate the policy rule that Chile has followed since 2001. The most important difference between the two scenarios analysed is the impact on inflation. When the government raises its expenditure in response to the windfall gains from copper, there is a large increase in demand, and output rises. As a result, inflation increases and the real exchange rate appreciates. When the government follows the structural balance rule, instead, most of the windfall gain is saved, and there is only a mild increase in inflation. The monetary policy reaction is different in the two cases. In the first case, when the government follows a procyclical fiscal policy, monetary policy needs to be tightened strongly. When the government follows the structural balance rule, on the other hand, monetary policy does not need to respond.

In sum, a procyclical fiscal policy and imperfect credibility of monetary policy significantly increase the real cost of stabilising inflation in response to commodity price shocks.

These exercises help us understand some recent developments of the inflationary dynamics in Chile, in particular the upsurge in inflation that developed between 2007 and the third quarter of 2008, the rapid disinflation that followed thereafter, and the policy response to it.

During 2007, supply shocks derived from higher international prices of energy and food, together with specific domestic factors, led to an acceleration of domestic inflation. Despite this, both the monetary authority and the market believed that this spike in inflation did not warrant a strong reaction of monetary policy, as a rapid convergence to the target was forecast. However, between April and October, CPI inflation rapidly accelerated, reaching a peak of 9.9% on an annual basis in October 2008, partly as a result of yet another spike in international fuel prices, but also due to the propagation of past inflationary shocks towards core components of inflation.

Expected inflation increased to levels that were no longer consistent with a convergence toward 3% within a two-year horizon. As a result, monetary policy initiated a rapid tightening cycle, and the monetary authority announced, in its September Monetary Policy Report, that further rate increases were to come, as global conditions, though weaker, were not sufficient to cool the economy and guarantee the required disinflation.

This view would start to change in dramatic fashion only a week later, as the world economy plunged into a recession following the fall of Lehman Brothers. Just as the increases in international prices fed into local fuel prices at a rapid pace during the first half of 2008, the dramatic drop in energy and food prices since the last quarter of 2008 was quickly transferred to domestic prices, leading to a rapid disinflation process. As a result, monetary

policy initiated an aggressive easing cycle in June 2009, which reduced policy rates from 8.25% in January 2009 to 0.50% in July 2009.

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