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The impact of the 2007-08 food price crisis in a major commodity exporter: Food prices, inflation, and inclusion in Brazil

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Working Paper No. 2012/95

The Impact of the 2007–08 Food Price Crisis in a Major Commodity Exporter

Food Prices, Inflation, and Inclusion in
Brazil

Bernardo Mueller and Charles Mueller*

November 2012

Abstract

This paper argues that the effects of the food price crisis of 2007–08 put pressure on two variables that are of central importance to the Brazilian government: inflation and social inclusion. We describe how political institutions in Brazil in the past 25 years have given rise to a policy-making process where fiscal stability and social inclusion are the overarching priorities, irrespective of the party in power. In this scenario one would have expected that the food price crisis would have led to significant reactions by the government to safeguard those two central policy objectives. However, the reaction of the government and social groups was relatively subdued, compared to that in most other countries. We explain this apparent puzzle by showing that the negative impacts of the food price increases on consumers was partly counterbalanced by the benefits from agricultural production, given that Brazil is a major exporter of commodities. Also, before the crisis the country already possessed a series of programmes and mechanisms that offered social protection to the poor that could be easily and quickly adjusted. Brazil was therefore well-placed to deal with the impacts of the crisis.

Keywords: food price, price transmission, Brazil, social inclusion

JEL classification: Q17, Q18, O13, F10.

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Tables and Figures appear at the end of the paper.

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1 Introduction

This paper examines the impact of and the reactions to the world food crisis of 2007–08 in Brazil. It shows that the reactions by society and by the government were relatively subdued as compared to many other countries. It is argued that this outcome is surprising as there are good reasons to expect the government to be particularly concerned with the potential impacts of a shock of this nature. These reasons are related to the political incentives faced by the government, and particularly the president, to pursue social inclusion subject to monetary and fiscal discipline. The paper traces the emergence of these incentives to a pair of beliefs that emerged after Brazil redemocratized in 1985. The first is a belief that policy must pursue social inclusion as a primary concern. It emerged as a reaction to the historic inequality in the country and the trauma from the authoritarian period from 1964 to 1985. The second belief is a fear of inflation that arose from the 10-year experience with hyperinflation from 1985 to 1994. Together these beliefs constrain government policy to prioritize fiscally sound social inclusion. Given these incentives, the food crisis of 2007 and 2008 posed a dual threat, as it undermined both social inclusion and price stability. The absence of any great reaction by the government is therefore somewhat of a puzzle.

The main purpose of the paper is thus to explain this puzzle. This is done by first describing the sharp transformation undergone by the country's economy and polity in the past two decades. In the economic realm Brazil has tamed inflation, reached investment grade in 2008, accumulated over US\$350 billion in reserves, become an agricultural powerhouse, discovered extensive oil reserve, reduced poverty and for the first time in its history significantly reduced inequality. It is true that in this period economic growth was lackluster and many economic problems persisted, yet it remains the case that an impressive transformation has taken place.

In terms of political institutions the country has also experienced a dramatic transformation, with democracy clearly consolidating. The paper argues that despite the fact that political institutions give the Brazilian president substantial powers, they simultaneously provide for a series of checks and balances that constrain that power to be used for the greater good rather than to pursue private interests. The upshot is that the president (irrespective of party or ideology) faces strong incentives and constraints to use those powers to pursue the agenda of fiscally sound social inclusion described above.

Given this economic and political background the paper proceeds to describe the circumstances that mitigated the impact of the food crisis when it hit in 2007–08, so that only minor policy adjustments were needed. The first of these circumstances is the fact that Brazil is a major producer and exporter of agricultural goods. A study by Ferreira et al. (2009) is described that uses several sources of micro-data to measure the impact of the increase in food prices on different deciles of the population. The results show that although this shock did in fact reduce household welfare hitting the poorest the hardest, the compensating effect of income from labour in agriculture, together with transfers from governmental social programmes, mitigated that impact considerably. This was especially true for the poorest deciles, which were thus spared from the brunt of the crisis.

The paper also describes how Brazil already had in place, prior to 2007, an extensive system of social protection through which the government realized transfers to the poorest cohorts of the population. These programmes, headed by the *Bolsa Família* conditional cash transfer schemes, have managed to redistribute resources in a highly concentrated country without generating perverse work incentives or other major distortions. When the food crisis hit the country the pre-existence of these mechanisms meant that only parametric changes to the level of benefits were needed, as opposed to having to set up a new programme. In the same vein the government was able to use its networks of large public banks to increase the level of credit in the economy as a reaction to the concurrent financial crises, thus also contributing to insulate consumers and the economy from the potential hardships from food price increases. The upshot was that the pass-through of higher world food prices to inflation and the exchange rate was relatively limited, not endangering either of the government's core concerns: inflation and social inclusion.

The paper also discusses the Brazilian biofuel programme in the light of the criticism that such use of agricultural resources could be a cause of the food crisis. It is argued that the Brazilian programme, based on alcohol made from sugar cane, is energetically efficient and given the availability of land and water in Brazil does not crowd out the production of food crops. Finally, the reaction of the Argentine government to food crisis is briefly compared to that of the Brazilian government. This is useful to highlight the central importance of political institutions as determinants of the content and style of policy-making, as Argentina has many geographical and economic similarities with Brazil and yet very different political institutions, in particular regarding the lack of checks and balance over presidential power. Tellingly, the government's reactions to the food crisis in Argentina involved opportunistic price controls and intrusive export bans, generating significant discontent and investment disincentives. This contrasts with the approach in Brazil focused on promoting agricultural investment through research and innovation.

The paper is structured as follows: the next section describes the profound transformation of the Brazilian economy and of its political institutions in the past two decades. Understanding the nature of this transformation is crucial for understanding the observed impact of the food crisis. In Section 3 we describe that impact by presenting data on how food prices and other prices reacted to increased international prices. Section 4 then characterizes political institutions in Brazil establishing who the relevant players are, what they want, what powers they have, and what incentives and constraints they face. This understanding of the player's motivations and capacities then allows us to explain in Section 5 why they reacted as they did to the food price increases.

2 Country context

Brazil has recently undergone such a dramatic process of change that it is in many respects a much different country than it was a couple of decades ago. Understanding these changes is crucial to understand why Brazil was affected in the way it was by the food price crisis and why the different actors reacted as they did. This section will simply describe the changes, leaving to Section 5 a political economy analysis of how and why these changes came about.

From 1913 to 1980 Brazil was one of the fastest growing countries in the world (Coatsworth 2007). It industrialized over that period through a process of import substitution with high levels of state dirigisme. During this period Brazilians came to believe that this process of intense growth would lead the country to developed nation status. Endowments in the form of land, natural resources, climate, geography, population, and a huge potential internal market seemed to provide the necessary conditions for continued prosperity. Yet this confidence in the future did not last. Starting in the mid-1970s the country stagnated with falling levels of productivity and near-zero economic growth until the end of the century, an experience which substituted the confidence and optimism with an obstinate cynicism and disbelief about the country's ability to ever get back on track.

The defining mechanism through which this perverse situation was reached was the period of severe hyperinflation that started after the demise of the military dictatorship in 1985. That regime had steered the country through the 'Brazilian miracle' of 1968–73, but gradually lost power as a deteriorating economy added to the dissatisfaction due to the political repression. With redemocratization there came to dominate a rejection of anything associated with the old authoritarian ways, ushering in a dominant belief in inclusion, democracy, participation, transparency, citizenship, and other similar values. Far from being innocuous statements of intent this belief became a crucial determinant of many political choices that shaped the country's path to the present day. In Section 5 we will argue that these beliefs are key for understanding the impact of the food price crisis in Brazil.

One of the first consequences of this belief was a rejection of the fiscal and monetary austerity of the last decade of the military dictatorship. In the new regime policies had to be inclusive and open. Notwithstanding the merits of such values, the lack of concomitant forces for assuring the fiscal viability of these new policies resulted in a prolonged process of hyperinflation. Brazilian history in the twentieth century had been a succession of recurring periods of high inflation interspersed with a brief period of reprieve. But what the country experienced from 1985 to 1994 were several orders of magnitude more painful and disrupting, with average annual inflation at 1,050 per cent and a maximum of 2,012 per cent in 1989. This was an experience that severely traumatized the Brazilian people. As one government plan after another failed to improve the situation, there came to prevail a sense of hopelessness and a feeling that inflation and all its perverse consequences were an integral part of Brazilian life.

In 1994 inflation was finally tackled with the creation of a new currency, the Real, instituted by a plan lead by Fernando Henrique Cardoso who would be the president of Brazil until 2002. Yet despite the success on the monetary front, few people at that time would have predicted the changes that the country would go through in the following years. At that point the country had been through a political opening, with a massive extension of the franchise, and was in the midst of economic liberalization, with removal of trade barriers, privatization, and a reduction of the state's role as a producer. Nevertheless, both the economy and the polity remained in many ways so dysfunctional and suffered from so many seemingly intractable problems, that even the most optimistic analysts would not have dared dream of the transformation that was to come.

The key to understanding this transformation is the rise of a new belief that complemented in a crucial way the belief in inclusion, both of which remain active to the present day. This new belief is a strong aversion to inflation, that is, recognition by

policy makers, politicians, voters, and society in general of the perils of inflation. It translates into an unwillingness to accept policies and choices which may lead to short-term benefits at the risk of sparking of a renewed process of inflation. Perhaps the best evidence of the real constraining force of this belief was the surprising conversion of President Lula once in office in 2003, reneging the leftish policy agenda his party had defended for years in the opposition, only to continue the fiscally disciplined macro-economic policies of his predecessor.

It is the conjugation of these two beliefs, inclusiveness and fiscal discipline, that has been the determining force of policy-making in Brazil in the past decade and a half. It thus follows that consideration of these constraining forces is essential to understand how policy makers reacted to the food price crises in Brazil. Note that an increase in food prices has the potential to directly affect issues which lie at the core of both of these beliefs: (i) rising food prices overwhelmingly affect the poor and excluded and (ii) food price increases are a direct threat to inflationary expectations. Therefore, there are very good reasons why policy makers and society in general would have been concerned with the crises and willing to take measures to dispel its perverse potential effects. What measures were effectively taken will be addressed in the following sections, as will a political economy argument that explains why that was the chosen line of action. Before this, in the rest of this section we will briefly describe the transformation that has taken place in Brazil.

When the Brazilian economy was hit by a crisis in 1999 that forced a massive devaluation of its currency, there were suspicions that the hard-earned price stability would be lost. Staving off this fate would require a level of fiscal discipline that many doubted the country could muster. Nevertheless, since then macro-economic policy has been centered on stringent primary surplus targets that have prioritized fiscal discipline and monetary stability over all other policies and goals. This is quite a remarkable accomplishment as the cuts required to meet those targets go against the natural instincts of politicians who typically have short political horizons.

The benefits of this line of macro-economic policy have not yet been reflected in particularly high rates of growth of GDP, which has been rather average, picking up somewhat in recent years. The new circumstances have, however, laid a foundation of stability and order that has been crucial for other transformations that not only reflect important achievements but should also facilitate future growth. Perhaps the most conspicuous sign of this transformation was the achievement of 'investment grade' in 2008, which has improved the country's access to international capital markets. This promises to have a big economic impact as the lack of savings is often recognized as one of the major constraint on growth in Brazil (Bacha and Bonelli 2005; Blyde et al. 2008; Hausmann 2008). Partly as a consequence of this change Brazil has lately been one of the major recipients of foreign direct investment in the world. Together with high commodity prices this has led to an unprecedented level of foreign reserves (over US\$350 billion and rising in October 2011), which has provided considerable financial security to the country in the midst of the current global crisis. This level of reserves is currently higher than the country's external debt, which has always been perceived by Brazilians as evidence of their country's weakness and vulnerability. In this sense the fact that in 2010 Brazil became a creditor to the International Monetary Fund and has, in 2011, offered to help out financially with the European crisis, has been particularly symbolic. Another sign of the new times has been inclusion of Brazil in the BRICS (Brazil, Russia, India, China, and South Africa) group of large emerging nations, and

with it the status of being a key player in international fora, in contrast to the very marginal position it held just a few years back. Similarly the choice of Brazil to hold the 2014 World Cup and 2016 Olympics reflect the country's new-found prestige.

Two other changes that are of extreme importance for the analysis of the impact of food price increases in Brazil are the recent falls in the level of poverty and of income concentration. Poverty rates have been halved since 1993 (from 43 per cent to 21 per cent of the population) and income concentration has fallen almost every year since 1995 (Gini index of 0.601 to 0.543). These changes have been brought about by, among other factors, the end of inflation, conditional cash transfer programmes, and real increases in the minimum wage (Barros et al. 2007), which in turn are consequences of the dual beliefs in fiscally sound inclusion. These changes are unprecedented and highly consequential. Brazil has traditionally been one of the most unequal countries in the world, a position that until very recently has been impervious all the policies that sought to rectify that situation. These changes have given access to millions of new consumers to markets that used to be beyond their reach, dramatically expanding the extent of the internal market and its future growth possibilities.

Even in education, an area where Brazil has always been most vulnerable, there have been important improvements in recent years. Although it remains low in international rankings, the past decade has seen persistent improvements. More importantly, these improvements have been the result of extensive and innovative reforms based on a willingness to measure, evaluate, and benchmark performance at many different levels (OECD 2010). These reforms have focused not only on funding but also on testing, community participation, completion rates, teacher wages and training, and increases of the school day/calendar/curriculum among other areas. Over half a million graduates and ten thousand PhDs are now produced every year and the share of published scientific papers among all countries has risen from 1.7 per cent to 2.7 per cent since 2002.¹

A final area where dramatic improvement has materialized in the past decade has been agriculture. Brazilian agriculture has historically been plagued by distortions and inefficiencies that have impeded the full potential of its natural endowments from being realized. Problems such as excessive concentration of land ownership, low productivity, poor infrastructure, and thin markets, have often been exacerbated by the very policies that sought to address them (Rezende 2006). Perverse subsidies and ill-conceived land and rural labour reforms have led to inverted price signals for capital and labour relative to the country's natural endowments of these factors. Rather than achieving redistribution land reform has weakened property rights and distorted land use decisions, for example leading to an underuse of tenancy (Alston and Mueller 2010). Up until the mid-1990s the standard diagnostic of Brazilian agriculture was that severe structural change, through a real land reform and greater government involvement, was the only way to set the sector on the right path. It is thus surprising that by the mid-2010s Brazil had, with barely any such structural change, become one of the world's agriculture powerhouses. Today Brazil is either the major or one of the major, producers and exporters of a long list of products such as coffee, sugar, orange juice, beef, pork, chicken, soybeans, maize, cotton, and a major player in an even longer list. This

¹ *The Economist*, 6 Jan. 2011.

achievement has been reached through investment in high level agricultural research and innovation. *The Economist* (28 Aug. 2010) has even suggested that the recent Brazilian model of agriculture could be a template to help solve African agricultural problems. Additionally Brazil is currently one of the few countries in the world that still has a viable expanding agricultural frontier, even without including the Amazon. Similarly the availability of water and great scope for growth as infrastructure improves, means that Brazilian agriculture will likely occupy an even more prominent place in the production of food and fuel in the future.

While in many ways Brazil is undergoing the positive transformation described above, myriad other constraints on the country's economic growth and the improvement of the population's quality of life still persist or are getting worse. Infrastructure is crumbling or lacking, corruption is high, taxation is excessive, social security marches towards insolvency, etc. This section has not argued that Brazil has overcome all the major problems it faces, but rather that it has undergone a fundamental and unexpected transformation in recent years. It is thus a much different country than it was just a decade ago and as such the impact and reaction to the food price crisis has been much different than it would have been in the absence of this transformation.

3 The evolution of food prices in Brazil

3.1 A brief history of commercial agriculture in Brazil

The expansion of agriculture in Brazil has undergone three broad phases over the last six decades: from the end of the Second World War to the late 1960s, a phase of horizontal agricultural expansion; from 1965 to 1990, a period of induced conservative modernization, and from the early 1990s to the present, a period of fairly low government intervention but of remarkable performance of agriculture (Mueller and Mueller 2006).

In the first period, the expansion of agriculture occurred chiefly by the incorporation of new lands at the agricultural frontier. The productivity of agriculture remained low and stagnant, but road construction enabled production to expand into new areas. By the end of the period, however, the stock of fertile lands in the agricultural frontier had basically vanished. The realization of the strategic role of an adequate performance of agriculture led to the implementation, installed by the military government in 1964, of a modernizing agricultural strategy. Its main components were: subsidized financing to commercial agriculture; the formation of a research organization in tropical agriculture—the EMBRAPA system (Empresa Brasileira de Pesquisa Agropecuária which translates as Brazilian Enterprise for Agricultural Research); reform of the minimum price policy; and incentives for the creation or expansion of *agribusiness complexes*.

Subsidized agricultural credit was, by far, the main instrument employed. In the 1970s and in the early 1980s the availability of subsidized credit expanded considerably, accompanied by considerable growth and diversification of agricultural production and by noticeable increases in productivity. However, in the early 1980s the impact of subsidized credit on production began to weaken; moreover, it became regarded as wasteful and as an obstacle for monetary control. Agricultural credit was considerably

curtailed, real interest rates became positive (interest rates were set higher than the rate of inflation) and easy credit was replaced by incentives from minimum prices.

The progress of agribusiness was an important factor in the increases in production and productivity. By the end of the 1980s crops integrated into agribusiness complexes showed important productivity changes; crops which failed to do so tended to stagnate (Mueller 1992). The development of agribusiness was an essential feature in the recent agricultural surge, discussed above.

It is important to stress that the subsidies and incentives of this period were used to compensate agriculture for a hectic policy environment.² There were frequent policy shifts, brought about by macro-economic constraints and by changes in priorities, subjecting agriculture to distorting interventions, price controls and barriers to agricultural exports. Such agricultural policies became increasingly cumbersome and had to be discontinued, leading to changes in the agricultural strategy and enabling the recent period of agricultural growth with declining official backing.

Focusing on the more recent period,³ an important innovation introduced was that in the early 1990s Brazilian agriculture—together with other productive sectors—was submitted to increasing international competition. Tariffs were reduced, import prohibitions and export quotas were curtailed, and most of the distorting interventions were phased out. Moreover, the official financing of commercial agriculture was gradually reduced, and a substantial fraction of the remaining was mostly channelled to small farmers. Private finance evolved to accommodate commercial agriculture. However, these changes did not evolve smoothly; there were ups and downs, engendering considerable turbulence. A feature of the macro-economic strategy of the 1990s, with significant impacts on agriculture, was the policy of maintaining the domestic currency appreciated (Baer 2001: chapter 10). The increasingly strong Real negatively affected agricultural exports and stimulated agricultural imports, and this happened in a period of sagging international commodity prices. Together with the high interest rate policy of this period, adopted mostly to prevent foreign capital drains, this reduced the impetus of the agricultural expansion.

This changed markedly in 1999 when the foreign exchange rate was allowed to float, generating a sharp depreciation of the Real—which was later reversed. This and the increasing trends in world commodity prices led to a significant expansion of agricultural production and of agribusiness exports. To illustrate, the output of grains and oilseeds, that in the seven years between 1991 and 1998, had increased 32.3 per cent, showed a 55.4 per cent increase in the six years from 1999 to 2004. And most of this increase in output was achieved through gains in yield. Similar gains took place in crops such as sugar cane and coffee, and in the beef, poultry, pork, eggs, and milk segments.

² As shown by Dias and Amaral (2000) and Rezende, (2003); see also, Baer (2001: 373–6).

³ In examining the more recent period it is important to keep in mind three major positive legacies of the period of conservative modernization: the consolidation of an efficient system of agricultural research, the increasing professionalization of commercial farmers, and the development of agribusiness complexes.

These developments impacted significantly Brazil's international trade. The value of agribusiness exports increased from US\$21.2 billion in 1997 to US\$43.6 billion in 2005;⁴ Brazil became the leading world exporter of soybeans, sugar, meat from beef cattle, coffee, orange juice, and tobacco; it is also a major exporter of soy meal and oil, and poultry, pork, corn, and cotton. Figure 1 shows the increase in the commercial balance of the country as a whole and the contribution of agriculture. The data show the important contribution of agricultural products to the country's commercial balance especially after 2005 when the total balance started to decline due to exchange rate overvaluation. By 2009 Brazil had the highest agricultural balance in the world—US\$ 49.5 billion—followed by Argentina and the USA—US\$26.2 and US\$18.8, respectively (Accioli and Monteiro 2011).

It is important to note that this recent performance was achieved in spite of a considerably reduced official support. According to OCDE (2005), in the 2002–04 period Brazilian agricultural support averaged 3 per cent of the gross value of agricultural production, in sharp contrast with the average support granted by the USA (17 per cent) and the EU (34 per cent). Of the main agricultural countries, only New Zealand had a lower level of support (2 per cent).

3.2 The impact of the food crisis on internal prices in Brazil

In this sub-section we show the evolution of food prices and other prices in Brazil before, during and after the food crisis of 2007–08. The purpose of this paper is to analyse the political economy responses to this shock, so before any analysis can be done it is important to have a good characterization of what were the impacts in the country. In this section the characterization will be purely descriptive, simply presenting and describing the price data. The analysis of this data within the political economy context will be pursued in Section 6.

Figure 2 shows the annual change in the general price level in the Brazilian economy and the variation in the food component of inflation. The data shown are from the official consumer price index used by the government for most policy purposes. Because of its hyperinflationary past this is a crucial index in Brazil that is closely followed by policy maker. Unexpected upward variations can trigger immediate policy responses. Since 1999 Brazil has been under a system of inflation targets implemented and enforced by a Central Bank that is to all effects (though not formally) independent from the executive. Since 2005 the inflation target has been set at 4.5 per cent per year with bands of plus and minus 2.5 per cent. Since 2005 inflation has been within the target interval. The figure shows that in 2007 and 2008 the inflation of food items increased dramatically, suggesting a strong transmission from international markets. The effect of food inflation was felt in total inflation contributing to a rise of approximately 2 per cent from early 2007 to mid-2008. Although this was not enough to derail the Central Bank from its official target, it was certainly enough to raise concerns. In subsequent sections we will examine how the government reacted to this threat.

In Figure 3 we show the changes in food prices at a more disaggregated level, still using an index of consumer prices. This data indicates that the increases were not

⁴ Foreign trade data from SECEX, Ministério do Desenvolvimento, Indústria e Comércio (www.mdic.gov.br).

homogenous across food items but rather affected some staples more intensely than others. Of the six items we show, cereals suffered the greatest variation, having reached price increases of approximately 60 per cent in mid-2008. Similarly the price of meats and milk exhibited sharp increases, whereas vegetables, which are not typically tradable, actually fell over most of 2007.

Given these difficulties, as a simpler way to have a notion of the level of food price transmission between Brazil and world markets we plotted the evolution of the price received by farmers in Brazil and the world market prices for rice, maize, soya, and wheat. Because of different currencies and measurement units we standardized all the prices to be equal to 100 in January 2005. The plots are shown in Figure 4. In each case the internal prices vary considerably less than the international price. The difference is largest for rice and smallest for wheat, which is the only one of the four which Brazil regularly needs to import in large quantities. The data suggest that though there is some pass-through from foreign prices for most commodities, the volatility is significantly reduced, at least at the level of the producer, as the data used for internal prices was for farmer-received prices. It may be also that the reduced volatility of internal prices is a result of policy interventions that had the exact purpose of smoothing out these prices. Brazil does have several governmental agencies and programmes whose purpose is to assure the working of agricultural markets including by holding strategic stocks and providing price guarantees to producers, in particular CONAB, the National Company for Agricultural Supply. However, although the level of governmental intervention in agricultural markets was quite considerable in the past, the role played by CONAB and other governmental initiatives has reduced significantly in the past decade.

Finally, Figure 5 shows the evolution of the price of a basket of staples that is deemed the minimum necessary for an average family to survive for one month. This is a common index of the cost of living that is often used in Brazil. The data shows a sharp increase in early 2007 above the general trend at which the series had been growing until then. This is a good indication that the cost of living was directly affected by the world food crisis and that it was felt by the poor, as they normally spend a large fraction of their income on food. Given that the Brazilian government has incentives to be concerned with both the level of inflation and the welfare of the poor, as we argued above, the data shown in this section should be an indication that the world food crisis must have been a cause of great concern. In Section 5 below we will analyse how the government responded. First, however, we characterize the nature of political institutions in Brazil.

4 Political institutions, policy-making process, and policy outcomes in Brazil

When a shock such as the food price crisis of 2007–08 hits a country, the way in which policy reacts depends crucially on its political institutions, as they determine who are the actors that are in a position to affect that policy and, crucially, what are their motivations. By determining who initiates policies, who has voice, who can veto, what are the sequence, timing, and arenas through which proposed policy must pass, political institutions affect the incentives and constraints of all actors in the policy-making process. Thus, in order to understand the specific reactions that emerge to the initial shock, it is crucial to understand the country's specific political institution.

In this section we provide a brief description of political institutions in Brazil. This will allow us, in the next section, to make sense of what happened in that country as a consequence to the food price crisis. In Section 2 we have already described the intense economic and social transformations that have taken place in Brazil in the past two decades. Here we analyse the concomitant political changes that have been both cause and consequence of those transformations. The focus is on describing who are the main actors, what are their motivations, how they interact and what are the characteristics of the policies that emerge from these political transactions.

The most important aspect of political institutions in Brazil is the overwhelming power of the president. The Brazilian president has a series of powers and prerogatives that in essence have allowed him/her to closely control the agenda in congress, such as strong decree power, line-item veto, monopoly of proposal in some specific areas, and a series of political currencies with which to buy support.⁵ The upshot has been high levels of governability and the ability to approve much of the president's reform agenda. Given the history in Latin America of poor outcomes associated with strong executives, this characteristic of Brazilian political institutions might seem like cause for alarm. However, contrary to most Latin American cases of *caudillos*, *juntas*, and populist strongmen, Brazilian presidents in the past two decades have increasingly faced a series of constraints and incentives that have checked the power of the executive thus restricting the use of that power towards directions generally more compatible with public welfare than with that of private groups. This has gradually led to greater rule of law and inclusiveness and is in great part responsible for the impressive transformation in the economy that we described in Section 2, including the consolidation of monetary stability, achievement of investment grade status, the reduction in poverty and wealth concentration, among other recent changes.

Given that the president holds so much power, what determines what he/she decides to do with that power? In other words, what are the checks and balances that restrict the abuse of power? In Section 2 we described two key beliefs that permeate Brazilian society and influence what policy emerges. The first is a strong bias that policy must be inclusive, open, transparent, and participative. The second is an ingrained aversion to inflation. The first arose as a reaction to the period of repressive military dictatorship (1964–85) and the second from the painful experience with hyperinflation (1985–94). Together they provide a bias toward fiscally sound inclusion that affects policy-making in a fundamental way. One of these ways is by constraining the president's choices and shaping his/her incentives. In particular, every president in Brazil today is acutely aware that if inflation returns he/she will be punished by voters who rightly recognize that the end of monetary stability was due to a failure of the executive, who after all has the power, the instruments and the mandate to avoid that outcome. Similarly, globalized international markets would punish the country almost automatically if fiscal discipline even started to slide. That represents a credible threat and an important constraint for the president's choice of macro-economic policy given that Brazil has highly evolved and internationally integrated financial markets and thus much to lose if credibility is undermined. The discipline provided by these electoral and financial constraints have been manifest through an unwavering policy of high primary surpluses since 1999,

⁵ For greater details on Brazilian institutions and how the current arrangements evolved through recent history, see Alston and Mueller (2006); and Alston et al. (2008).

under presidents of very different ideological lines, which in turn has led to the hard-earned credibility epitomized in the raising of the country's sovereign debt to investment grade status.

The beliefs in inclusion and monetary stability do not imply that policy and its outcomes are generally efficient or that they always achieve their intended goals. Because achieving inclusion generally involves redistribution, especially in such an unequal country as Brazil, those groups that stand to lose from policy changes resist and use their political and economic power to avoid losing rights, privileges, and transfers. The result is messy. Some redistribution and inclusion is realized, but at the same time distortions, inefficiencies, and wastefulness are generated. To most observers, including much of the Brazilian population and academics studying the country, these distortions are glaringly apparent and given that there are so many superior alternative ways of organizing policy and socio-economic relations, it simply seems absurd that things are done this way. The insistence on such inefficient behaviour is often written off as some form of irrationality or a cultural trait. In reality, these outcomes are driven by the beliefs that constrain policy in this way. An important result is that together with the highly visible distortions some hard to observe inclusion also takes place. While the distortions have immediate impact, the inclusion is silent and often only has impact in the long-term. Nevertheless there is a large literature that argues that political and economic openness has been the key determinant of economic growth historically (Acemoglu and Robinson 2006; North, Wallis and Weingast 2009). We argue that much of the improvement in Brazil in the past decades is rooted in the inclusion that has silently taken place over this period. Clearly it would be preferable to have the inclusion without the distortions, but given the way things work in Brazil you cannot have one without the other. This is a process which we call 'dissipative inclusion'.

A quintessential example is land reform which has, over the past half century, given incentives for land invasions, violence, rural conflict, deforestation and undermining of property rights (Alston, Libecap, and Mueller 1999; 2010). At the same time an area of land equal to France and Portugal has been redistributed to landless peasants providing access to land, credit, and citizenship. That is, there has been dissipation of rents and also inclusion and it is not readily apparent what is the net effect. Alston et al. (2011) show that dissipative inclusion is not limited to land reform but is rather a ubiquitous characteristic of policy-making in Brazil. In the next section we will show that this process also affects policies related to food prices.

One of the main mechanism through which the powers of the executive are constrained is the existence of a series of checks and balances that together constrain and incentivize fiscally sound pursuit of social welfare by the president. These checks and balances involve a an independent judiciary including a Supreme Court that routinely goes against the interest of the executive; a free, combative, and high quality press; a diverse civil society that has carved several institutionalized entry points into the policy-making process; independent and legally savvy public attorneys that view their mandate to protect society from the failings of government; among other. Even congress, where the executive always manages to build a majority governing coalition serves as a check of extreme behaviour by the president (Alston and Mueller 2006).

What are the characteristics of policies that emerge from such a system? Alston et al. (2008) argue that there are four related categories of policies in the Brazilian policy-making process. The first is a series of policies that aim to assure monetary stability,

based on fiscal discipline, stringent primary surpluses, inflation targets and high levels of taxation, among others. These policies form a fiscal imperative that takes precedence over all other types of policies. That is, if inflation starts to rise, all other policies will be cut or put on hold to assure the fiscal imperative.

The second category involves a series of policies which the executive uses to purchase political support in congress and across political parties. This is a process of the exchange of ‘pork for policies’ which involves the distribution of relatively small concessions of pork and jobs in the federal government structure to coalition partners (small compared to the level of pork in the US Congress). These exchanges give the president the political governability to do whatever it takes to maintain the fiscal imperative.

The third category of policies is composed of those which have been hardwired into the country’s budget and are thus insulated against opportunistic changes by politicians including the president. These policies make up more than 90 per cent of the budget and are composed mostly of social security, civil service, education, and health. These are mandatory expenditures over which the executive has very little discretion and can thus not be cut to help with the fiscal imperative.

The final category includes all the remaining policies, which are not hardwired and over which the president has full discretion. These residual policies include investment in infrastructure, social policies such as anti-poverty programmes, environmental policy, land reform, etc. Importantly for the purpose of this paper, many policies which would typically be used to address a shock in food prices are included in this category. Residual policies tend to be volatile for two reasons. The first is that when the fiscal imperative is threatened, this is where the cuts will happen to re-establish monetary stability. The second is that these policies are funded by the small slice of the budget which is not hardwired and over which the president has full discretion (less than 10 per cent of the budget) so that whenever the officeholder changes many of these policies and programmes also change.

Although this is far from an ideal system, in pragmatic terms it does have the merit of putting most of the power in the hands of the president who faces incentives and constraints to pursue broad social welfare rather than particularistic transfers, as is the case with congress. In addition it provides checks and balances that restrict the abuse of that centralized power. The upshot is a high level of governability and thus the ability to pursue necessary reforms and also to adapt to economic and political shocks. Counterfactuals are situations, common in Latin America, where the president is unable to approve his/her agenda and gridlock ensues impeding much needed reforms. Another counterfactual would be a situation (such as Argentina) where a strong president faces few checks and balances leading to abuse of power and opportunistic behaviour which can have severe growth-distorting impacts over the long-term.

5 The political economy of the food price crisis in Brazil

5.1 Introduction

In Section 2 we described the impact of the 2007–08 increase in world food prices on the Brazilian economy. In this section we will show how the government and other

actors reacted to that price shock. This will be done by using the understanding of the country's political institutions, described in the previous section, to analyse why each player acted as they did. The price shock is treated as a perturbation of the extant political equilibrium and our interest is to explain the way in which the system responded to that change. In particular we want to understand how the shock influenced governmental policy. By analyzing this new equilibrium we can derive hypotheses and provide a narrative about why the observed reactions to the increase in food prices took place.

In the previous section we described how political institutions in Brazil shape the government's behaviour by affecting the incentives and constraints it faces related to monetary stability and social inclusion. If one accepts that these objectives are central tenants of government policy in Brazil, then it must be the case that the reaction of the government to the food price crisis of 2007–08 must have been affected in important ways by these incentives and constraints. This is so because an increase in the price of food has direct and potentially large negative impacts on both of these objectives. The first impact arises because an increase in food prices is a direct threat to the government's inflation target as food is one of the main components of all inflation indices. The second impact arises because food price increases are particularly regressive as the poor spend a significantly higher proportion of their income on food than the rich (the Engel curve for food expenditure in Brazil declines from around 33 per cent for the poorer percentile of the population to approximately 10 per cent for the richest (Ferreira et al. 2011)). Therefore the Brazilian government had good reason for concern when the price of food suffered a shock in 2007–08, perhaps more so than many other countries where governments faced different incentives and constraints.

If this is so we are confronted with somewhat of a paradox, as compared to many other countries the policy response of the Brazilian government was quite subdued. How can it be that a government that finds its core values threatened by a shock responds with only very subtle and marginal policy adjustments? In this section we will provide an explanation for this paradox. We will show that although the food price shock did in fact present a potential threat in areas of extreme political concern to the government, there already existed a series of circumstances and characteristics of the economy and of previous policy that either mitigated the impact of the crisis or provided compensating benefits, so that in effect only minor policy adjustments were needed to safeguard the governments central objectives. The lack of a more stringent reaction by the government was therefore not because the increase in food prices was not a concern, but because the country was well-positioned to deal with those impacts.

Figure 6 shows a timeline that plots events that are relevant to the food price crisis in Brazil. The figure includes data on general inflation, food inflation, and prices for basic commodities exported by the country. What stands out the most from the timeline is the relative absence of major governmental or societal reactions to the crisis. Although there are some government policies that are related to the impact of higher food prices especially on the poor, these are all quite minor adjustments of programmes and policies that were already in place, motivated by the overarching belief in social inclusion. The *Bolsa Família* programme, for example, (discussed in greater detail in the next two sub-sections) was instituted in 2004 by unifying several other social programmes that were already in place, some since the mid-1990s. The increase in benefit levels (in real terms) that took place as a reaction to the increase in food prices in 2007 and 2008 was just the fine tuning of a policy instrument that was already in place and working. Another

remarkable fact shown by the figure is that contrary to the rest of the world, Brazil had already been through a food price shock in 2002 and 2003. This shock was in fact greater than that experienced five years later but was motivated instead by the political uncertainty and exchange rate devaluation associated with the coming to power of a left-wing government for the first time in the country's history. This uncertainty only abated once the markets realized that very little actually changed under the new government in terms of policy orientation, as the emphasis remained on fiscally sound social inclusion. This experience with a drastic price shock before 2007–08 may have helped prepare the country to deal with that subsequent shock.

Each subsection that follows addresses a different aspect or characteristic of the Brazilian economy or of extant policies, showing how they either insulated the country from the brunt of the increase in food prices or mitigated the negative impact with relatively little disruption.

5.2 The impact of the 2007–08 food price shock across households

In order to analyse the political impact of the increase in food prices it is necessary not only to have a measure of the magnitude of that shock but also of its incidence across different types of households. Different social groups are not only affected differently by changes in food prices, but their political influence also varies in important ways. In a democracy the median voter usually has much lower income and wealth than the mean voter so there are typically pressures for redistribution and social protection (Meltzer and Richard 1981). As we noted above, this is very much the case in Brazil where there are pervasive incentives and constraints for the government to pursue inclusion and poverty reduction. If we want to understand the response by government to the food price crisis it is necessary to consider explicitly how different social groups, and particularly the poor, were affected.

Fortunately there is a recent study by Ferreira et al. (2011) that seeks to measure the impact of food price increases in such a way that the differential impact can be perceived across percentiles of income classes. This study not only measures the effect on households' expenditures, but also the countervailing impacts of increased wage income for those engaged in food production as well as the increases in social transfers by the government as direct measures to mitigate the impact of the crisis on the poor. The net measured effect is thus the result of the sum of three related components, an expenditure effect, a market income effect and a transfer income effect.

Taking into account the countervailing effect on wages is particularly important in a country like Brazil that is deeply integrated in international agricultural markets and that thus stands to gain from commodity price increases. Brazil is currently the second largest exporter of agricultural products and has the highest agricultural commercial balance (US\$49.5 billion in 2009) (Accioli and Monteiro 2011: 24). The market income effect thus seeks to measure the distribution of the benefits of this positive shock across income classes. Occupational data for agricultural workers was used to map from individual agricultural workers to the production of each different commodity. The results are presented using first an assumption of full pass-through of agricultural prices to wages and then a pass-through of 50 per cent.

In the same manner changes in official social protection programmes must be taken into account as they can mitigate the impact of increased food expenditure for the lower

income percentiles. In Brazil this effect is potentially large as more than 11 million families (approximately 23 per cent of the population) receive transfers through the federal government's flagship programme *Bolsa Família*, and more are benefited by other assorted programmes. This amounts to a transfer of approximately 0.4 per cent of GDP. Brazil was one of the pioneering countries to adopt means-tested programmes in the late 1990s and today the *Bolsa Família* is the largest conditional cash transfer programme in the developing world. It has managed to overcome the initial skepticism against assistentialist policies to become a model often held as example to other countries (Lindert et al. 2007). Indeed, Brazilian social protection programmes are credited as an important determinant of the historically unprecedented reductions in income inequality and poverty over the past decade (Barros et al. 2007).

The fact that these cash transfer programmes were already set up and running when the food price crisis hit in 2007 made it very easy for the government to use these channels to provide some compensating income to the poor. Because these programmes work through electronic cards that can be used in ATMs (automated teller machines) across the country, the transfers are more finely targeted at the beneficiaries avoiding being captured by local political intermediaries as was often the case in assistential programmes in the past. The government increased the benefits of the *Bolsa Família* and other programmes at both the intensive and extensive margins as an explicit response to the increase in food prices in 2008 (Neri 2011). According to Ferreira et al. (2011: 13) citing the Minister of Social Development, the average benefit of the *Bolsa Família* was increased in 2008 by 8 per cent with the stated 'objective of improving the purchasing power of low-income families in the midst of the world food crisis'.

The final equation that is estimated explains the overall proportional change in household welfare b^h due to the food price shock, as:

$$\Delta b^h = - \sum_i \omega_i^h \frac{\Delta p_i}{p_i} + \frac{\Delta w^h}{y^h} + \frac{\Delta \tau^h}{y^h} \quad (1)$$

where ω_i^h are the budget shares for each commodity i , p_i is the price of commodity i , w^h is the market component of non-farm income and τ^h is the transfer received by household h . Thus equation 1 explains the change in household welfare due to the food price shock as the sum of the three terms on the right hand side, respectively the expenditure, income, and transfer effects.

The empirical procedure used to estimate this net effect uses individual price data from the national consumer price index, data from a large household budget survey (POF) and micro-data from the National Household Income Survey. The price data includes 156 different food items in eleven large urban centers that represent every region in the country and map quite closely to 16 different food consumption categories in the household budget survey. The quality of these data is quite high compared to world standards. The highly disaggregated nature of the data is important given the great variation of price changes across commodities and across regions within Brazil.

The results are shown visually through price incidence curves which show the impact on household welfare for each income percentile of the food price changes from a pre-crisis baseline. Given that different income classes have different consumption bundles, different propensities to earn income from agricultural production and different access to governmental transfers, the impact naturally varies considerably across percentiles.

This is important for our analysis because different income classes also have different political influence over government.

Figure 7 shows the results for the entire country assuming a 50 per cent pass-through of commodity prices to agricultural wages. The full dark line shows the expenditure effect of food price increases for households in each income percentile. This line shows that the expenditure effect is negative for all households but affects the poor considerably more than the rich. Households at lower percentiles suffered a welfare drop of approximately 12 per cent while the households at the higher percentiles lost only around 2 per cent to 3 per cent. The average reduction in welfare across all households was of 7.5 per cent. These are quite significant magnitudes that indicate that the direct effect of the food price crisis of 2007–08 on household's welfare was by no means negligible. However, once the labour income effect is added to the analysis the net impact changes considerably. The continuous grey line in Figure 7 shows the combined expenditure and labour income effects. The benefits of higher food prices accrue especially to the poorer households, especially in rural areas. The Price Incidence Curve now takes an inverted U-shape with the very poor and the rich suffering little welfare loss and those from the 10th to the 80th percentile suffering a loss of approximately 7 per cent on average. This result shows which Brazilian households benefited the most from the fact that the country is a large producer and exporter of agricultural commodities and quantifies the impact. The transfer effect, which is shown in the figure as the dashed grey line, also improves household welfare, although the impact accrues mostly to the poorer 20 percentiles and is much smaller than the labour income effect.

Figure 8 presents a price incidence curve for rural areas only, also with a pass-through of 50 per cent. While the negative expenditure effect was even stronger than for the country as a whole, once the other two effects are taken into account, the impact of the shock is significantly mitigated, with the poorest 10 per cent suffering almost no loss of welfare. This result shows that the compensating effects of labour income and transfers were particularly important in these areas. In Figure 9 we show the curve for large urban areas. In this case the expenditure effect is smaller than in rural areas but the compensating income effect is also smaller, as there is little agricultural activity. The net effect is fairly regressive with the poor fairing worse off than the rich, except for the very poor (the lowest 5 per cent) which receives a significant boost in welfare from governmental transfers.

In Table 1 the average impacts on extreme poverty and inequality of the three effects are shown for large urban areas, rural areas and Brazil as a whole as compared to a pre-crisis baseline.⁶ Comparing the first and the last column shows the net impact of the food crisis after all three effects have taken place. The numbers show that this average net impact was relatively small. The impact on extreme poverty was only 1.03 per cent, 1.11 per cent, and 1.71 per cent for large urban centers, rural areas, and the country as a whole, respectively. Similarly, for inequality the impacts were 0.7 per cent, 0.8 per cent, and 0.9 per cent. In Figure 10 we show that the general trend for poverty and inequality has been falling significantly since 2003 and 1995 respectively. That data indicates that the setbacks measured in Table 1 have probably been temporary and have not much

⁶ Extreme poverty is defined following IBGE (Brazilian Census Bureau) and is approximately R\$100 per person per month, with regional variation. Inequality is measured through a Gini coefficient of income inequality.

affected those general improving trends. Examination of the second and third columns in Table 1 show that governmental transfers and especially the compensating effect of increased labour income played an important role in mitigating the effects of the crisis on poverty and inequality.

These results help us to understand the paradox described at the beginning of this section. Although the Brazilian government is hardwired to be sensitive to issues related to poverty and inclusion, the response to the food price crisis did not require much more than an adjustment of several programmes and measures that were already set up and running quite successfully for some time. The compensating benefits that accrued especially to rural households (approximately 20 per cent of the country) that were more prone to the negative impacts of food price increases neutralized the need for greater governmental intervention so that only a marginal increase of the transfers in social programmes was needed. The benefits from the increased value of agricultural production also had other indirect positive effects. A report by FIRJAN (2011) that calculated an index similar to the UN's Human Development Index for each Brazilian municipality found that especially in the Centre West, where commercial agriculture is expanding greatly, increased income from agriculture lead to higher tax receipts by municipal governments that in turn offered better public services to the population.

Were it the case that Brazil was not a large producer and exporter of agricultural commodities and did not have a functioning system of social protection, then the impact of the food price crisis would potentially have had significantly more profound negative social and political implications.

5.3 The role of social programmes in mitigating the food price crisis

In this section we briefly describe the set of social programmes in Brazil, focusing on those that are more directly related to poverty and food security.⁷ By showing that even before the food price crisis there was a strong concern regarding poverty and food security in Brazil, with much experimentation and learning already realized, this subsection contributes towards understanding the paradox of why the Brazilian government's reaction was so mild.

Before describing some of the main social programmes that have helped to mitigate the impact of higher food prices on the more vulnerable population we provide some evidence that our claim about the inclusive nature of Brazilian policy-making is justified. In Table 2 we present the ranking for 2010 released by an international NGO called Action Aid that classifies developing countries according to their actions towards tackling hunger. The table shows Brazil at the top of the ranking for the second year in a row and the report states that 'Brazil tops our league table, showing what can be achieved when the state has both resources and political will to tackle hunger' (Action Aid 2010: 5). The fact that this ranking is compiled by an NGO that clearly has its own agenda should not diminish the validity of this evidence, as the bias is actually towards being critical of governmental policy.

One of the first programmes to be pursued directly under the influence of the belief in social inclusion was the First National Programme for Land Reform, one of the first

⁷ That is, programmes in areas such as education, health, sewage, etc. will not be covered.

initiatives of the new civilian government in 1985. Because Brazil had one of the highest levels of land ownership concentration at the time, the idea of expropriating land from large unproductive farmers and giving it to the large contingent of poor landless peasants had a direct appeal to the mostly urban electorate. Such a policy sat squarely with the belief in inclusion and the demand for righting historic wrongs. Furthermore, because land reform involves taking from land owners and giving to landless peasants, it mistakenly seemed to imply no cost on the urban voters themselves. Although this initial land reform programme was not successful in redistributing land, the organization of the landless peasants in the 1990s did catalyze that process. By invading unproductive latifundia the landless peasant movements provided the extra inducement necessary for government to actually follow through with the redistribution of land on a massive scale over the last 15 years. The upshot was a transfer of more than 63.2 million hectares of land in over 7,670 settlement projects benefiting more than 890 thousand families of landless peasants who also received credit and other forms of assistance. Although these are quite impressive accomplishments, Alston, Libecap and Mueller (2010) argue that the process also presented equally daunting costs, as the average cost per family settled was estimated at US\$12,272 in 2005 to which must be added high environmental costs (15 per cent of deforestation in the Amazon takes place in settlement projects), costs due to conflicts and property rights insecurity and the opportunity cost of the families as the process from invasion to receiving the land can take many years and involve tremendous hardships. Furthermore, a very large proportion of the land reform beneficiaries fail to make the land productive or sell the land within a few years of receiving it as many never had the intention of staying on the land. Alston, Libecap and Mueller (2010) argue that a similar level of redistribution could have been achieved at much lower cost by making direct transfers to the beneficiaries as in the *Bolsa Família* programme that is highly successful at targeting the intended population with fewer distorting incentives and little deadweight loss.

The point here is not to detail the debate over the Brazilian land reform but rather to illustrate the nature of social programmes in Brazil as land reform is the template that most other programmes have followed. This template is based on the idea of inclusion, openness, and citizenship, and has as a fundamental characteristic a bottom-up approach where the direct participation of the intended beneficiaries and their organized representatives are built into the policy design and implementation. The result of this style of policy-making is what we have called dissipative inclusion in Section 2. It does lead to inclusion, openness and redistribution, but at the same time it leads to distortions, inefficiencies, and rent dissipation as the losers from the redistribution react to mitigate their losses. In some cases the net welfare impact might be positive with the gains from inclusion—that typically lead to economic growth over time—outweighing the welfare losses. In other cases the distortions might be greater than the eventual gains from inclusion. The point here is not to make any normative recommendation as to how policy-making in Brazil should be changed to avoid these inefficiencies. Rather, the point is that ‘dissipative inclusion’ is a fundamental characteristic of Brazilian policy-making that is especially manifest in policy related to food security and poverty.

Another manifestation of this process took place in the early 1990s when social security was universalized to include rural workers as determined by the 1988 Constitution. This led to the inclusion of more than 2.2 million new beneficiaries from 1991 to 1994 with enormous redistributive impacts in many small rural towns throughout Brazil, where these benefits were often the main source of income. Because most of these beneficiaries did not contribute to the welfare system this universalization implied a

heavy burden to the social security system that was already, and still is, in dire need of reform. As with the land reform example, this is a case where the bias towards inclusion fundamentally determined the design of policy resulting in a process of dissipative inclusion.

In 2003 when President Lula came to office the flagship programme of his government was the 'Zero Hunger Programme'. Because this was the first time in Brazilian history that a left wing party had made it to the presidency, there were great expectations that social programmes would be given an absolute priority so as to set right what was seen as a historic social debt towards the poor and excluded. An Extraordinary Ministry of Food Security was created to administer the 'Zero Hunger Programme' in 2003. Keeping in the tradition of being inclusive and fostering participation, the programme is accompanied by a National Council of Food and Nutritional Security which has 57 seats, 38 of which are filled by representatives of civil society and 19 representatives from ministries and the federal government. In the spirit of dissipative inclusion, this broad level of participation makes the process open and democratic but at the same time often leads to paralysis and irrelevance. This programme did not really create the means-tested cash transfer programmes in the *Bolsa Família* but rather brought together and expanded on a series of separate programmes that had already been created by the previous government as well as other sub-national governments. One of the sub-programmes within the 'Zero Hunger Programme' is the Programme for Food Acquisition which has the objective of simultaneously strengthening small scale agriculture and providing food to the extreme poor. The idea is to link these social groups by purchasing the produce from family farms that find it hard to participate in regular markets and distributing it to vulnerable social groups, such as public schools, day care centers, asylums, soup kitchens, etc. According to Chmielewska and Souza (2011: 18) more than US\$1.5 billion were used in this programme between 2003 and 2009 to purchase 2.6 million tons of food. In 2009 this benefited 138,000 family farms and provided food for approximately 13 million people.

The point to be stressed here once again is that these programmes were already in place when the food price crisis hit in 2007–08, reflecting a deep existing concern with poverty and food security. The ready availability of these policy instruments together with the mitigating effect of higher agricultural labour income described in the previous sections, meant that the reaction to the crisis could take place by simply strengthening actions that already existed.

An important aspect of these and other social programmes is that they are created and administered within a fiscal context that prioritizes monetary stability above any other objective, as we described in Section 5. This means that the budgeted resources for the programmes only fully materialize when the fiscal situation is such that monetary stability is not at risk. If there is a threat of resurgent inflation the executive has the means and the incentives to cut back spending and this is done especially in these types of policies, as many other expenditures, such as health, education, and social security, are not discretionary. This means that the social programmes often exhibit volatility in that they stop and go at the mercy of the general macro-economic situation. While this aspect is often criticized by those who would like to see a higher priority given to social vis-à-vis economic objectives, another way to think about it is that the biggest, most effective and most inclusive social programme in Brazil has been the tight control of inflation since 1995. In the 10 years from 1985 to 1995 when the belief for inclusion was already in place but the belief of inflation aversion was not, governmental over-

expenditures lead to a massively destructive decade of hyperinflation in which the poor where the most vulnerable given the regressive nature of an inflationary tax.

5.4 Public banks and anti-cyclical credit expansion

While social programmes and gains in agricultural labour income were important compensating mechanisms that helped to mitigate the impact of the food price crisis on the poor, it was also the case that the crisis did not have a very significant impact on the rest of the population that is not directly affected by those mechanisms. One important reason for this was the anti-cyclical policy adopted by the federal government to counteract the financial crisis that took place almost simultaneously with the food price crisis. Contrary to much of the developed world, where interest rates were close to zero, Brazil had much leeway for monetary policy given one of the highest interest rates in the world. The government also expanded its Programme for Growth Acceleration to counteract the effects of the global depression. In addition, as a complementary instrument against the effects of the financial crisis the government promoted a strong expansion of the availability of public credit making up for the retraction of credit from the public national and foreign banks. This policy was very effective in propping up the level of economic activity, avoiding unemployment, and generally deflecting many of the debilitating symptoms of the financial crisis (IPEA 2010). As private credit diminished in the wake of the crisis public credit increased, avoiding a fall in total credit. This policy could be quickly deployed because Brazil has a very highly developed system of public banks composed of a development bank (BNDES), a commercial bank (Banco do Brasil), and a savings and loans bank (Caixa Econômica Federal). Together these three institutions currently provide 42 per cent of the credit in the economy. Regardless of the merits and demerits of having such a large state presence in the banking system (and there are lots of controversies over this structure of the banking system in Brazil) the fact is that in the recent crisis it provided the government with a quick and effective instrument to counteract the effects of the global depression. Together with other measures, including reductions in various taxes on durable goods, these policies propped up the level of economic activity and consumption, with the result that consumers in Brazil were largely oblivious to the real extent of the world crisis. As a result of these policies millions of consumers made first-time purchases of goods such as refrigerators, cars, computers, as well as services such as airplane trips and holidays (Folha de São Paulo, 15 Dec. 2010). The impact of these anti-cyclical policies also played an important role in counteracting the harmful effects of the food crisis and helps explain why the country was so lightly affected.

5.5 Price transmission of world food prices in Brazil

Thus far the themes discussed in this section have been mostly concerned with the effect of increased food prices on the poor. That is, of the two fundamental concerns that we identified as the central motivations for the government in Brazil we have discussed several reasons why little additional action was needed by the government to protect the poor from the potential impacts of higher food prices. However, our characterization of political institutions in Section 4 held that the need to maintain price stability would override even the drive for inclusion. Therefore in this subsection the goal is to discuss to what point the food price crisis of 2007–08 presented a threat to the country's hard-won control over inflation.

In Section 3 we had presented data on the general rate of price changes and inflation specific to food. Figures 3 to 5 showed different aspects of the impact of international food prices on internal food prices and on the general inflation rate. This data showed that there was in fact a hike in the price of food in Brazil with direct effects on consumers. However it was also argued that throughout this period the general rate of inflation was always under control. The government's inflation target from 2005 to the present has been 4.5 per cent per year with bands ranging from 2.5 per cent to 6.5 per cent. The official rate of inflation (IPCA) since 2005 has been 2005: 5.69 per cent, 2006: 3.14 per cent, 2007: 4.46 per cent, 2008: 5.90 per cent, 2009: 4.31 per cent, 2010: 5.91 per cent, and 2011: 6.50 per cent. Therefore, even though inflation did start to creep towards the ceiling of the target in 2008, it was never the case that the situation had become critical and demanded drastic measures from the government. The main instrument for monetary policy through which the Central Bank influences the rate of inflation is the Selic interest rate, which is one of the highest in the world, due to the large demand for capital in a context of low savings. Starting in 2005 the Central Bank had been pursuing a policy of steadily reducing the interest rate, which had important positive effects on growth, investment, and the reduction of the public debt. However, in 2007 it had to interrupt that fall and by 2008 the interest rate was cautiously set on an increasing trend. It is hard to say how much of this tightening of monetary policy was due to food prices as several other determining factors were simultaneously at the play. The point here is to argue that although the increase in food prices was far from innocuous in Brazil, it was nevertheless the case that the country was well-positioned to deal with the potential threat it posed. Although the increase in interest rates that the rise in food prices contributed to make necessary was far from costless, the policy makers had the motivation and the incentives to address the problem promptly.

Another recent macro-economic concern in Brazil is that the tremendous entry of foreign currency has greatly valued the exchange rate in recent years from almost R\$3/US\$1 in early 2004 to almost R\$1.5/US\$1 in mid-2008. This trend is due to various macro-economic circumstances including great inflows of foreign capital driven by the conjunction of better governance, as reflected by the attainment of investment grade status and ample investment opportunities. One of these circumstances has been the great inflow of foreign currency due to systematic trade balance surpluses fueled by higher commodity prices. Although the instability in world markets wrought by the financial crisis in 2008 reversed the valuating trend of the Real, that trend has continued to increase the value of the Real since early 2009. The role and implications of the exchange rate valuation in macro-economic policy in Brazil is very complex and controversial. Whereas cheap imports serve as a powerful force for releasing inflationary pressures and high volumes of reserves provide the country a powerful cushion against international instability, some argue that the cheap Real may lead to the Dutch Disease and is already promoting a deindustrialization of the country. It is not our intention to delve into these issues in this paper. We just want to highlight that the movements of the exchange rate have crucial implications for the Brazilian economy, which means that the government will follow its evolution carefully and may have incentives to intervene in the case of perceived instability. Although the food price crisis of 2007–08 did not have greater consequences through the exchange rate, this is a potential channel through which future food price shocks may have an impact. However, there is some evidence that suggests that macro-economic policy makers in Brazil should be less concerned by real shocks, such as food price hikes, than monetary shocks. A study of the transmission of international commodity prices on the exchange

rate in Brazil (from 2000 to 2010) by Margarido, Serigati, and Perosa. (2010) found short term transmission of less than one and no long-term relationship.

5.6 Biofuels and the food price crisis

The use of agricultural land to produce biofuels is one of the main culprits listed in almost any discussion of the determinants of food price hikes.⁸ Because Brazil is one of the most advanced countries in the production and use of biofuels—practically all cars sold today can run on both gasoline and ethanol—it is worthwhile to consider to what extent this suggested link actually holds in the Brazilian case. We will just make two points about this issue. The first is to note that the nature of biofuel production in Brazil is significantly different than in most other countries, where the criticism is more applicable. According to *The Economist* (24 Feb. 2011):

Not all ethanols are the same. Brazil, the world's second-largest producer, makes its fuel mainly from sugar. Processing plants can go back and forth between ethanol and crystallised sugar at the flick of a switch, depending on prices. Brazil gets eight units of energy for every unit that goes into making it, so the process is relatively efficient and environmentally friendly. In contrast, American ethanol produces only 1.5 units of energy output per unit of input, but its inefficiency is underwritten by government subsidies and high tariff walls.

The second point to note is that although the area dedicated to sugar cane and other crops used for producing biofuels has grown significantly in the past decade in Brazil, this has not led to much displacing of the production of food crops. Brazil has over 400 million hectares of arable land, of which less than 40 million are currently in use, while the United States with slightly less than 400 million hectares of arable land already uses approximately half that area (*The Economist*, 28 Aug. 2010). In addition Brazil also holds access to more water than practically any other country, though it is true that other inputs such as roads and ports are still constraining. Although the issue is clearly more complex than the two points raised here, they should at the least suggest that also when it comes to the issue of the link between food prices and biofuels, compared to most other countries there are several mitigating circumstances in the Brazilian case.

5.7 Comparative reactions to the food price crisis

In this final subsection we briefly compare the reaction of the Brazilian government to the food crisis of 2007–08 to that of the Argentine government. This exercise is useful as it provides a counterfactual against which to better understand the analysis of the Brazilian case. It is a useful counterfactual because the two countries are similar in many ways and yet have some crucial differences. They are similar in that both are large Latin American countries, important producers and exporters of agricultural commodities, and both have been ruled by left-wing parties for nearly a decade now. The key difference between them is institutional. Whereas Brazil has undergone a quite exceptional process of institutional strengthening with improved rule of law and strong checks and balances against governmental opportunism—as described in Section 2—

⁸ See Runge (2010) for a review of the scientific research finding against the environmental merits of biofuels and making the link to higher food prices. In 2007 a UN expert called biofuels a 'crime against humanity'.

Argentina has taken almost the opposite path (Spiller and Tommasi 2007). Although both countries have strong executives, in Argentina there are few checks against the abuse of that power. Whereas Brazil has an independent supreme court, for example, that frequently rules against the executive, in Argentina every supreme court in the past 50 years has been controlled by the presidency (Alston and Gallo 2008). Without checks the Argentine government has systematically abused its power, for example by defaulting on its debt, fiddling with the country's statistics, limiting the freedom of the press, violating Central Bank independence, confiscating private savings, and currency controls, among many others.

Because Argentina is a democracy with regular elections, where the median voter has a much lower income than the mean voter, the government has strong incentives to seek the support of the poor. However, contrary to Brazil where strong checks on the abuse of governmental power have led to virtuous incentives and constraints, in Argentina the result has been populism. This state of affairs has led to high levels of inflation, social commotion, debt default, and consequently a severe lack of credibility and difficulty in accessing capital markets, which has already impacted investment and should eventually have a negative effect on growth. It is thus interesting to consider the differential responses of the Brazilian and Argentine's government reaction to the increase in food prices in 2007–08.

In Argentina the government arbitrarily increased the export on farmers in 2008 arguing that they were receiving a windfall due to high commodity prices. This move had both the intention to raise badly needed revenue and to keep down local prices as inflation was already out of control. Farmers reacted with roadblocks and protests divided the country. Eventually the senate, in a rare defiance to the executive, barred the tax increase, yet the remaining climate of uncertainty has already reduced investment. According to *The Economist* (24 Sept. 2011)

Since then the country has restricted maize and wheat exports, leaving farmers with an estimated 4m tons of maize they can neither sell at home nor ship abroad. Beef exports have also been limited, which caused ranchers to stop raising cattle and led to lower leather output and beef consumption. Many foreign leather firms, such as Italy's Italcuer, have left.

In Brazil, on the other hand, the government took the opposite line of action by increasing farm credit and providing farmers incentives to increase productivity (New York Times, 28 Aug. 2008). The government did decide to suspend the exports of rice temporarily in 2008, but only from the government's own stocks. No restrictions were considered over private exporters.

Our interpretation of these events is not that one country has better rulers than the other. Both are subject to electoral pressures and increasing food prices create incentives for governments to intervene, including in opportunistic ways. However, in Brazil the president faces a series of checks and balances that in most cases dissuades or limits this type of behaviour. In Argentina the government faced rapidly rising inflation and a dire need for revenue. Without restraining forces the temptation to expropriate part of the farmers' windfall was just too great to resist.

6 Conclusions

This paper portrayed the subdued reaction by the Brazilian government and other players to the food price crisis of 2007–08 as a paradox. Given the incentives inherent in the country's political institutions one would have expected that the threat presented by significantly higher food prices to have elicited a more rambunctious reaction. The paper has shown that although the threat was indeed real, such a response was not needed. This was so partly because the crisis presented several benefits to the Brazilian economy that mitigated the effects on the poor and on inflation. Additionally, incentives in political institutions had, even before the crisis, led to the creation of several programmes and mechanisms to promote social inclusion and to maintain price stability, so that when those pressures emerged from the international hike in food prices, those objectives were already insulated or could be easily defended. These circumstances were not a coincidence or a stroke of luck, but rather structural characteristics of the Brazilian economy and political institutions, so that if food prices continue to increase, as seems likely to be the case, the analysis in this paper indicates that Brazil will be well-placed to respond.

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Table 1: Expenditure, income and transfer effects of the 2007–08 food crisis on poverty and inequality

	Baseline (pre-crisis)	Expenditure Effect	Expenditure and Market Income Effects	Expenditure, Market Income and Transfer Effects
Extreme poverty				
Large urban areas	11.15 (0.19)	12.34 (0.20)	12.25 (0.25)	12.18 (0.21)
Rural	17.05 (0.39)	21.03 (0.33)	18.62 (0.39)	18.16 (0.39)
Brazil	11.04 (0.14)	13.53 (0.11)	12.90 (0.14)	12.75 (0.15)
Inequality				
Large urban areas	55.7 (0.003)	56.5 (0.002)	56.4 (0.002)	56.4 (0.003)
Rural	49.7 (0.005)	51.1 (0.005)	50.7 (0.005)	50.5 (0.005)
Brazil	55.7 (0.002)	57.0 (0.002)	56.7 (0.002)	56.6 (0.002)

Notes: Standard errors in parentheses. A pass-through of 50% of food prices to labour income is assumed.

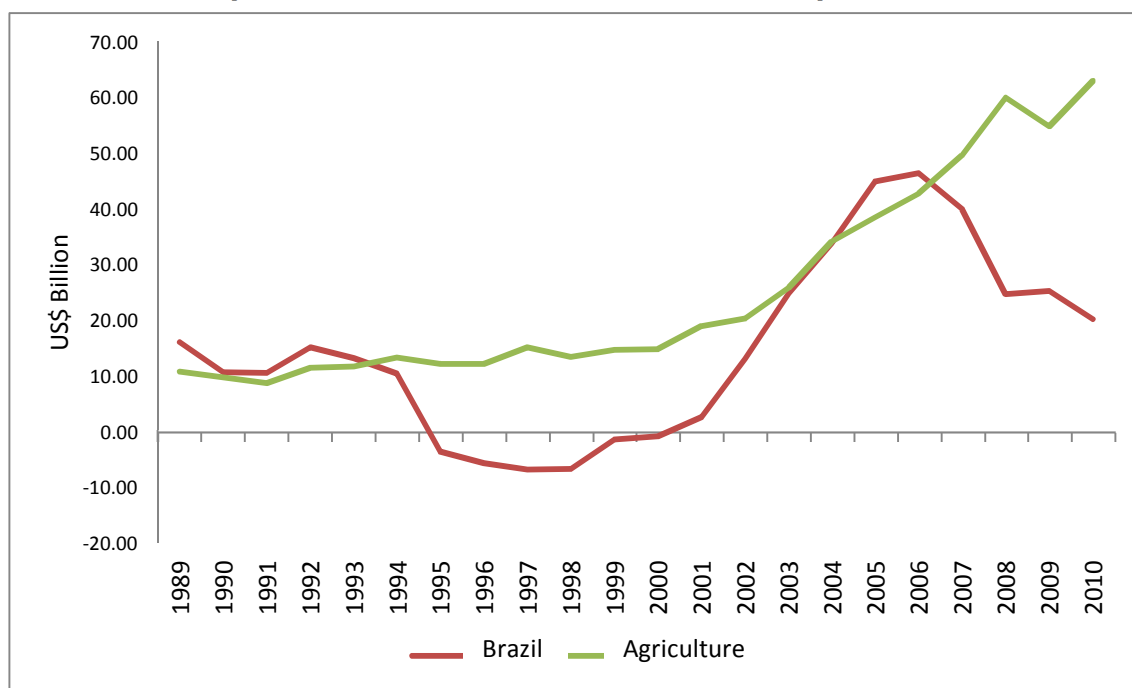
Source: This table summarizes results from Ferreira et al. (2011).

Table 2: Action Aid (NGO) ranking of developing countries efforts to fight hunger

Country and rank	Hunger outcomes and trend	Smallholder agriculture	Social protection	Legal framework	Gender equality	Overall rank
Weight	10%	30%	15%	10%	5%	100%
Brazil	4	26	1	1	1	1
China	2	1	25	25	2	2
Vietnam	3	3	28	26	13	3
Malawi	11	2	4	4	7	4
Ghana	1	21	16	16	5	5
Bangladesh	10	5	11	11	10	6
Mozambique	7	13	8	8	9	7
Uganda	8	15	3	3	8	8
Guatemala	9	28	2	2	6	9
Ethiopia	17	4	14	14	4	10
Rwanda	12	7	8	8	20	11
Cambodia	5	19	21	21	12	12
Nigeria	6	24	15	15	3	13
Nepal	13	9	11	11	23	14
Tanzania	14	6	10	10	16	15
Kenya	15	14	11	11	22	16
Senegal	16	12	22	22	15	17
Liberia	20	22	16	16	18	18
Zambia	21	8	26	26	26	19
Haiti	23	11	7	7	27	20
India	24	20	5	5	11	21
South Africa	26	16	6	6	21	22
Lesotho	18	22	26	26	27	23
Gambia	19	17	22	22	24	24
Pakistan	22	15	13	13	19	25
Sierra Leone	25	10	16	16	17	26
Burundi	28	18	22	22	14	27
D. R. Congo	27	27	20	20	25	28

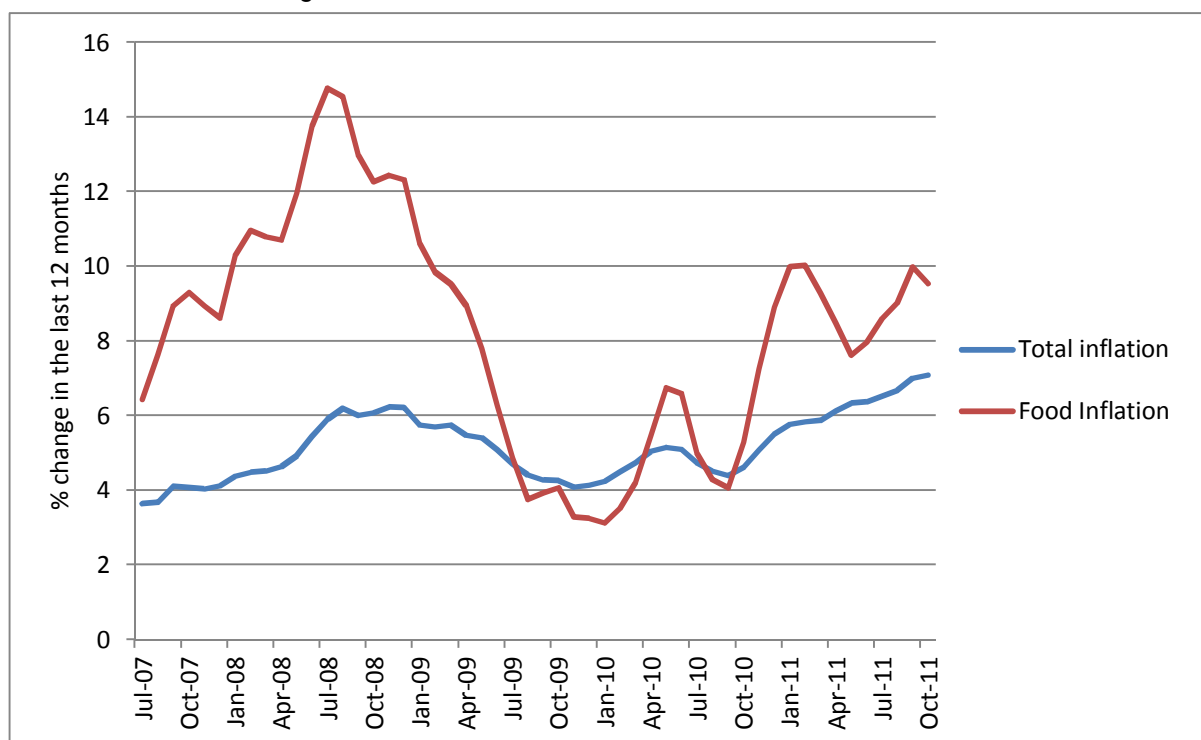
Source: ActionAid (2010).

Figure 1: Commercial balance for Brazil: total and agribusiness



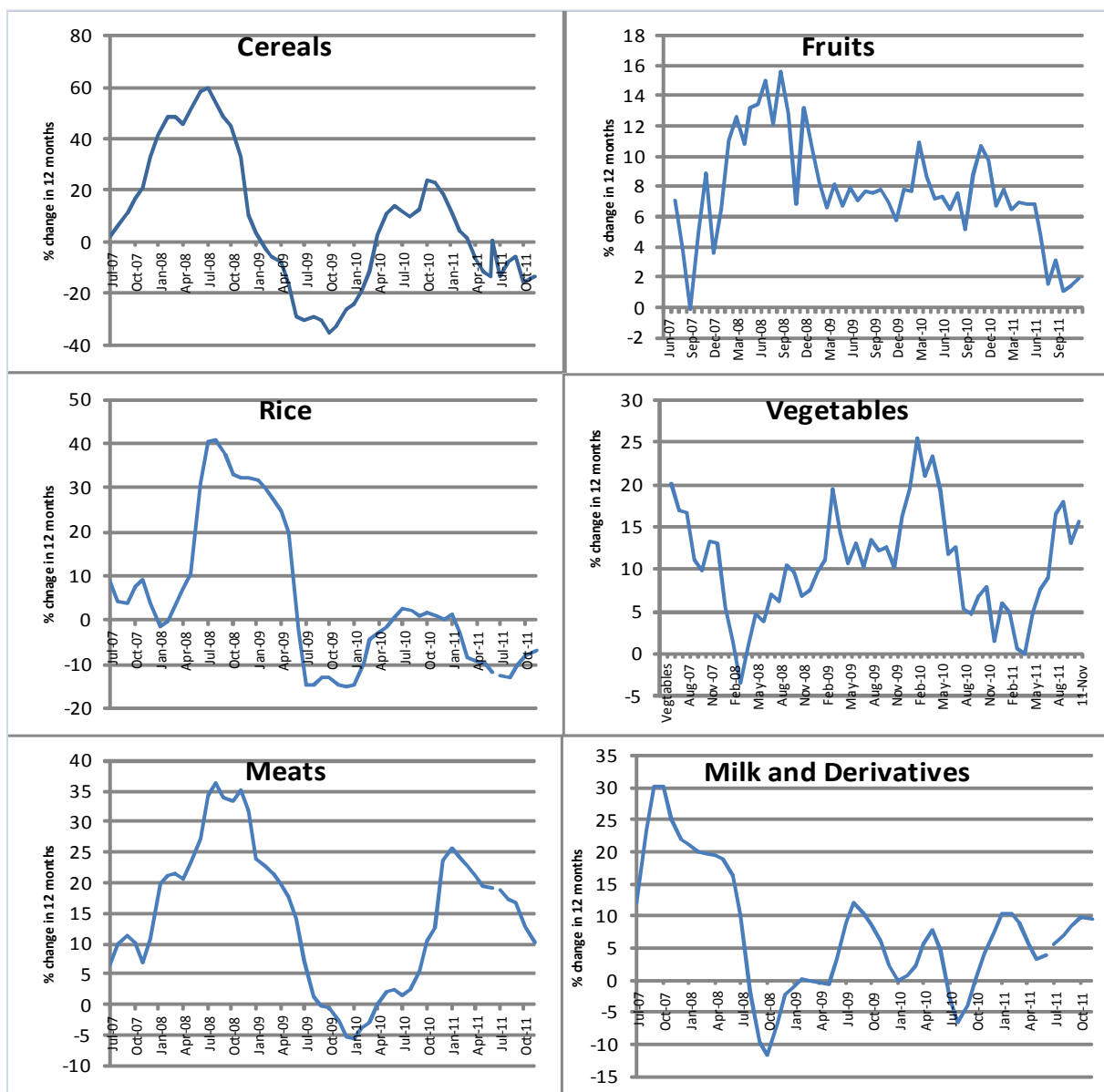
Source: Data from the SECEX/MDIC system as compiled by CGOE/DPI/SRI/MAPA.

Figure 2: Total inflation and food inflation, 2007–11



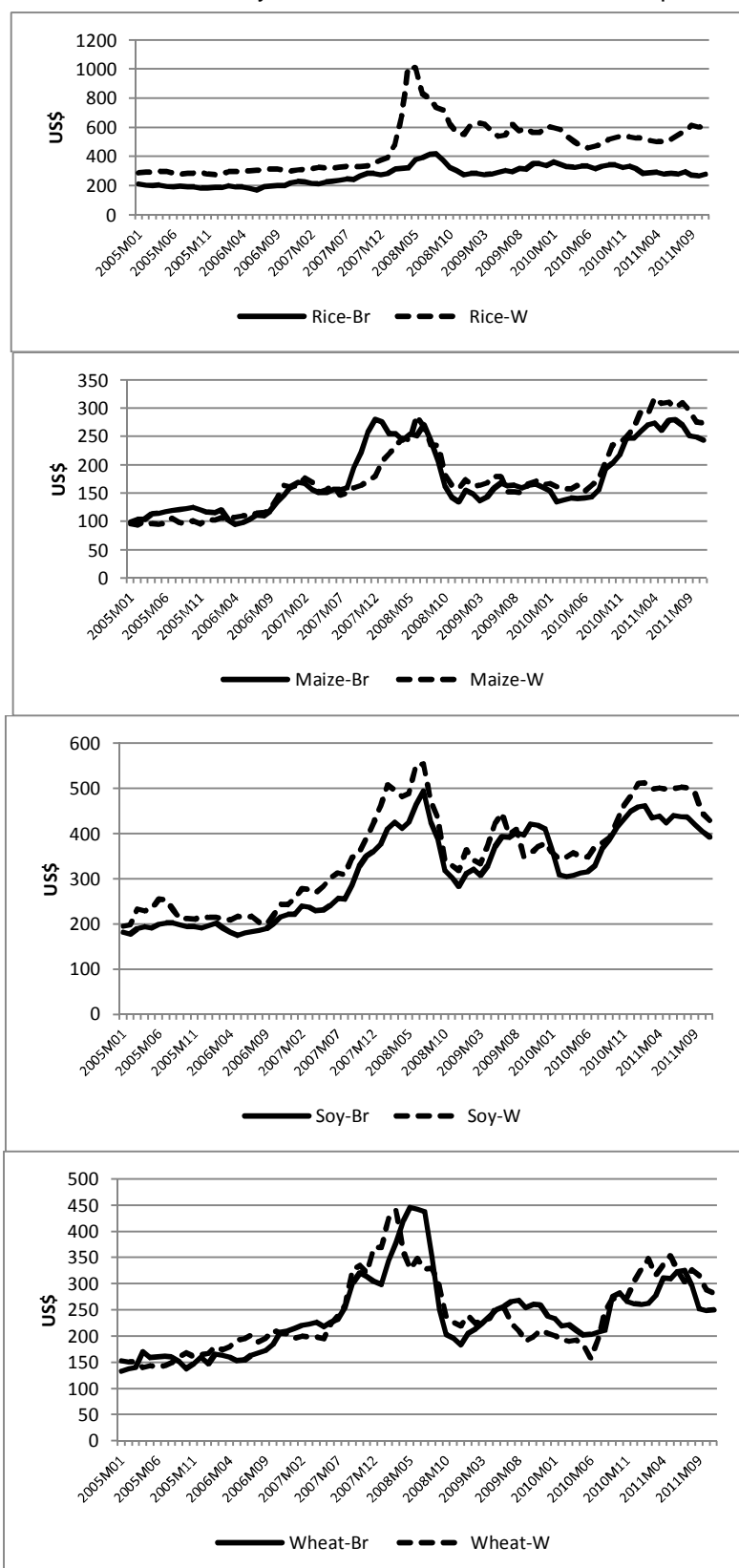
Source: IBGE Índice Nacional de Preços ao Consumidor (INPC), indices available at www.ibge.gov.br.

Figure 3: Consumer price increase for selected food items (% change in 12 months)



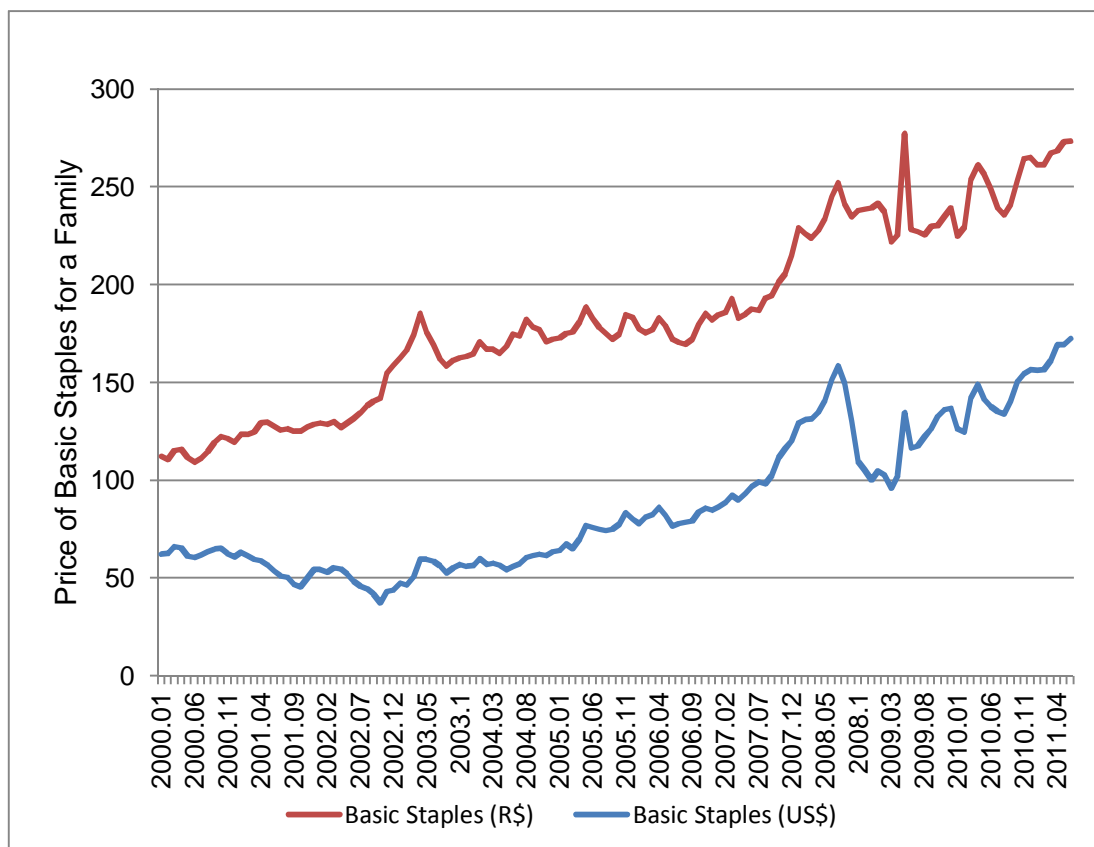
Source: IBGE Índice Nacional de Preços ao Consumidor (INPC).

Figure 4: Prices received by farmers in Brazil vs. world market prices (US\$)



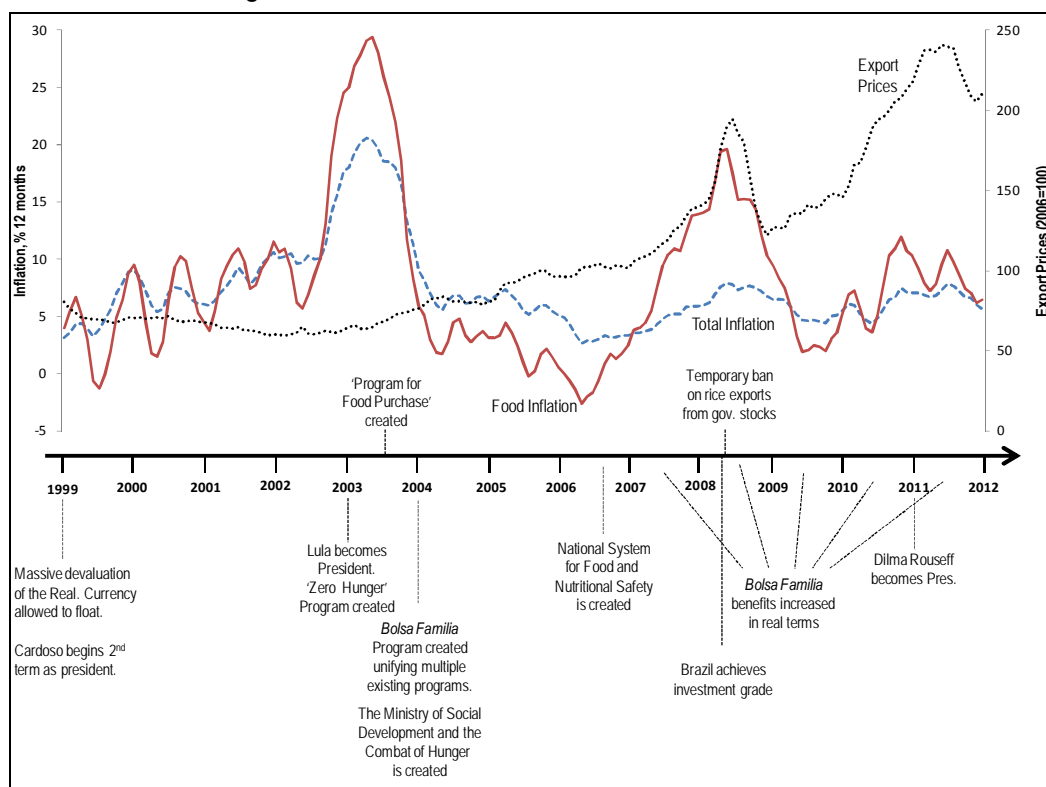
Source: Prices received by farmers in Brazil from Instituto de Economia Agrícola <http://www.iea.sp.gov.br/out/index.php#>. The original data in Brazilian Reais for a 60kg. sac was transformed into US\$ per metric ton. World market prices from IMF Primary Commodity Prices in dollars per metric tons: <http://www.imf.org/external/np/res/commmod/index.aspx>.

Figure 5: Price of basic staples for a typical family



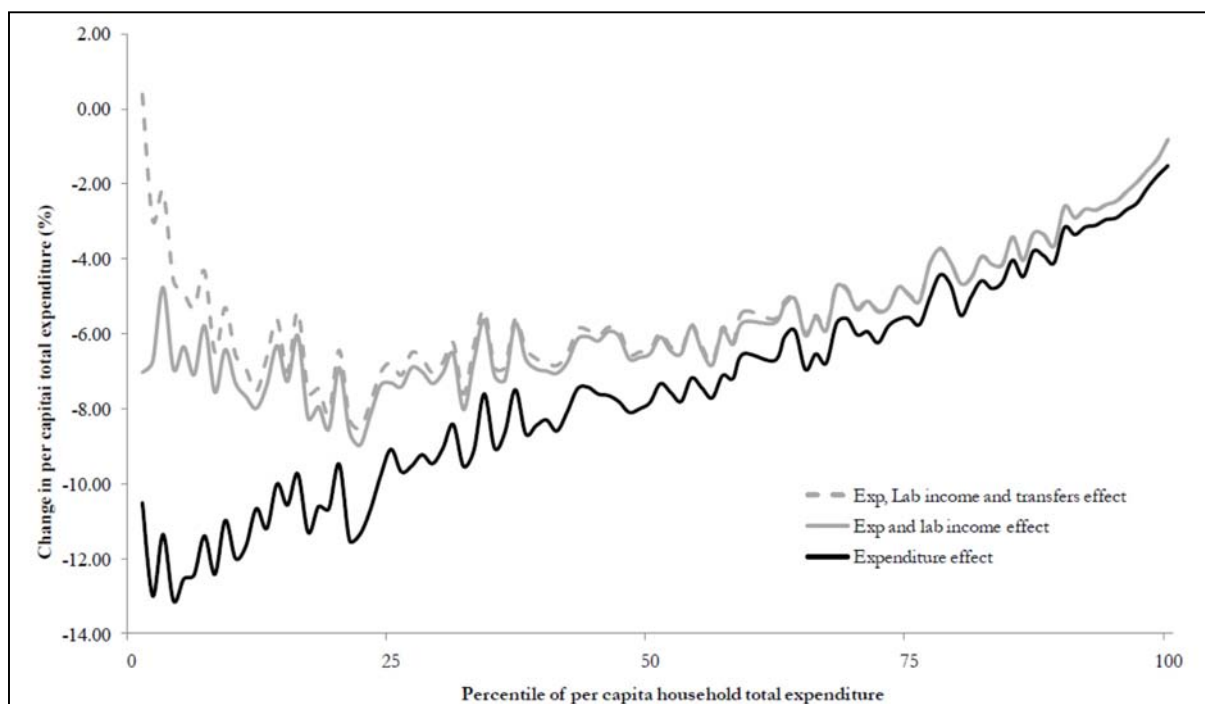
Source: Dieese <http://www.dieese.org.br>. Nominal prices.

Figure 6: Timeline of the food crisis in Brazil



Source: Total and food inflation from IBGE Índice Nacional de Preços ao Consumidor (INPC). Export prices from Boletim Funcex de Comércio Exterior (www.ipeadata.gov.br).

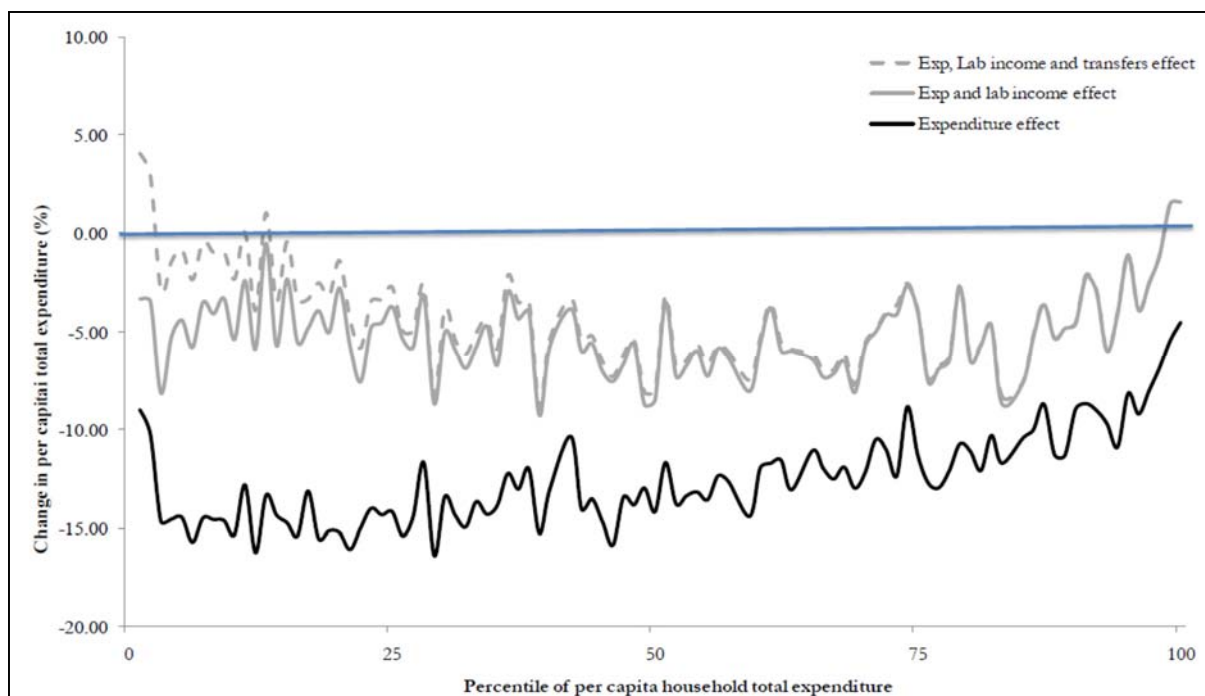
Figure 7: Price increase incidence curve—Net effect (Brazil)



Note: This figure uses 50% pass-through of commodity prices to agricultural wages.

Source: Ferreira et al. (2011) with data from IBGE Household Survey (POF) 2002/2003.

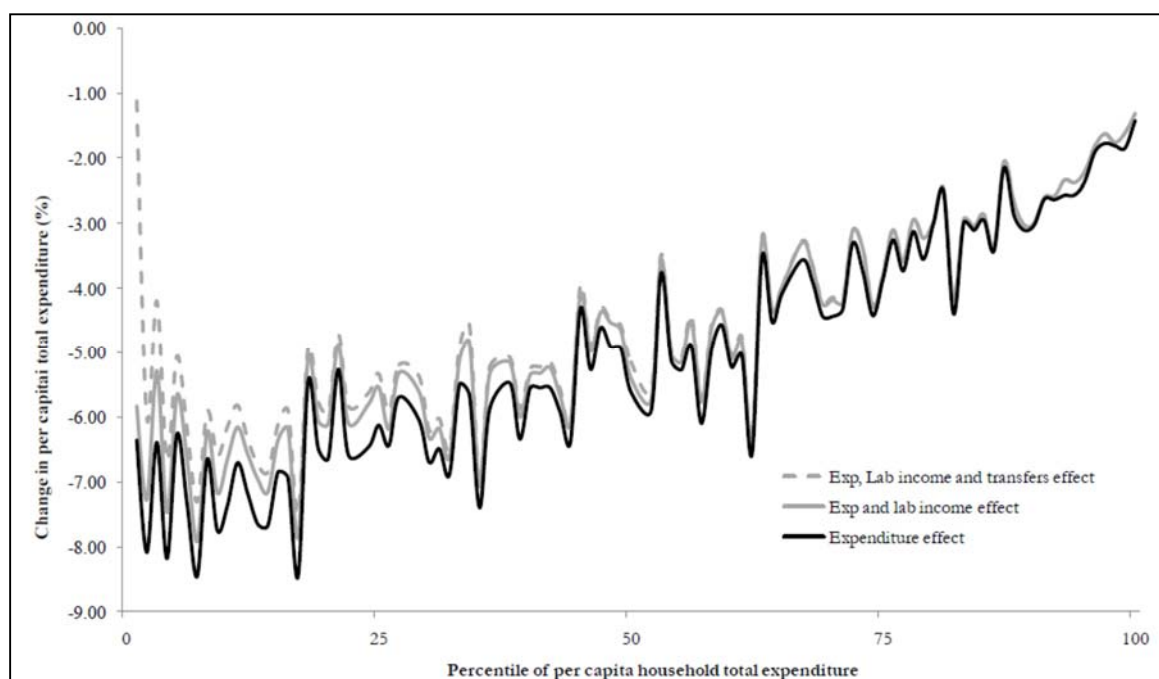
Figure 8: Price increase incidence curve—Net effect (rural areas)



Note: This figure uses a 50% pass-through of commodity prices to agricultural wages.

Source: Ferreira et al. (2011) with data from IBGE Household Survey (POF) 2002/2003.

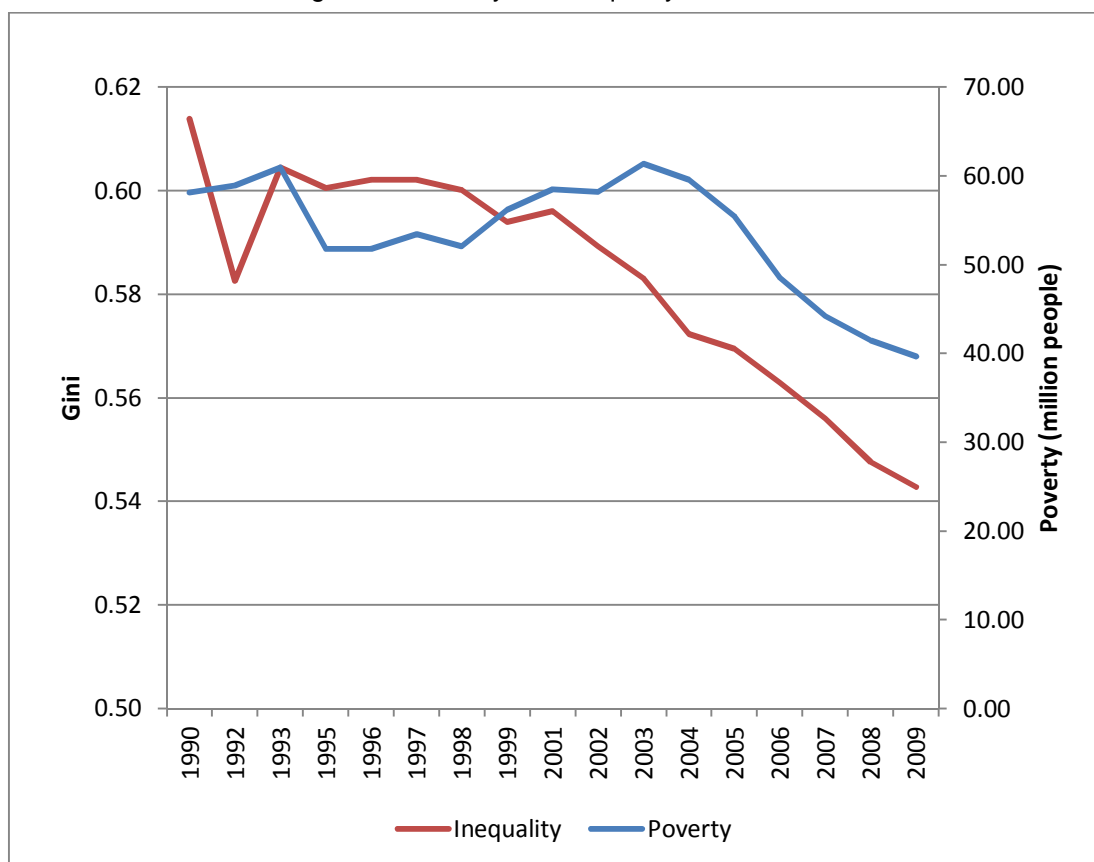
Figure 9: Price increase incidence curve—Net effect (urban areas)



Note: This figure uses a 50% pass-through of commodity prices to agricultural wages.

Source: Ferreira et al. (2011) with data from IBGE Household Survey (POF) 2002/2003.

Figure 10: Poverty and inequality in Brazil, 1990–2009



Source: IPEADATA <http://www.ipeadata.gov.br/>