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TRANSFOP
Transparency of Food Pricing

Experience of Food Price Inflation across the EU

Non-Technical Summary

The background to the TRANSFOP research project can be traced to the global commodity price surge of 2007 and 2008 with world prices of many agricultural and energy commodities rising, in nominal terms, to record levels. Although world prices fell back in 2009, by 2011, world commodity prices again rose and exceeded the peak levels recorded in 2008. The domestic impact of these events on global markets was reflected in higher levels of food price inflation though, despite the apparently 'common' nature of the global shocks, the effect on domestic food price inflation varied markedly across countries. This was perhaps most noticeable in the experience of many developing countries and certainly when contrasting the experience of emerging and developing economies with advanced economies. The general reasons for this broad experience can readily focus on the use of government policies via domestic intervention, the use of safety nets and changes in border measures (FAO, 2009). However, the experience of food price inflation has varied considerably across advanced economies and is also apparent among EU countries. Accounting for this is more difficult given the role of common trade and agricultural policies across the EU and the existence of the so-called 'single market'. Identifying the factors that potentially determine the links between what happens on world markets and the resulting effect on domestic retail food prices is a key overall aim of the TRANSFOP project, which will address these issues through state-of-the-art research in several EU countries.

This report highlights the contrasting experience of food price inflation across EU Member States with the evidence gathered from a range of sources. In particular, it will focus on the relationship between overall inflation, food price inflation and non-food price inflation. It will highlight how food price inflation has developed in the face of world raw food price changes and concomitant domestic agricultural producer price changes. While the focus is on food price inflation across the EU, the evidence is supplemented by other non-EU country experiences, with the emphasis on how the experience of inflation – food and non-food – has changed over time.

As well as providing a background report on the experience of food price inflation, the report will also highlight recent developments in the academic literature that identify some of the potential factors that may give rise to the variation in experience across advanced countries and the EU more specifically. This is important as these issues will be further addressed as the TRANSFOP research project progresses.

Experience of Food Price Inflation across the EU

Introduction

> *"Rapidly rising prices for globally traded commodities have been the major source of the relatively high rates of inflation we have experienced in recent years, underscoring the importance for policy of both forecasting commodity price changes and understanding the factors that drive those changes" –Ben Bernanke (2008)*

The above quotation from Ben Bernanke, the Chairman of the US Federal Reserve is revealing on two accounts. The first is the renewed concerns with inflation in recent years. Over much of the late 1990s and 2000s, rates of inflation across many developed countries were rather low (at least based on historical experience). This has been described rather dramatically by some, as the "death of inflation" (Bootle, 1996). Accompanying the decline in the levels of inflation was also the decline in the volatility of both inflation and output. This was often referred to as the "Great Moderation"[1]. There have been several possible factors explaining this decline in volatility, including structural changes to the economy, better functioning of macroeconomic policies or, simply, 'good luck' i.e. the absence of significant exogenous shocks that were typical of the macroeconomic environment in the 1970s[2]. However, with the run-up in commodity prices culminating in the commodity price spike of 2007-2008, there were increasing concerns about the effect of commodity prices on domestic inflation across both developed and emerging and developing economies. In their Global Economic Prospects Report of 2009, following these events on global commodity markets, the IMF posed the question "Is Inflation Back?" (IMF, 2009). However, in terms of Bernanke's focus, the emphasis was placed on understanding what drives prices on world markets. This was also reflected in the large number of studies and commentaries that aimed to explain the reasons for the 2007-2008 global commodity price 'spike'. Yet the effect of these commodity price fluctuations on domestic retail prices for food is what really matters for consumers and in determining the impact of commodity price changes on inflation, the interesting and most obvious data to note is that the experience of food price

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[1] Blanchard and Simon (2001) was one of the early papers that highlighted this phenomenon in the US economy.
[2] Bernanke (2004) provides a useful discussion of these issues.

inflation differed markedly across many countries, despite the apparently 'common' nature of the global commodity price shock.

The contrasting experience of food price inflation following these events on global commodity markets was most notable when contrasting the experience of advanced economies and emerging and developing economies (see IMF, 2009). However, the experience of food price inflation also varied considerably across EU countries and continues to do so. This creates an important issue for research: in the context of an environment with 'common' trade and domestic policies, where some countries have common monetary and exchange rate arrangements and given the existence of a so-called 'single market' that enhances integration between Member States, why should the experience across EU Member States vary so widely? By way of highlighting these differences, Table 1 reports annual food price inflation for several EU Member States as of the end of 2011. As is evident from the table, the experience varies considerably from deflation in the Netherlands to high levels of food price inflation in Estonia and Hungary. Even where countries are geographically close and have common monetary policy and exchange rate arrangements, the rate of food price inflation can be very different (compare, for example, Germany with Austria). The research issues therefore should focus not solely on what drives world prices (as per Bernanke's observation) but what drives prices in the national retail sector and what economic mechanisms drive the vertical linkages that relate world raw commodity prices with retail food prices.

This distinction may be obvious but is commonly ignored in much research particularly when reference is made to world "food" prices. Such an apparent causal link of course implicitly assumes that world food prices are the same as domestic consumer prices and yet they are not; world food prices relate to the raw commodity traded globally such as wheat, corn, soya and sugar whereas the prices faced by consumers in retail stores relate to often highly processed goods in which the raw food is only a fraction of the final cost of production. Thus, while there would appear to be grounds for some link between world prices and what happens at the retail level, what factors determine the comparative experience in the dynamics of food price inflation across EU Member States (and indeed more extensively across both advanced and emerging and developing economies), is an important issue to address.

This turns the focus to a number of research questions: What factors determine consumer prices? What is the nature of transmission between raw (both global and domestically-produced) and final retail food prices? What is the nature of the supply chain that determines these price transmission effects and why they should vary across EU countries?

Table 1: Annual Food Price Inflation Across Selected EU Countries: 2011

| Country	Annual FPI (%)	Country	Annual FPI (%)
Austria	4.2	Hungary	7.2
Belgium	2.4	Ireland	1.2
Denmark	4.0	Netherlands	-0.9
Estonia	9.7	Poland	5.2
Finland	6.3	Spain	2.1
France	2.0	Sweden	1.3
Germany	2.9	UK	5.4

Source: OECD

The aim of this report is to provide the background experience of food price inflation across EU states. In doing so, we highlight recent events on world markets, the varying experience of food price inflation across the EU Member States, and highlight how the food inflation experience differs from non-food price inflation. By way of focussing the research agenda, we also refer to recent developments in the academic literature about why food price inflation may or may not be important to stakeholders and policymakers and the potential factors that could give rise to the variance in the experience across EU Member States. These issues will be explored in further detail by the TRANSFOP project. This paper is organised as follows. In Section 2, we comment briefly on the significance of focussing on food price inflation. In Section 3, we review recent events on world commodity markets and the experience of 'headline' inflation across EU Member States; these events serve as background to addressing the differences between food and non-food inflation which we also discuss in this section. Details on how food price inflation has differed across EU Member States are reported in Section 4. In Section 5, we discuss the links between global commodity prices, commodity prices in the EU and the corresponding behaviour of retail prices. These highlight how prices at different stages of a vertical chain may behave differently even though the retail food products and the raw commodities are linked.. In Section 6, we draw on the recent academic literature to

highlight what factors may give rise to this contrasting experience. In Section 7, we conclude with some comments on the emerging research agenda. The Appendix reports data on food and non-food inflation using several metrics across all EU Member States, the data presented in the text relating to summarising the experience and highlighting the variance of this experience across the EU.

2. Does Food Price Inflation Matter?

If inflation is the most regressive of all taxes (Rogoff, 2009), then food price inflation is the most regressive component. Although at an aggregate level expenditure on food may account for a relatively small share of total expenditure (on average, 14 per cent across the EU), with food being a staple, rising prices of food will have a disproportionate effect on the poorest segments of society who spend a higher share of their income on food. Even the aggregate statistic for the EU hides the wide variation on expenditure shares across EU countries as reported in Figure 1 with the expenditure shares on food in the UK and Luxembourg being less than one-third of those in Romania and less than one half than Spain, Bulgaria, Latvia and Lithuania.

Figure 1: Share of Household Expenditure on Food Across EU27
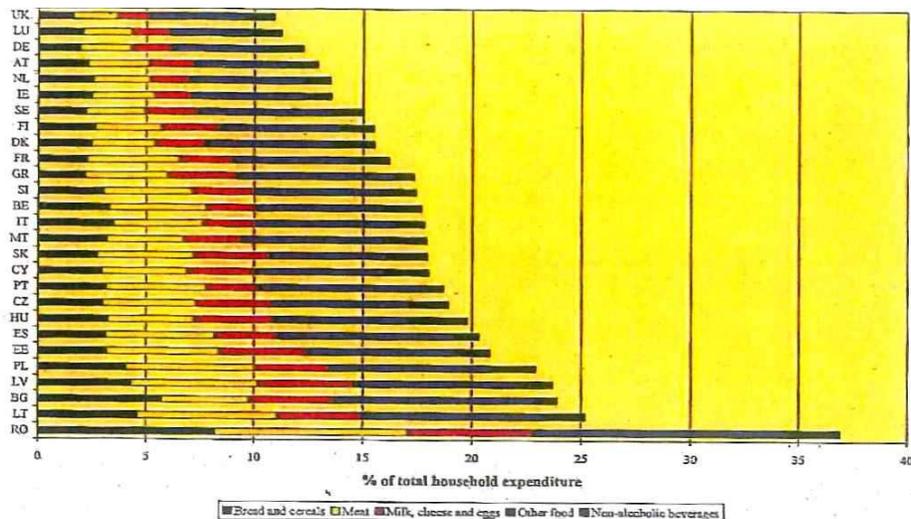
Source: Eurostat

Headline rates of inflation[3] have also varied across EU countries which are detailed in Table 2 which reports the average of the headline inflation rates over the period 2007-2011. There are two notable features about this data. First, it can vary quite significantly across countries with notable high rates of headline inflation in Hungary and Poland. Second, and as we will highlight in greater detail later, food price inflation is typically in excess of the headline inflation rate. These differences could reflect a number of factors but may, in part, reflect these expenditure shares across EU Member States as reported in Figure 1. Given the higher share of food in total consumer expenditure, the weight of food prices in the aggregate measures of inflation will also vary[4].

Table 2: Average Headline Inflation in EU Member States, 2007-2011

Country	Annual Average CPI (%)	Country	Annual Average CPI (%)
Austria	2.17	Hungary	5.25
Belgium	2.36	Ireland	1.16
Denmark	2.27	Netherlands	1.76
Estonia	4.89	Poland	3.38
Finland	2.20	Spain	2.28
France	1.59	Sweden	1.83
Germany	1.72	UK	3.12

Source: OECD

However, despite the obvious impact on consumer and household budgets that rising food prices will clearly have, it is less obvious what the response of macroeconomic policymakers should be. This is due to the fact that the concerns of macroeconomic policy focus on 'core' inflation which generally is the headline inflation rate with food (and energy) prices taken out. It is this 'core' rate which is seen to be important for setting macroeconomic policy. Why then is it the case that with rising commodity and food prices, reflected in food and headline inflation across many countries that macroeconomists set issues of food price inflation aside when it comes to anti-inflationary policy? The answer lies in the observation that commodity and food price shocks and volatility are seen to be transitory in nature and may not affect

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[3] By headline rate we refer to the all products Consumer Prices Index (CPI), which is similar to the Retail Prices Index (RPI), except that the latter for some countries includes housing costs.
[4] Specifically, the weight of the product in the Consumer Price Index is the proportion of total household expenditure which is spent on that product during the reference period.

"inflationary expectations". The key link here is the so-called propagation mechanisms or second round effects (OECD, 2008) i.e. the way in which food price inflation will affect non-food (or 'core') inflation. Specifically, if food price inflation was high and persistent, then this would affect wage inflation across the whole of the economy (say through bargaining by labour unions). The emphasis here is not just on the level but also the persistence: in these circumstances, food price inflation would matter for macroeconomic policy. But if food price inflation is transitory and non-persistent, then the propagation mechanism will be weak and food price inflation should be set aside by macroeconomic policy makers. Further, targeting inflation in response to transitory events will only result in output volatility. In sum, more stable headline inflation targets can be met by the monetary authorities focussing on the underlying ('core') level of inflation.

In light of recent events on global commodity markets and domestic food (and energy) price inflation, there has been some research addressing these issues. Cecchetti (2007) notes that excluding food from core price inflation will only be justified if the long-run mean of food and non-food inflation are equal; if they are not, then this may justify greater focus on food inflation by monetary authorities. In a recent empirical study focussing on this issue, Cecchetti and Moessner (2008) conclude that core inflation does not converge to headline inflation (highlighting the transitory nature of food price inflation) and that higher global commodity prices (as reflected in domestic food price inflation) have not generated strong second round effects on core inflation. IMF (2011) address these issues across a large sample of advanced and emerging/developing economies, while Walsh (2011) focuses on various measures of persistence and transmission between food and non-food price inflation again across a large sample of advanced and emerging/developing countries. These studies broadly lend support to the exclusion of food price inflation from 'core' measures, confirming that food price inflation does not result in significant second round effects. Setting aside food price inflation may not be the optimal policy in all circumstances however: Anand and Prasad (2010) show that in economies where food expenditure shares are high and in the presence of financial frictions (e.g. borrowing contraints), the optimal policy may be for the government to focus on headline inflation (i.e. inclusive of food price inflation) in stabilising prices and output in the economy.

Finally, there are more sector-specific concerns associated with the impact of commodity price shocks throughout the food supply chain. In the context of vertically-related markets, the prices for raw commodities - whether on world or domestic markets-tend to be more volatile compared with the 'final' product sold at the retail stage. We confirm this with data presented in Section 5 below. To some extent, this reflects the share of raw inputs in the value-added of the final processed food product which, on average, is around 25 per cent but can be considerably less. But it also gives rise to issues of asymmetry i.e. that when raw commodity prices go up, retail food prices increase but that the subsequent decline in the raw material price is not fully reflected in commensurate declines in the retail price. In part, this is related to the inflation aspect of food prices i.e. how prices at one stage are transmitted to prices at another stage, but more broadly it reflects arguments on the functioning of food supply chains and, with this, issues associated with bargaining power and increasing market concentration at various stages of the food supply chain (Burkovite *et al.,* 2009). These issues are of direct concern to stakeholders and policymakers that have direct interest in welfare at constituent parts of the food supply chain and, more broadly, for the appropriate role of agricultural and competition policies.

3. World Commodity Prices and Food and Non-Food Inflation

In this section, we report on events on world commodity markets since the mid-2000s to date and summarise the experience of headline inflation across EU Member States. We report on headline inflation and highlight the distinction between food and non-food inflation at an aggregate level in the EU. This provides background to a more detailed discussion of food price inflation in EU Member States which is addressed in the subsequent section.
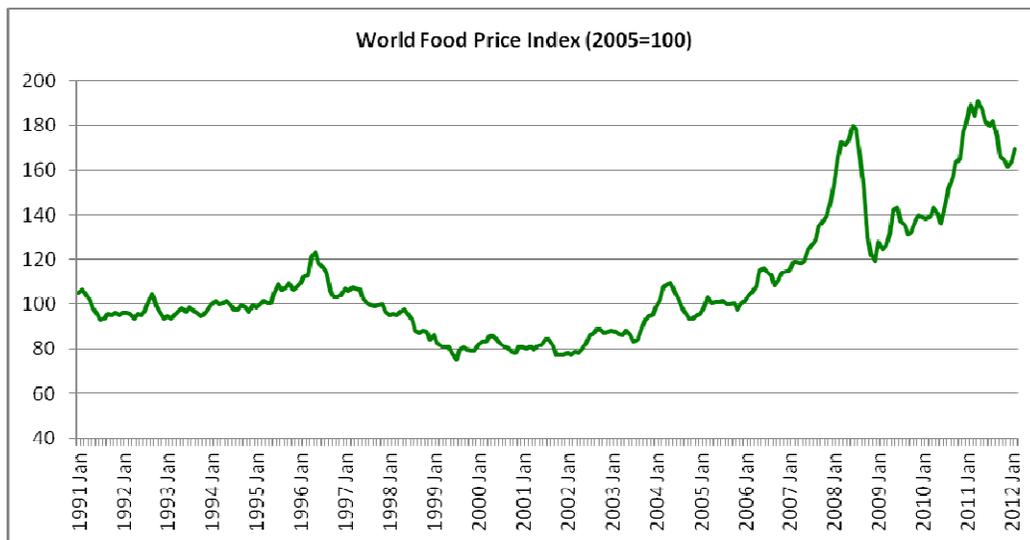
(i) World Commodity Prices
Figure 2 shows the experience of world food commodity prices from 1990 to 2011. It is evident from this figure that world food prices (in nominal terms) were low and relatively stable from the early 1990s to the mid-2000s[5]. From the mid-2000s

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[5] World prices were also low and relatively stable in real terms.

onwards, world food commodity prices started to rise culminating in the commodity price 'spike' of 2007-2008. The significance of this commodity price spike was that it took place against the background where the world economy had become used to relatively low and stable world commodity prices, a situation that paralleled the commodity price shock of 1972-1974 which occurred against the background of low and stable prices of the 1960s.

Figure 2: Monthly Food Price Index, 1990-2011

Source: IMF Primary Commodity Prices (http://www.imf.org/external/np/res/commod/index.aspx)

The causes of the 2007-08 commodity price spike have been covered extensively elsewhere[6] and related to a series of long-term or structural factors (for example, economic growth in emerging economies (particularly China) with this being reflected in rising demand for food, high energy prices and the switch to bio-fuels particularly in the US) as well as a range of short-term factors (including factors adverse weather conditions, low levels of stocks across many countries, the 'financialisation' of commodity markets and the depreciation of the US dollar). The response of governments was also important as they sought domestic food price stability with some exporting countries imposing export taxes and importing countries reducing applied tariffs which contributed to the volatility in world market prices (see Martin and Anderson, 2011). World food prices fell in 2009/2010 but there was a
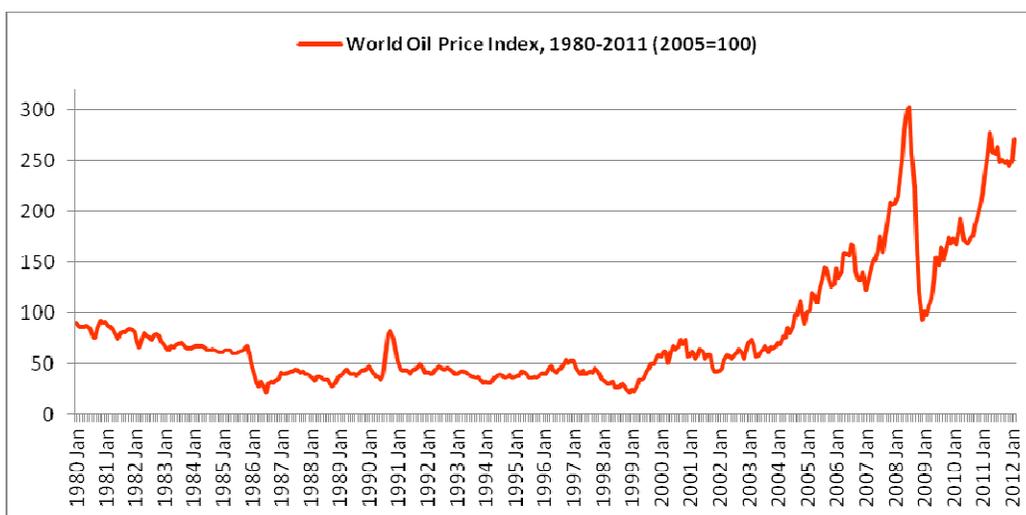
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[6] Examples include Abbott *et al.* (2009), Baffes and Haniotis (2010), Heady and Fan (2008), Wright (2011) and Trostle *et al*. (2011).

renewed surge in 2011 with world food prices exceeding, in both nominal and real terms, the much-publicised commodity spike of 2007-08.

(ii)World Oil Prices

Oil prices as well as global agricultural commodity prices will likely be an important part of the inflation experience. Figure 3 highlights developments in world oil prices (in nominal terms); as is clear from the data, world oil prices have also risen sharply from the mid-2000s onwards with an oil price spike in 2008. World oil prices remain highly volatile with oil prices also continuing to rise in 2011 and into 2012. What happens in world oil markets has significance for addressing food price inflation across the EU, from several standpoints. First, there is increasing evidence of closer linkages between world food and oil prices, partly reflecting the energy intensity of agriculture but also via the links to bio-fuel policies particularly in the US. These policies can have a significant effect on land allocation for cereals crops thereby being an increasingly important factor that may determine world agricultural prices and-in turn-domestic food prices (Hertel and Beckman, 2011). Second, oil and energy prices are an important input into the food supply chain and can therefore affect retail food prices, irrespective of their impact on world agricultural prices. The potential implication of this is that econometric models of food price inflation should also allow for the effect of oil prices (see Davidson *et al*. 2011). Finally, given the importance of oil prices to the macroeconomy, and as we detail below, there has been a body of research on the inflationary impact of oil prices. Given that the determinants of food price inflation are relatively unexplored from a research perspective, models that evaluate oil price impacts and how they may vary across countries may hold important lessons and insights for addressing food price inflation. We comment on this latter issue in Section 6.

**Figure 4: World Oil Price Index, 1980-2011 (2005=100)**

Source: IMF Primary Commodity Prices (http://www.imf.org/external/np/res/commod/index.aspx)

(iii) The Inflation Experience

As noted in the Introduction, inflation had become less of a pre-occupation for macroeconomic policymakers across many countries. The so-called "great moderation" is apparent throughout the late 1990s till the mid-200s and is reflected in the data presented in Figure 4 for the OECD in general and separately for the US and the EU. Taking the OECD as a whole, general inflation fluctuated-in most years-between 2 and 4 per cent, a significant decline from the high levels of inflation of the 1970s and 1980s. It is evident from Figure 2 that general inflation began to rise from the mid-2000s onwards and with renewed concerns that "inflation was back" (IMF, 2009). Of course, the potential source of this revival in inflation was events on world commodity markets, not just with respect to world agricultural commodities as detailed above but also with respect to world oil prices which also peaked in 2008. But the data show that, following the rise in inflation across OECD countries in 2007-2008, there was a subsequent decline in 2009, followed by headline inflation returning to pre-2007 levels. This is what it evident from the summary statistics: for the OECD as a whole, average inflation for 2007-2011 was 2.27% (compared with 2.63% for the 2000-2011 period as a whole). But inflation volatility was considerably higher in the 2007-2011 period with the standard deviation of general inflation being 1.20% compared with 0.98% for the longer period.

Figure 4: CPI Inflation US, EU* and OECD (Total)
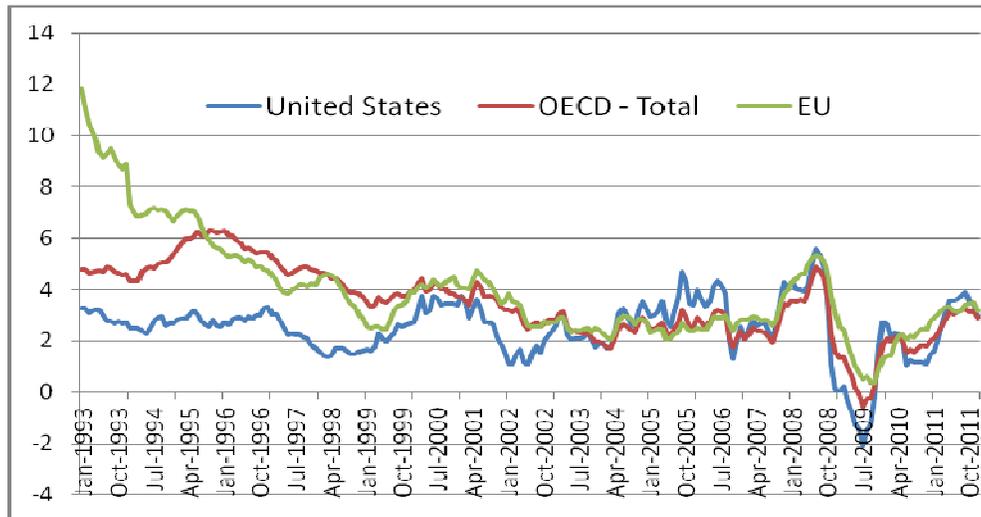
*Average across 21 Member States – does not include Latvia, Lithuania, Romania, Bulgaria, Cyprus and Malta.
Source: OECD

Finally, while Table 2 summarises the experience of headline inflation across EU Member States, the longer-term inflation experience can differ markedly across countries. This is highlighted in Figure 5 for four EU Member States (France, Germany, the UK and the Netherlands). At any specific point in time, the rates of inflation vary quite markedly with a noticeable example being the trough of the 2009 recession where both France and Germany experienced negative inflation. The figure also shows the UK experience with inflation being different with periods of considerably higher inflation relative to that in the other three countries. While only a snapshot of four countries, it does indicate that the inflation experience is not homogenous and thus hints at variety in the factors that potentially influence country specific inflation rates.

Figure 5: CPI All Goods Inflation for Selected EU Countries
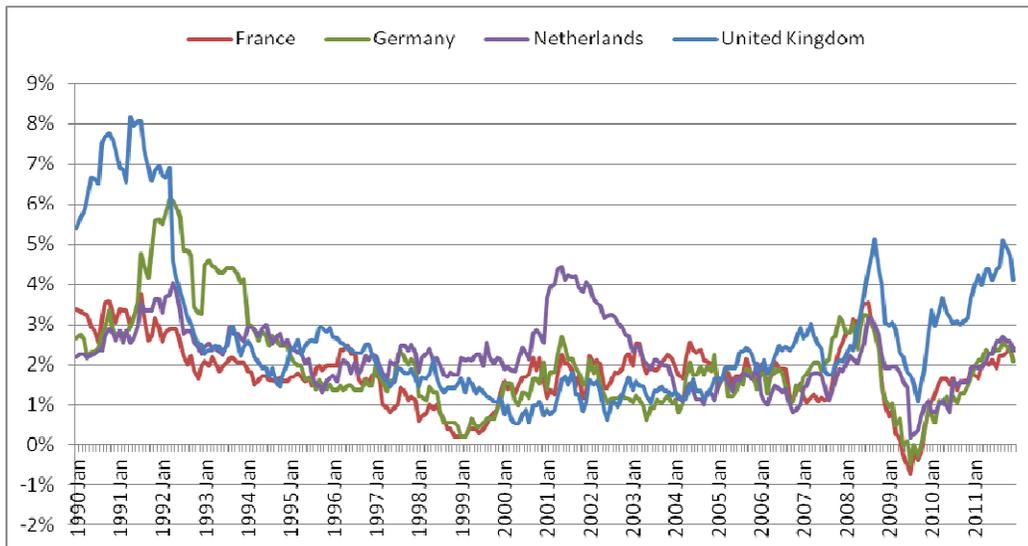
Source: OECD

Figure 6 reports the experience of inflation for selected New Member States (Estonia, Hungary and Poland). To 'benchmark' this experience, we also include the inflation experience of the UK in this figure. As one can see, the experience of inflation is considerably different in these three countries: inflation has typically been at much higher levels though, for Poland and Hungary, the levels of inflation were much lower in the 2000s from the levels of the late 1990s. Estonia's experience differs again, with much more variable inflation over the full sample period. In any case, the figure highlights that the experience of inflation in New Member States has been different from other members of the EU.

Figure 6: CPI All Goods Inflation for Selected EU Countries
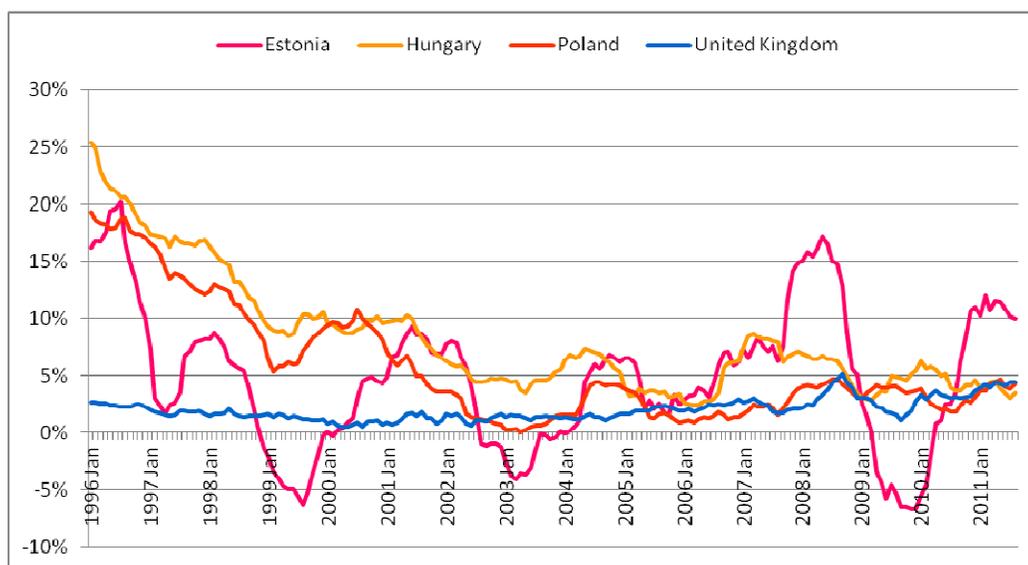
Source: OECD

(iv) Food and Non-Food Inflation

Given the events on world agricultural (and oil) markets, the recent experience in aggregate inflation across countries are likely to be tied to these events. Furthermore, as we outlined in Section 2, the focus of macroeconomic policy is on the 'core' measures of inflation i.e. excluding what happens to the more transitory and volatile aspects of the headline inflation measure. To highlight the experience of food inflation, we separate out food price inflation from non-food inflation. Figure 7 reports on these two measures for the EU. The data clearly show that food inflation across the EU differs quite markedly from non-food inflation. While non-food inflation has tended to be relatively stable (despite a small rise over the mid-2000s), it is clear that most of the variability in aggregate inflation has come from food price inflation. Taken over the sample period as a whole (1994-2011), food inflation is considerably more volatile than non-food inflation, with the variability in food price inflation becoming particularly marked in the late 2000s. Moreover, it is also clear from the data that the behaviour in food price inflation in the EU from 2007 onwards coincides with developments on world food commodity markets as detailed in Figure 2. Of note, it is the variability rather than the average value of food price inflation relative to other components of inflation that matters. While the average values for each series over the sample period are actually quite similar (3.62% for CPI, 3.12%

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for non-food and 3.04% for food respectively), the variances in the components of inflation are markedly different (2.28% for CPI, 1.22% for non-food and 4.70% for food)[7]. This is also reflected in a much greater range of values for food inflation – from a maximum of 9.1% to a minimum of -1.4% - than seen in the other two series (7.3% to 0.36% for CPI and 6.0% to 1.3% for non-food). This experience underpins the observations drawn from the macroeconomic policy literature: given that food prices (both on world markets and at the retail level) are highly variable, it is difficult for macroeconomic policy to target food price inflation given its volatility. These data present the aggregate picture; as noted in the Introduction, it is the variance in the experience in food price inflation across EU Member States that is of particular focus and it is this issue which we address in the following section.

Figure 7: Food and Non-Food Inflation in the EU (Jan 1994 – Dec 2011)
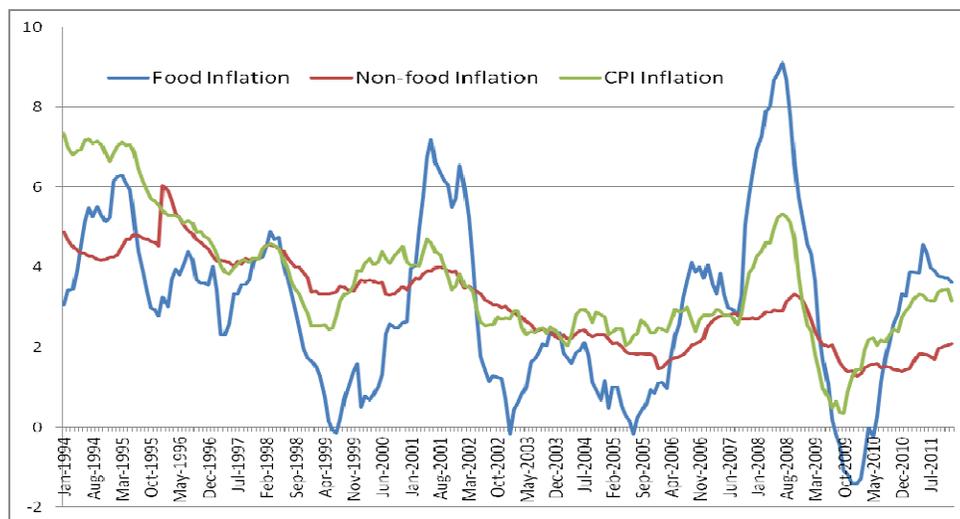
Source: OECD

4. Food Price Inflation in the EU

In this section, we focus on the experience of food price inflation across EU Member States. To start, we put the EU experience in context, by comparing food price inflation in EU Member States with food inflation in other major OECD economies. As noted above, EU food price inflation has been volatile with recent experience mirroring developments on global markets. To the extent that all countries trade

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[7] The summary statistics for general inflation, food and non-food inflation for each EU Member State, as well as OECD and EU aggregates, are provided in the Appendix.

commodities on world markets, the experience should be broadly similar though differing in magnitude. This is evident from Figure 8 which compares food price inflation in the EU with that of the US and Japan for the period 1997-2011. While all three regions/countries exhibited food price volatility with a degree of synchronicity to the cycles, it is clear from Figure 8, that food price inflation in the EU has, on average, been higher and more volatile than that in Japan (though tended to follow similar trends to that in the US particularly from the mid-2000s onwards)[8]. This is confirmed by the summary statistics: between 2000-2011, average food price inflation was 2.67% in the US, -0.12% in Japan and 2.77% in the EU. For the same period, food inflation volatility (as measured by the standard deviation) was 2.08% in the US, 1.87% in Japan, and 2.03% in the EU[9]. At an aggregate level, the EU experience looks broadly similar to the US (discounting the earlier part that will be influenced by the experience of the New Member States); but as we show below, the food price inflation experience within the EU exhibited more variability compared to EU average relative to other advanced economies.

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[8] With the focus here on EU27 averages, the earlier part of the period will be influenced by the high levels of food inflation in the New Member States, consistent with the inflationary experience of the former Soviet Bloc countries that have highlighted in earlier sections.

[9] The experience of Japan is of interest. Throughout the 2000s, Japan experienced close to zero inflation but food price inflation was much more volatile than non-food inflation. For 2000-2011, the standard deviation of non-food inflation was 0.42% compared with 1.87% for food inflation.

Figure 8: Average Monthly Food Price Inflation (Jan 1997 – December 2011): EU, the US and Japan Compared
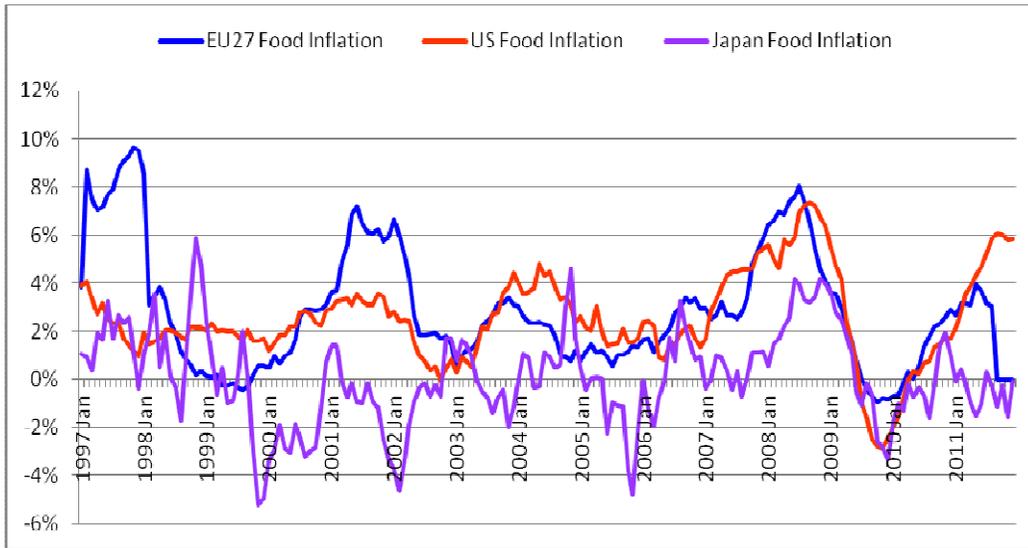
Source: OECD

To highlight this variation in the experience across EU Member States, we report data on food price inflation across the EU from the 1990s to date. We have referred to the variable experience in food price inflation across the EU in Table 1 which presented data for 2011. This variable experience in food price inflation is, however, quite persistent. The comparative experience for all EU Member States since 1990 is detailed in Table 3. There are two notable observations to make from the data presented in the Table. First, for many of the EU Member States (i.e. those who were already members prior to the 2004 enlargement), and taking the sample period as a whole, the average level of food price inflation did not differ that much. Second, for the Member States that have recently acceded, average levels of food inflation have been considerably higher than other EU countries, most strikingly in Hungary (12% food inflation over the sample period), Romania (20% over the period) and the Slovak Republic (around 7% over the period). When looking at the variability in the food inflation experience, we can also detect these very different experiences between the New Member States and others (with notably high measures of variance for Bulgaria, Hungary, Estonia, Latvia, Lithuania, the Slovak Republic and Slovenia).

The last two columns in Table 3 are also of interest. First, the peaks in food price inflation differ considerably across EU Member States. Again, the New Member

States stand out here with monthly food price inflation reaching a maximum of 188% in Bulgaria, 20% in Estonia (and similarly for Latvia), 32% in Hungary and 101% in Romania. Even among the EU-15, there were considerable differences in terms of the peaks in food price inflation over this period. Most notable is Greece (22%), Portugal (15%), the UK (12%) and Finland (10%).

The final column in Table 3 shows that food price *deflation* is also common, all EU Member States experiencing food price deflation sometime over the sample period. Consistent with the overall experience, the extent of food price deflation was most striking in the New Member States.

Given the differences in experience in food price inflation between the New Member States and the EU-15, it is useful to consider food price inflation in the period associated with the global commodity crisis. One reason for this is that the specific experience of food inflation in the New Member States may be associated with the transition process and that taking the period as a whole, may hide important differences in the experience in food inflation across the EU associated with more recent events in commodity markets. To address this, we report the same measures of inflation as in Table 3 but this time restrict the data to 2007-2011. The comparative experience for the 2007-2011 period is reported in Table 4.

Table 3: Measures of Food Inflation in EU (Jan 1990-Dec 2011)*

Country	Average	St. Dev.	Maximum	Minimum
Austria	1.97	2.00	8.12	-3.26
Belgium	1.86	1.76	7.00	-2.00
Bulgaria (Jan 97)	6.30	19.65	188.75	-17.92
Cyprus (Jan 97)	4.23	3.38	11.44	-6.29
Czech Rep (Jan 95)	2.47	5.00	15.25	-7.33
Denmark	2.00	2.22	9.90	-3.08
Estonia (Jan 96)	4.72	6.04	20.24	-6.66
Finland	1.14	3.60	10.19	-10.38
France	1.68	1.73	6.87	-1.69
Germany	1.42	2.12	7.87	-3.16
Greece	5.84	5.22	22.05	-2.58
Hungary	12.11	8.86	31.86	-2.73
Ireland	1.63	2.95	8.87	-8.54
Italy	2.85	2.05	6.77	-1.15
Latvia (Jan 97)	5.04	5.92	20.30	-9.03
Lithuania (Jan 97)	3.15	5.93	17.82	-7.90
Luxembourg	2.19	1.50	6.06	-1.08
Malta (Jan 97)	2.76	3.39	11.69	-5.28
Netherlands	1.46	2.46	8.05	-5.91
Poland (Jan 96)	4.96	4.81	19.24	-3.91
Portugal	2.90	3.66	15.16	-6.53
Romania (Jan 96)	20.39	22.92	101.86	-0.32
Slovakia	7.14	9.94	57.93	-5.86
Slovenia (Jan 97)	3.36	6.20	13.61	-15.89
Spain (Jan 94)	2.89	2.33	6.95	-2.78
Sweden	1.18	3.26	8.12	-8.06
United Kingdom	2.83	2.82	12.31	-2.38
EU 15	2.26	2.65	22.05	-10.38
New Member States (2004 Enlargement)	7.66	10.20	188.75	-15.89

* Unless otherwise stated
Source: OECD

There are several observations to make about the data reported in Table 4. First, for many of theEU-15, the events on global commodity markets were reflected in higher levels of inflation. For example, in the UK, average food price inflation was 5.4% over the 2007-2011 compared with an average of 2.83% over the period as a whole (the average rate of food inflation for 1990-2006 being 2.08%). Food inflation was

more volatile and the peak in food inflation that was reported for the full sample period in Table 3 occurred in this shorter period. To take another example: Ireland reports average food inflation of 0.4% but the peak in food price inflation (8.87%) occurred in this period and food inflation was considerably more volatile (4.7% for 2007-2011 compared with 2.06% for 1990-2006).

Table 4: Measures of Food Inflation in EU (Jan 2007-Dec 2011)

Country	Average	St. Dev.	Maximum	Minimum
Austria	3.01	2.66	8.12	-2.28
Belgium	2.84	1.97	7.00	-0.46
Bulgaria	6.77	8.44	23.42	-5.06
Cyprus	4.43	3.75	11.44	-3.07
Czech Rep	2.91	4.86	11.36	-6.72
Denmark	3.16	3.22	9.90	-3.08
Estonia	5.97	7.06	17.20	-6.66
Finland	2.98	4.90	10.19	-6.78
France	1.84	1.95	6.46	-1.62
Germany	2.52	2.84	7.87	-3.16
Greece	2.69	2.11	6.43	-1.91
Hungary	6.95	4.08	13.07	-2.73
Ireland	0.41	4.70	8.87	-8.54
Italy	2.50	1.80	6.09	-0.44
Latvia	7.32	8.36	20.30	-9.03
Lithuania	6.85	6.74	17.82	-5.71
Luxembourg	2.67	1.77	6.06	-0.27
Malta	5.15	3.74	11.69	-3.60
Netherlands	1.94	2.32	6.71	-2.02
Poland	4.45	1.66	7.65	0.59
Portugal	0.88	3.22	5.64	-6.53
Romania	4.90	3.84	11.44	-0.32
Slovakia	3.10	4.39	9.96	-5.86
Slovenia	4.59	4.26	13.61	-2.39
Spain	1.89	2.93	6.95	-2.78
Sweden	2.85	2.24	7.71	0.27
United Kingdom	5.41	2.79	12.31	1.31
EU 15	2.51	2.76	12.31	-8.54
New Member States (2004 Enlargement)	6.34	6.12	23.42	-9.03

Source: OECD

The experience in some of the New Member States was, however, different. For example, average food price inflation for Romania was less than 5% during the commodity crisis, considerably lower than the average food inflation rate for 1990-2006 of 27.4%. Food inflation reached a peak of 11.4% during this shorter period but, while high, this was considerably lower than the food inflation peak of 101% in the 1990-2006 period. Similar observations can be made about some of the other New Member States. To take another example, food price inflation was much less volatile in Poland in the 2007-2011 period than 1990-2006 (with a standard deviation of 1.66% relative to 5.86%) with a peak of food inflation at 7.86% in the 2007-2011 period compared with 19.24% in the 1990-2006 period.

Taken together, we can summarise the experience of food price inflation in the EU as follows:

- Food price inflation has been high and significantly more volatile than non-food price inflation.
- Food price inflation in the EU (taken as whole) has not been that different to food price inflation in the US over the 1990s and 2000s but different from the experience of Japan. The experience of food price inflation within the EU has been more variable compared with the average experience of the EU compared with other advanced economies.
- The experience of food price inflation differs markedly across EU Member States both with respect to the levels and the variability of food price inflation.
- Particularly notable in the comparative experience of EU Member States is food price inflation in the New Member States. While most countries witnessed high levels and variability of food price inflation in the post-2007 period (which coincided with events on world markets) food price inflation was also high and volatile in the early phases of transition for many of the New Member States. In broad terms, the experience of food price inflation in new Member States has differed significantly over the 1990s and 2000s compared with other EU Members.

5. World Commodity Markets, Domestic Agricultural Prices and Retail Prices

While the discussion above has focussed on EU food inflation and events on global commodity markets, to fully address how world price shocks and volatility relate to domestic food price inflation, one also needs to consider the responses of domestic raw commodity prices. This is important: while raw agricultural commodities enter the cost function of the downstream food industry, many of these raw commodities will be produced domestically or sourced from other EU Member States. At one extreme, if due to high levels of self-sufficiency (perhaps due to agricultural or trade policy) the EU was completely isolated from global commodity markets, world price shocks would have a limited effect on domestic food price inflation. Alternatively, complete openness would leave Member States exposed to the fluctuations in world prices. The key point here is that to understand the dynamics of food price inflation at the retail stage, it is important to also address the links between world and domestic markets for the raw commodities and then, in turn, how both impact on retail prices. Ferrucci *et al*. (2010) also highlight this issue. From a methodological perspective, in addressing food price inflation given the recent events on global commodity markets, there is a need to understand both horizontal and vertical price transmission.

To explore this issue, we compare data from three markets: the price of wheat on world markets, the price of wheat of bread making quality in the EU and the retail price of bread. Since we are interested in the dynamics of price movements particularly in the 2007-2011 period, we focus on indices of these prices rather than values. Figure 7 reports these data for three EU Member States: the UK, France and Poland. All three countries show some common features.

First, the behaviour of the price of bread at the retail level differs from wheat prices. Though we have noted above that retail prices may be quite volatile-at least as captured in inflation dynamics-retail bread prices change much less frequently than EU or world market wheat prices. Even a casual comparison of the figures clearly shows that retail prices change less frequently than the input price; it is this relationship that vertical price transmission would aim to uncover. Second, the general impression from all three countries is that domestic wheat prices appear to behave similarly to world wheat prices. However, on closer inspection, some notable features arise. One is that, while domestic and world wheat prices look correlated,

there are differences in level changes (given that these prices are reported in index form) and, on occasion, turning points between countries. This is what the horizontal price transmission would capture since this relates to how world and domestic prices are related for commodities at a similar stage of the supply chain. A second observation is that while the dynamics of world and domestic wheat prices may appear similar, world wheat prices rose above domestic wheat prices only from the mid-2000s onwards. In the late 1990s and early 2000s, when world commodity prices were low, the index of world prices was generally below the index for EU wheat prices. It may therefore be the case that how world and domestic prices are related may depend on the role of policy: domestic farm-gate prices being above world market prices when world prices are generally low and vice versa. This, in essence, is the focus of Ferrucci *et al* (2010) who argue that, in trying to find a relationship between global markets and domestic retail markets, one also has to account for the role of the Common Agricultural Policy. However, this is not always an easy task for the researcher to address; domestic wheat prices for individual EU Member States *at a suitable frequency* is much more limited than price data at either the world or retail levels. Therefore, while potentially important, there is a data issue that researchers will have to address.

6. The Emerging Research Agenda

The evidence reported in this paper shows clearly that the experience of food price inflation has and does vary considerably across EU Member States and the variation in this experience, with the exception of the New Member States who experienced high and volatile food price inflation in the early years of transition, has been particularly notable for the post-2007 period when world market prices for many commodities rose dramatically both in the 2007-2008 period and also in 2011. The variation in this experience raises some important research questions, the most obvious ones (to us!) being detailed below.

(i) Is It Surprising Food Price Inflation Differs across the EU?

As discussed above, while the dynamics of food price inflation and how they relate to events on global commodity markets has not received much attention in the economics literature, there has been some research on the effects of oil price shocks on inflation. One of the observations that comes out of this research is that oil price

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shocks do vary in their cross-country impact[10]. This is confirmed in the recent work of Kilian (2008) and Peersman and Van Robays (2009), the latter paper addressing the impact of oil price shocks across the Euro area[11]. While this research has focussed on how the effect on inflation and other macroeconomic aggregates will depend on the nature of the oil price shock, less attention has been paid to why the effects of these apparently 'common' shocks will likely differ. So, while there may be a prior expectation that the impact of commodity price shocks may not result in the same experience in inflation across countries, it still leaves open the question of why these difference will arise.

Other research avenues may give some indications of factors to explore. One line of research in recent years has been the links between globalisation and inflation. The argument pursued here is that increased globalisation which has been reflected in the growth of trade, more open markets and cheaper prices for imported goods, has had the effect of reducing inflation across many countries and hence contributing to the "Great Moderation". See, for example, Pain *et al*. (2008) and Pehnelt (2007) on these issues. In the context of world commodity markets (though the research on globalisation and inflation does not focus on this *per se*), the low and relatively stable levels of world prices that were experienced over the 1990s and up to the mid-2000s would therefore be reflected in relative low food price inflation[12]. The corollary of this is that when shocks arise on world markets, depending on a country's reliance on imports, it may be exposed to these global shocks which, in turn, will be reflected in differences in food price inflation. Hence, one potential reason why food price inflation may vary is the relative exposure of countries to these shocks.

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[10] Blanchard and Gali (2007) focus on the impact of oil price shocks on the macroeconomy across several developed countries and how the impacts of these shocks have diminished over time.
[11] Kilian (2008) gives a background to research on oil price impacts.
[12] This would be consistent with the 'good luck' reasoning for the "Great Moderation".

**Figure 7: Price Indices for Wheat in Global and Domestic Agricultural Markets
and Retail Bread Prices, 1997-2011 for UK, France and Poland**

(a) United Kingdom
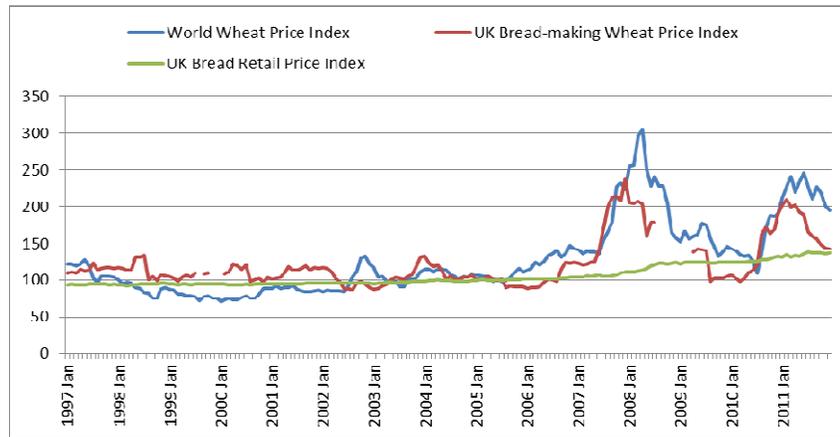

(b) France
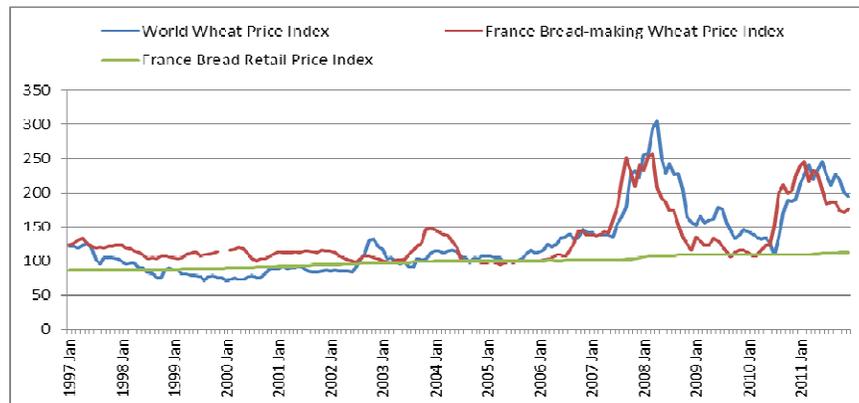
(c) Poland
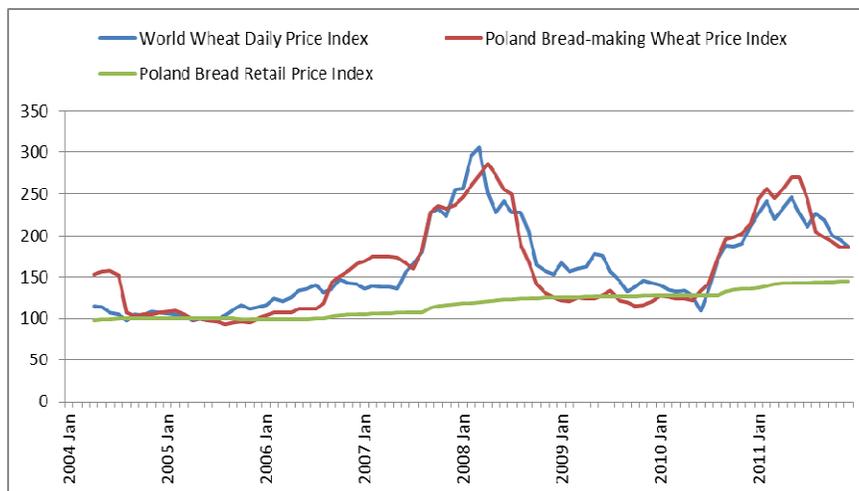
However, the links between world commodity markets and domestic inflation are not confined to comparing import penetration ratios or other measures of exposure to world markets. Exchange rates will matter too particularly given that most commodities traded on world markets are priced in US dollars. There are two aspects to this exchange rate issue. First, whether the domestic exchange rate appreciates or depreciates against the US dollar will have an impact on the price the globally traded commodity enters the domestic market: if the exchange rate depreciates (appreciates) against the dollar, this will exacerbate (mitigate) the impact of commodity price changes on domestic food prices. For example, the IMF (2011) note that the real price of imported food fell as the exchange rates of Bulgaria, Ireland, the Czech Republic and the Slovakia appreciated against the US dollar. Further, Davidson *et al.* (2011) show that the Sterling exchange rate had an important impact on food price inflation in the UK.

One of the obvious reasons for the varying experience of food price inflation across the EU may relate to those Member States that use the Euro and those that do not. Figure 8 shows the experience of the Euro against the US Dollar and UK Sterling against the US Dollar over the period 2001-2011. Clearly, the different trends in exchange rates may offer a partial explanation of food price inflation difference at least across some EU countries. It is clear in the comparison between the Euro and Sterling that the decline in the latter could have been a significant cause of increasing the cost of dollar-priced commodities around late 2008.

The second feature associated with the exchange rate is the extent of pass-through of exchange rate changes. Research has highlighted that the effect of exchange rates in relating world prices to domestic prices is not one-to-one. Recent studies on this include, for example, Campa and Goldberg (2005) and Goldberg and Hellerstein (2008). One potential reason for the imperfect pass-through of exchange rates that has been observed relates to market structure where oligopolistic firms adjust their mark-ups to absorb some of the changes to domestic prices arising from changes in the exchange rate. While this process of exchange rate transmission is related to price transmission discussed below (i.e. that some of the factors causing imperfect price/exchange rate transmission may be common), it is in some sense different from the process of horizontal and vertical price transmission which the link between world

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commodity, domestic agriculture and domestic retail prices. The role of the exchange rate is a complicating factor but one to account for in modelling the links between global events and domestic food price inflation.

Figure 8: The Euro and UK Sterling Exchange Rate Against the US Dollar
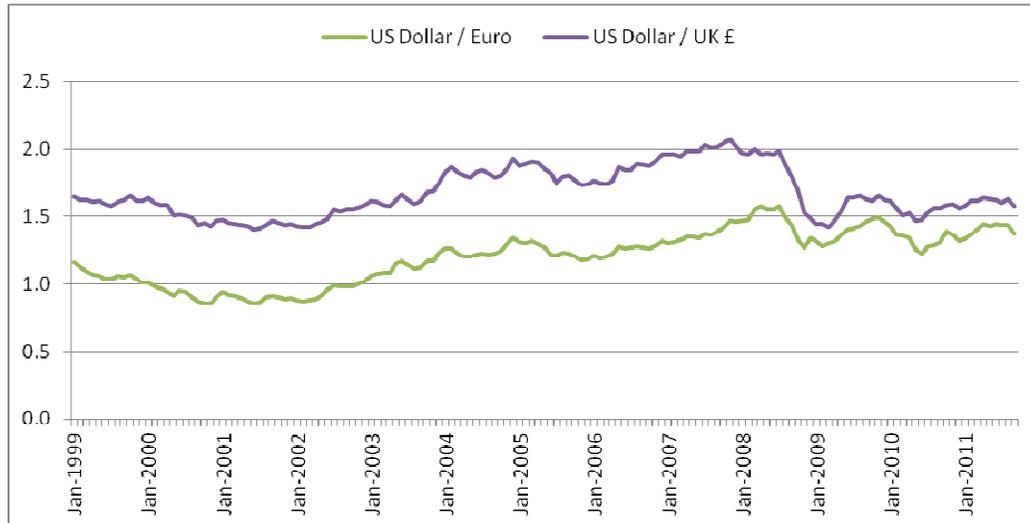
(ii) What is the Nature of Price Transmission from World and Upstream Sectors to Retail Prices?

The links between world commodity markets and domestic food prices at the retail level involve a complex process of price transmission. There are two aspects to this: first, how do domestic prices at the producer level vary with respect to what happens on world markets? This can be referred to as horizontal price transmission (i.e. the relationship between prices for the same commodity but where the markets are potentially segmented, where the extent of price transmission can be determined by the effectiveness of government policies (for example, the extent to which the Common Agricultural Policy impact on domestic producer prices given developments on world markets for the same commodity). As we have shown in Section 5, there appear to be relatively strong links between world prices and domestic producer prices, at least for some countries and at least for the commodity sector to which the data relate. The second feature of price transmission is the extent to which the changes in the upstream prices (whether this be the world commodity price or

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domestic producer price at the farm-gate) is reflected in corresponding changes in the retail price. This is the process of vertical price transmission.

There may be several reasons why this vertical price transmission effect may lead to imperfect pass-through and why it may vary across countries. First, assuming perfect competition, the extent of pass-through will be determined by the share of raw commodities in the cost function in the downstream sector (see McCorriston *et al*., 1998). To the extent that these shares vary across commodities and across countries, even abstracting for other aspects of the food supply chain, the effect on retail prices will vary. Second, other aspects of the food chain will however matter. Holding other factors constant, to the extent that market power is a feature of the food supply chain, this will impact on vertical price transmission. By extension, how the market structure of the food chain varies across countries will also matter in explaining the variation in food price inflation across the EU.

(iii) How do the Characteristics of the Food Supply Chain Influence this Transmission Process and Food Price Inflation?

The final question that ties in the first two questions in this section is what are the characteristics of the food supply chain across different EU member States and (perhaps a more difficult question to address) why do they differ? In turn, what aspects of the food supply chain across the EU impacts on the food inflation experience that we have outlined? One potentially related question to this is why-in an integrated market- do we still observe apparent dispersion in prices for similar products across the EU? This is detailed in Figure 9. As is apparent from the figure, price dispersion is common; using the coefficient of variation (standard deviation as a proportion of the mean) price dispersion is, on average, 34 % for food products but as high as 58% for white bread and 70% for mineral water. One obvious concern is that the functioning of the EU internal market does not appear to be bringing about convergence (either in price levels or in the inflation experience) as would be implied by textbook models of integrated markets. While the measure of price dispersion is a static measure of price differences across the EU, why it exists may also contribute to the explanation for the differences in food price inflation across EU Member States.

**Figure 9: Price Dispersion (Measured as Coefficient of Variation)
for Food Products Across the EU**
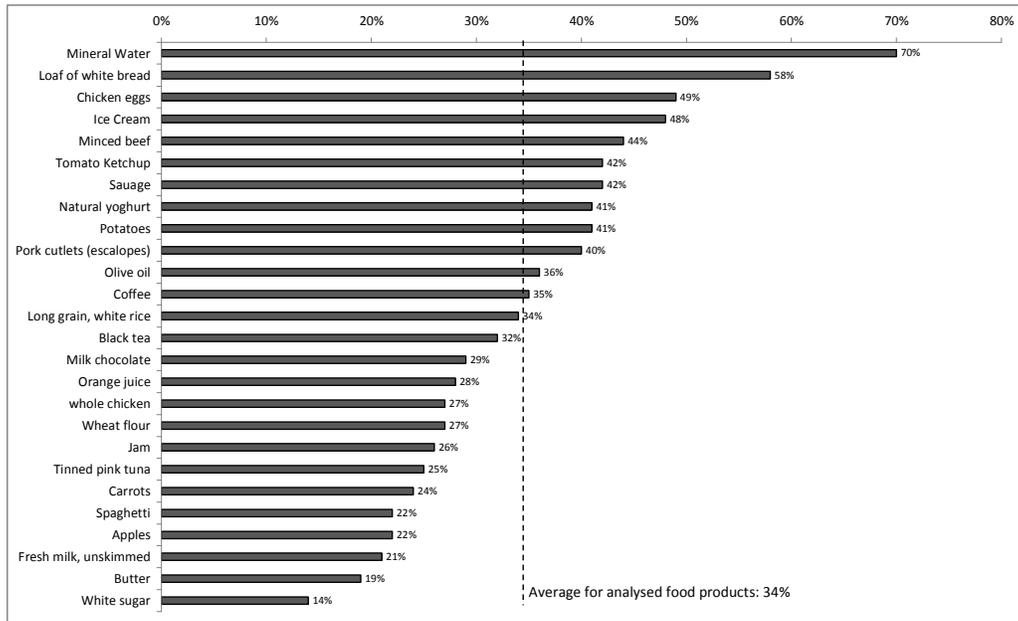
Source: EU Commission (2009)

7. Summary and Conclusions

In this paper, we have outlined the experience of food price inflation across EU Member States highlighting the varying experience across countries, how food inflation differs from non-food inflation and relating developments on global commodity markets to the experience of food price inflation across the EU. In the course of addressing this comparative experience, we have tied this discussion to policy issues and emerging research questions. In broad terms, modelling food price inflation is a largely unexplored issue and given the complex nature via which global commodity market events can affect domestic commodity and retail food markets (taking into account exchange rates, oil prices as well as other factors that may determine the dynamics of retail prices), a potentially challenging one to address. This challenge is further complicated (though also more interesting) in explaining why food inflation differs across countries.

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Appendix: Inflation Dynamics by Country, 1990-2011 (monthly observations).
Source: OECD data for all countries

Austria

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.38%	1.16%	1990 Jan - 1999 Dec	1.52%	1.88%	1990 Jan - 1999 Dec	2.46%	1.26%
2000 Jan - 2011 Dec	2.05%	0.86%	2000 Jan - 2011 Dec	2.35%	2.03%	2000 Jan - 2011 Dec	1.76%	0.55%
2007 Jan - 2011 Dec	2.17%	1.13%	2007 Jan - 2011 Dec	3.01%	2.66%	2007 Jan - 2011 Dec	1.80%	0.41%
1990 Jan - 2011 Dec	**2.20%**	**1.02%**	**1990 Jan - 2011 Dec**	**1.97%**	**2.00%**	**1990 Jan - 2011 Dec**	**2.08%**	**1.00%**

Austria: General, Food and Non-Food Inflation, 1990-2011
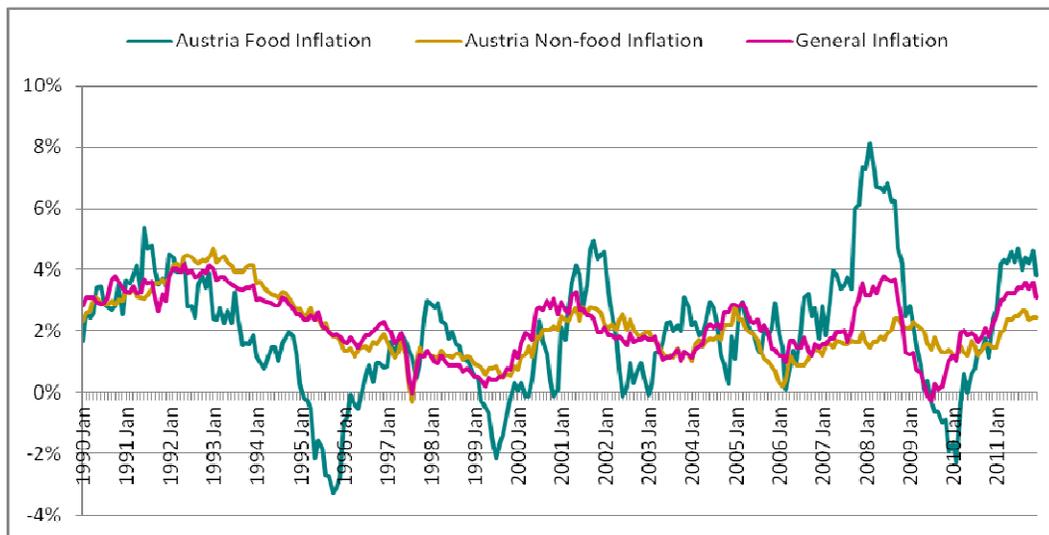
Food Inflation: Austria and EU-27

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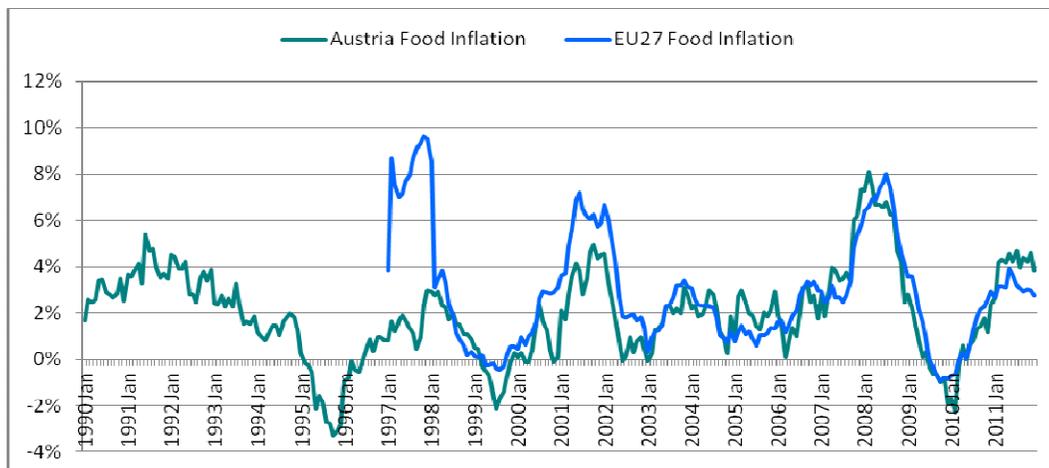
Belgium

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.12%	0.86%	1992 Jan - 1999 Dec	1.02%	1.46%	1990 Jan - 1999 Dec	2.40%	1.03%
2000 Jan - 2011 Dec	2.21%	1.22%	2000 Jan - 2011 Dec	2.42%	1.72%	2000 Jan - 2011 Dec	1.70%	0.46%
2007 Jan - 2011 Dec	2.36%	1.74%	2007 Jan - 2011 Dec	2.84%	1.97%	2007 Jan - 2011 Dec	1.70%	0.35%
1990 Jan - 2011 Dec	**2.17%**	**1.07%**	**1992 Jan - 2011 Dec**	**1.86%**	**1.76%**	**1990 Jan - 2011 Dec**	**2.02%**	**0.85%**

Belgium: General, Food and Non-Food Inflation, 1990-2011
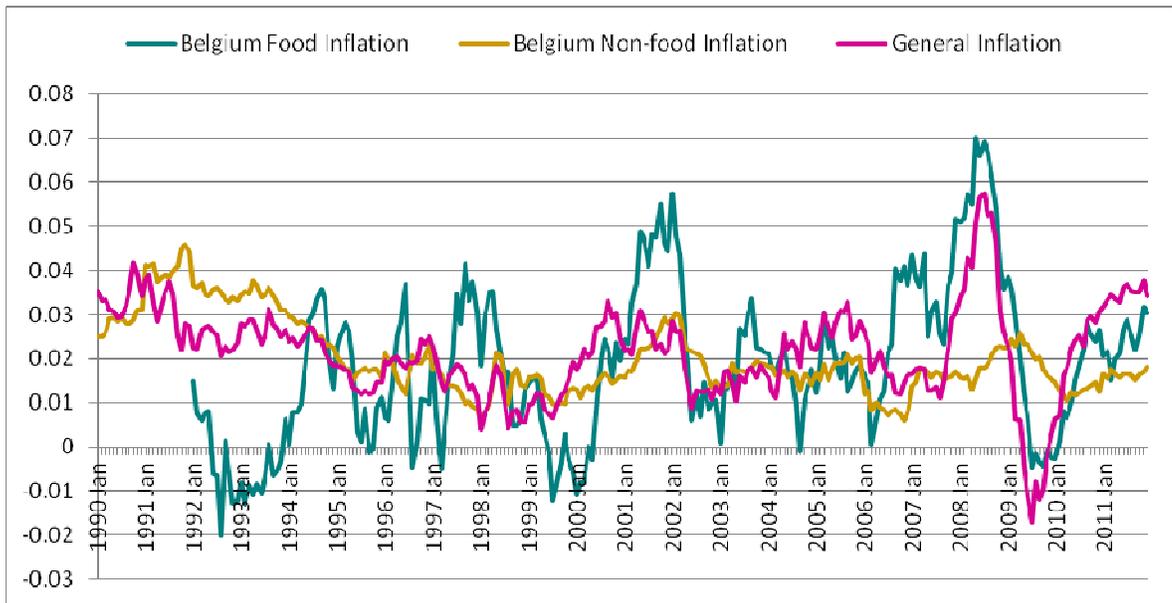
Food Inflation: Belgium and EU-27
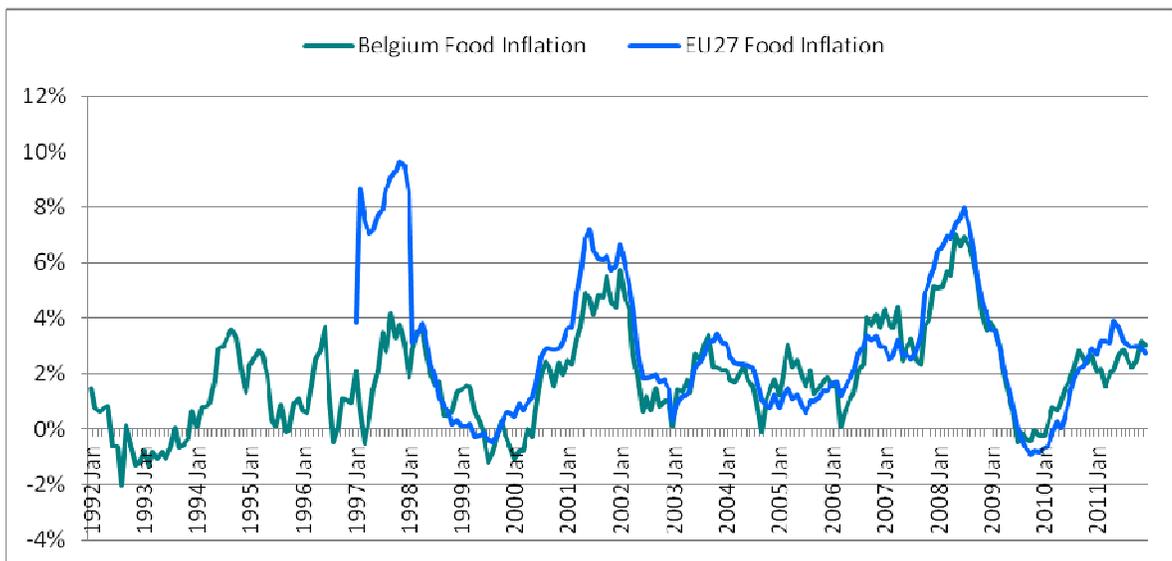
Bulgaria

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1997 Dec - 1999 Dec	10.95%	48.34%	1997 Dec - 1999 Dec	10.90%	48.96%	1997 Dec - 1999 Dec	26.38%	43.57%
2000 Jan - 2011 Aug	5.33%	6.75%	2000 Jan - 2011 Dec	5.50%	6.86%	2000 Jan - 2011 Aug	5.25%	3.20%
2007 Jan - 2011 Aug	6.64%	8.49%	2007 Jan - 2011 Dec	6.77%	8.44%	2007 Jan - 2011 Aug	4.75%	3.54%
1997 Dec - 2011 Aug	**6.18%**	**19.61%**	**1997 Dec - 2011 Dec**	**6.30%**	**19.65%**	**1997 Dec - 2011 Aug**	**8.45%**	**18.55%**

Bulgaria: General, Food and Non-Food Inflation, 1990-2011
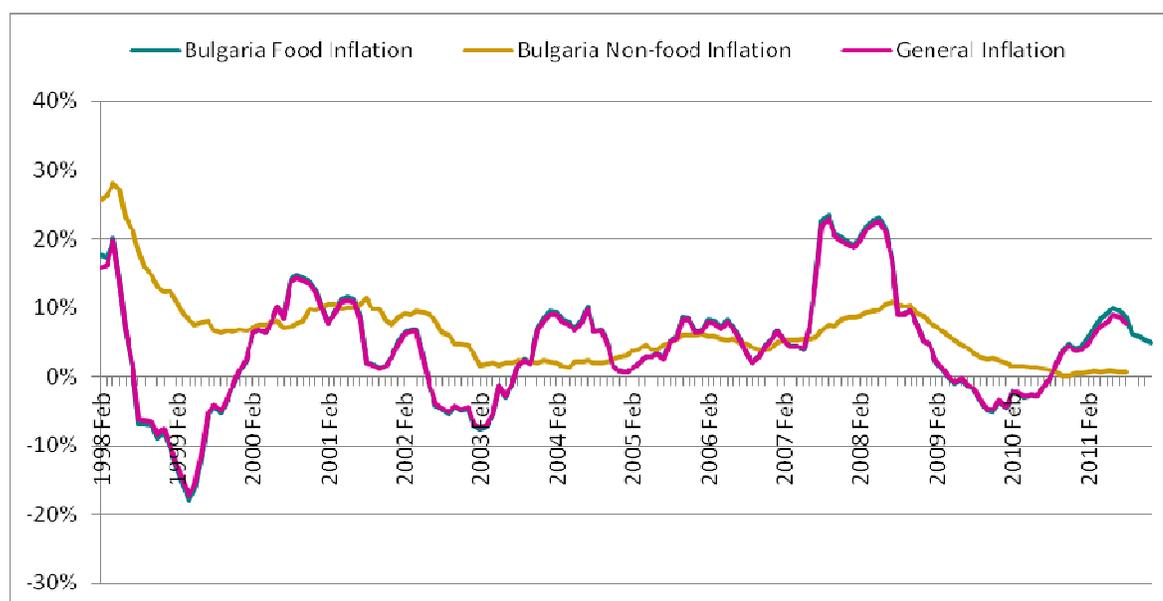
Food Inflation: Bulgaria and EU-27

33
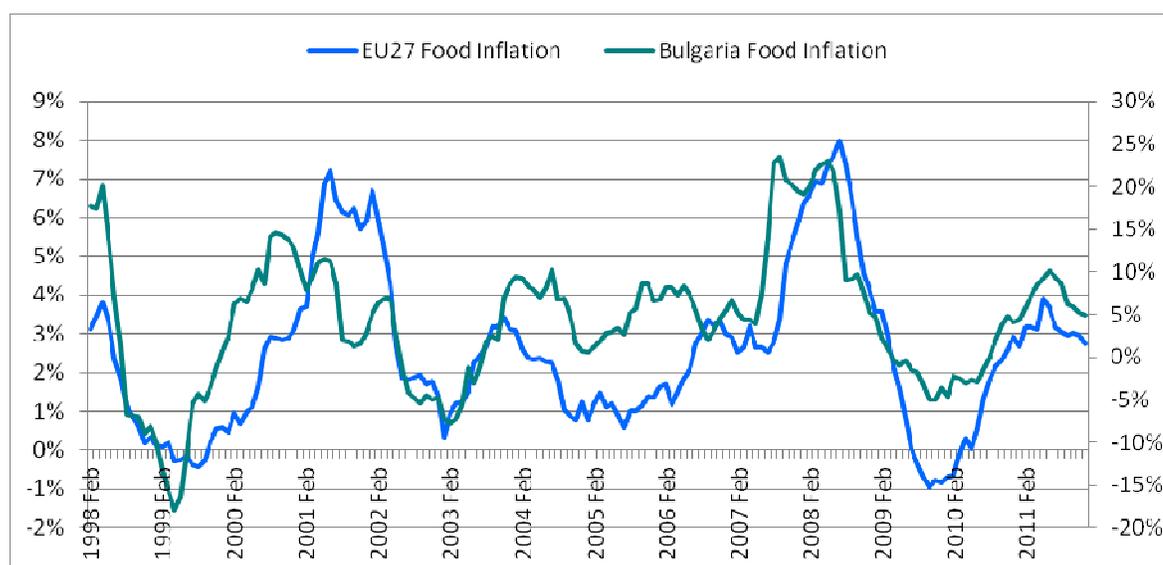
Cyprus

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1997 Dec - 1999 Dec	3.14%	3.49%	1997 Dec - 1999 Dec	2.96%	3.90%	1997 Dec - 1999 Dec	1.72%	1.14%
2000 Jan - 2011 Aug	4.20%	2.79%	2000 Jan - 2011 Dec	4.55%	3.17%	2000 Jan - 2011 Aug	1.26%	0.98%
2007 Jan - 2011 Aug	3.76%	3.26%	2007 Jan - 2011 Dec	4.43%	3.75%	2007 Jan - 2011 Aug	1.52%	0.81%
1997 Dec - 2011 Aug	**3.98%**	**2.96%**	**1997 Dec - 2011 Dec**	**4.23%**	**3.38%**	**1997 Dec -2011 Aug**	**1.35%**	**1.03%**

Cyprus: General, Food and Non-Food Inflation, 1990-2011
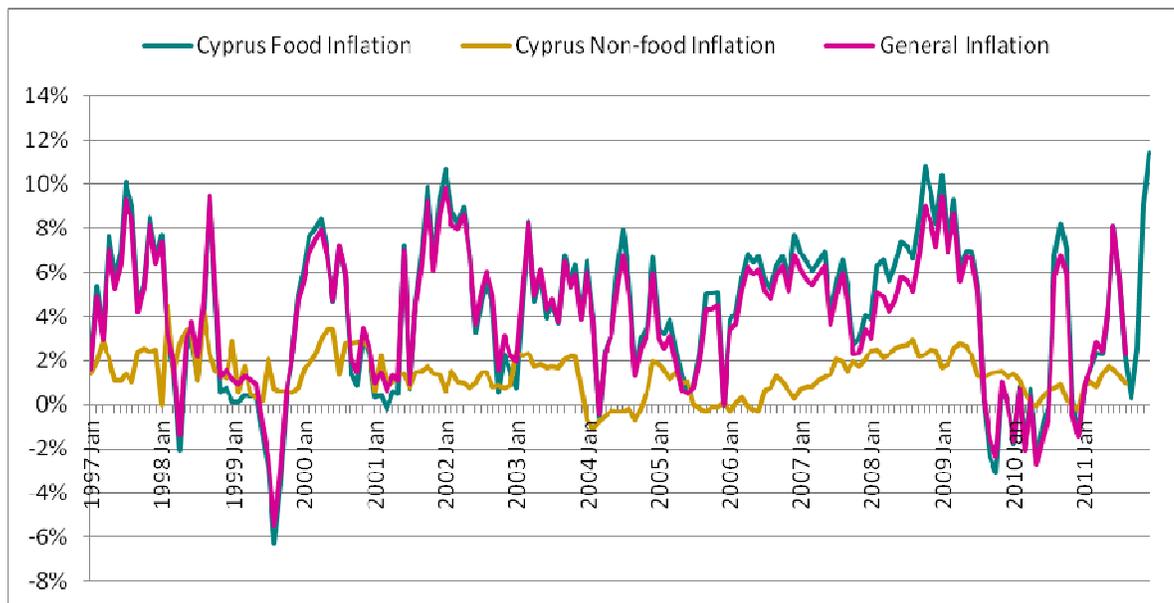
Food Inflation: Cyprus and EU-27

34
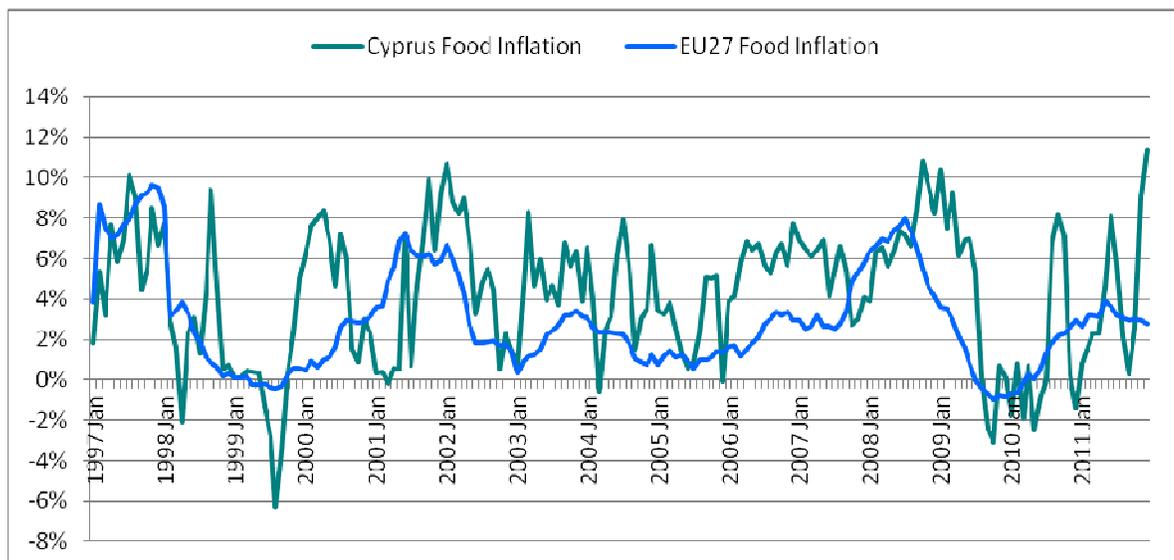
Czech Republic

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1992 Jan - 1999 Dec	9.58%	4.65%	1995 Jan - 1999 Dec	4.36%	6.19%	1997 Dec - 1999 Dec	9.02%	3.21%
2000 Jan - 2011 Aug	2.59%	1.78%	2000 Jan - 2011 Dec	1.69%	4.19%	2000 Jan - 2011 Jul	2.52%	1.63%
2007 Jan - 2011 Aug	2.73%	2.12%	2007 Jan - 2011 Dec	2.91%	4.86%	2007 Jan - 2011 Jul	2.30%	1.64%
1992 Jan - 2011 Aug	**5.43%**	**4.74%**	**1995 Jan - 2011 Dec**	**2.47%**	**5.00%**	**1997 Dec - 2011 Jul**	**3.86%**	**3.33%**

Czech Republic: General, Food and Non-Food Inflation, 1990-2011
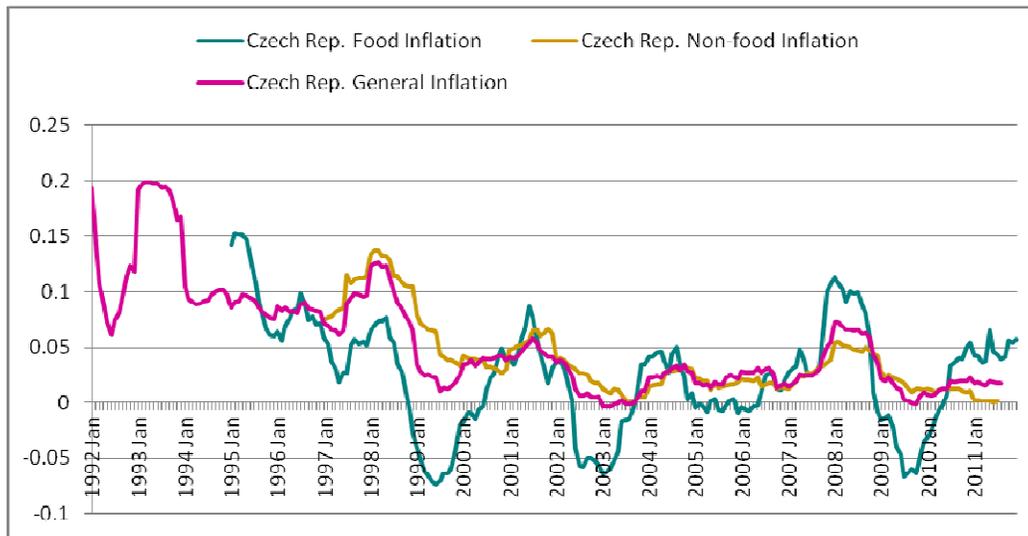
Food Inflation: Czech Republic and EU-27
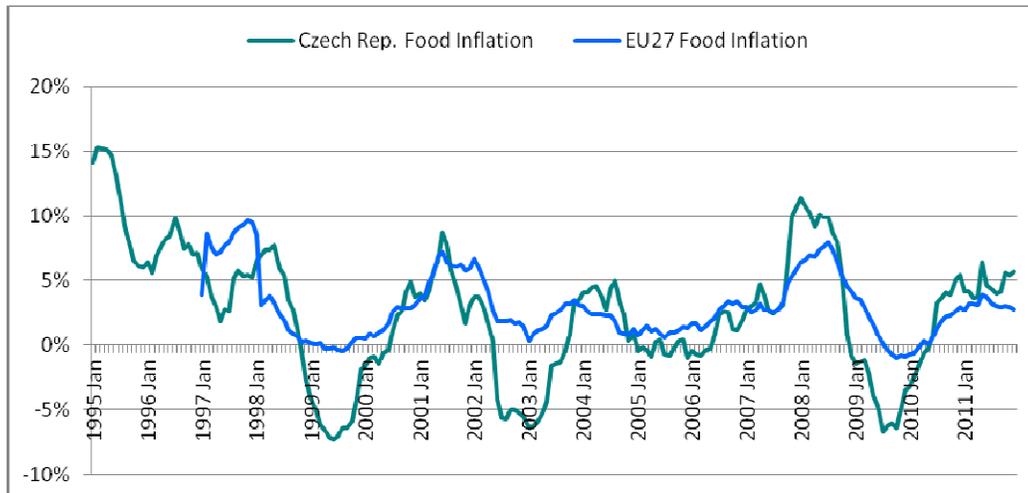
Denmark

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.09%	0.48%	1990 Jan - 1999 Dec	1.60%	1.71%	1990 Jan - 1999 Dec	2.22%	0.58%
2000 Jan - 2011 Dec	2.15%	0.70%	2000 Jan - 2011 Dec	2.34%	2.52%	2000 Jan - 2011 Dec	1.88%	0.47%
2007 Jan - 2011 Dec	2.27%	0.82%	2007 Jan - 2011 Dec	3.16%	3.22%	2007 Jan - 2011 Dec	1.91%	0.40%
1990 Jan - 2011 Dec	**2.12%**	**0.61%**	**1990 Jan - 2011 Dec**	**2.00%**	**2.22%**	**1990 Jan - 2011 Dec**	**2.04%**	**0.55%**

Denmark: General, Food and Non-Food Inflation, 1990-2011
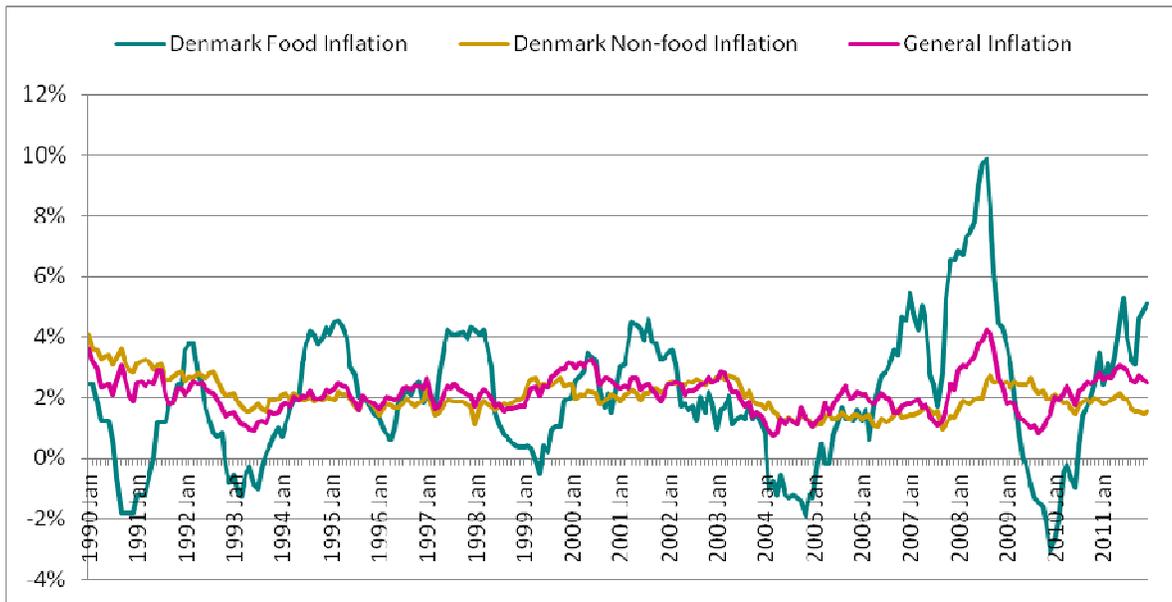
Food Inflation: Denmark and EU-27

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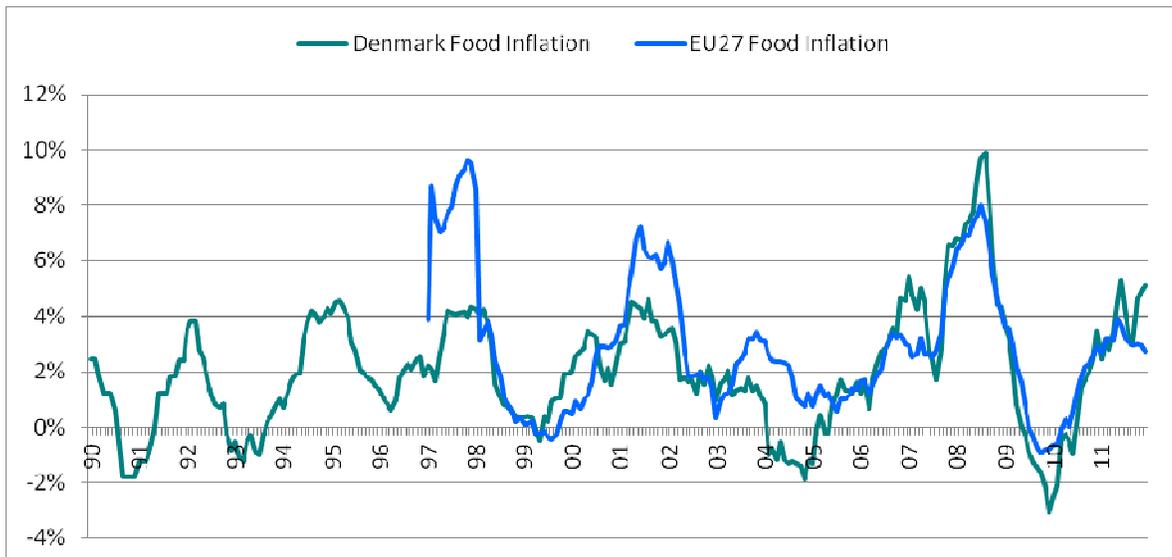
Estonia

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1996 Jan - 1999 Dec	5.58%	7.62%	1996 Jan - 1999 Dec	5.58%	7.62%	1998 Dec - 1999 Dec	5.25%	1.03%
2000 Jan - 2011 Aug	4.43%	5.48%	2000 Jan - 2011 Dec	4.44%	5.41%	2000 Jan - 2011 Aug	3.00%	1.87%
2007 Jan - 2011 Aug	6.07%	7.29%	2007 Jan - 2011 Dec	5.97%	7.06%	2007 Jan - 2011 Aug	3.16%	2.68%
1996 Jan - 2011 Aug	**4.72%**	**6.10%**	**1996 Jan - 2011 Dec**	**4.72%**	**6.04%**	**1998 Dec -2011 Aug**	**3.19%**	**1.92%**

Estonia: General, Food and Non-Food Inflation, 1990-2011
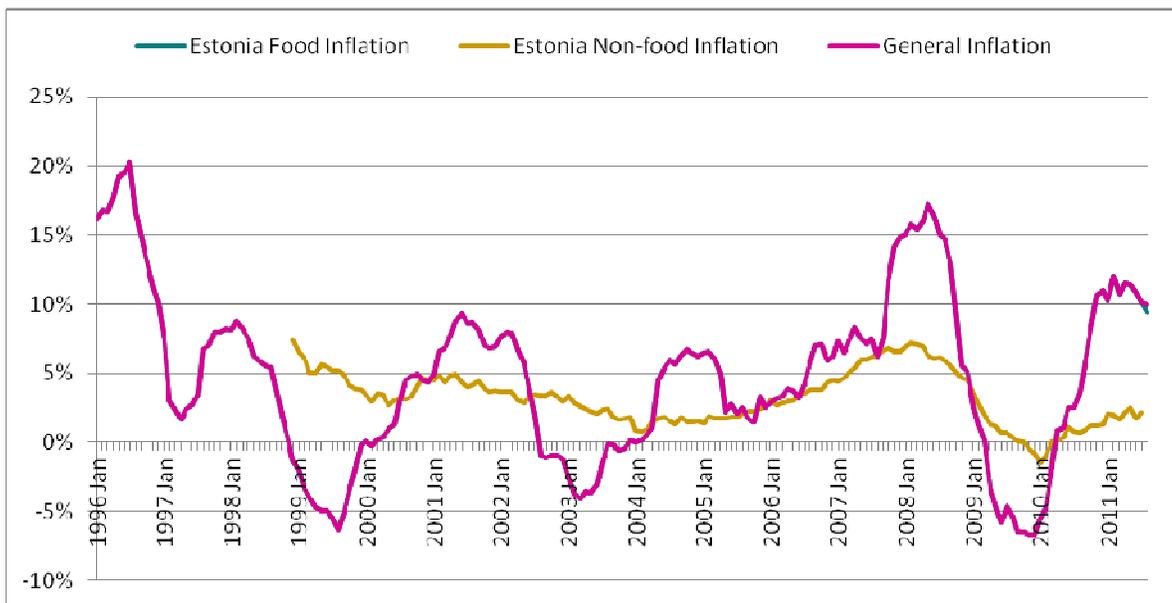
Food Inflation: Estonia and EU-27
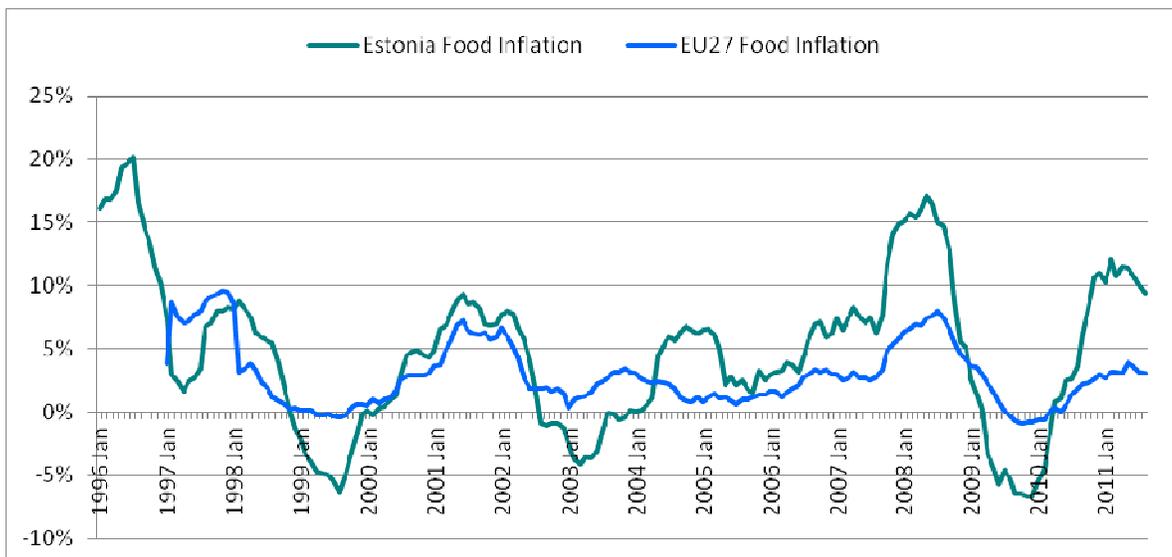
Finland

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.15%	1.74%	1990 Jan - 1999 Dec	-0.15%	3.28%	1990 Jan - 1999 Dec	2.52%	1.86%
2000 Jan - 2011 Dec	1.78%	1.35%	2000 Jan - 2011 Dec	2.20%	3.50%	2000 Jan - 2011 Dec	1.44%	1.09%
2007 Jan - 2011 Dec	2.20%	1.61%	2007 Jan - 2011 Dec	2.98%	4.90%	2007 Jan - 2011 Dec	1.75%	1.00%
1990 Jan - 2011 Dec	**1.95%**	**1.55%**	**1990 Jan - 2011 Dec**	**1.14%**	**3.60%**	**1990 Jan - 2011 Dec**	**1.93%**	**1.58%**

Finland: General, Food and Non-Food Inflation, 1990-2011
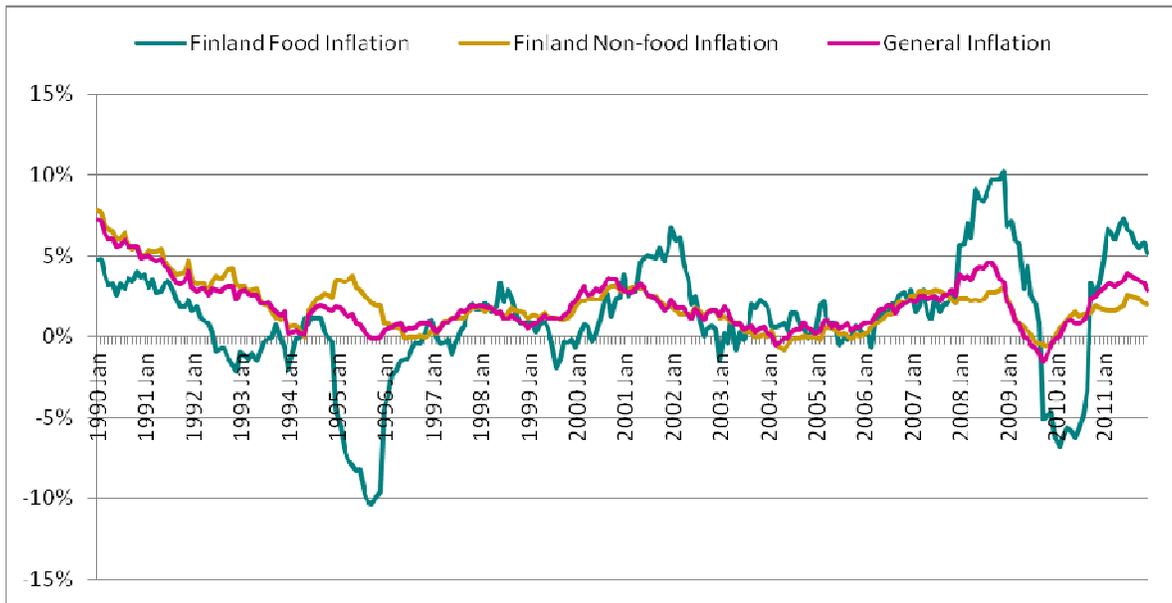
Food Inflation: Finland and EU-27

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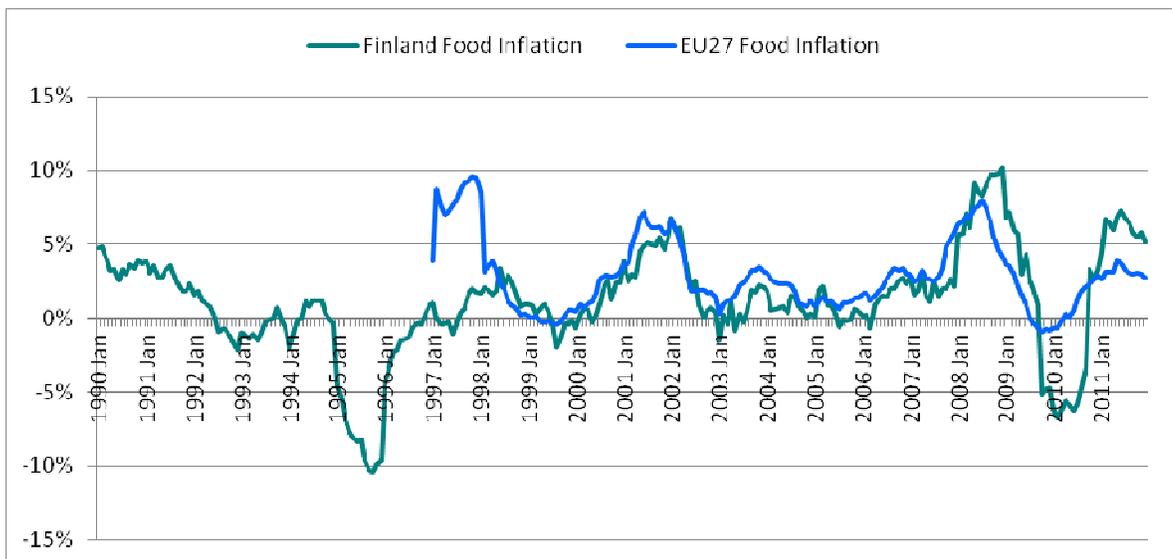
France

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	1.85%	0.91%	1990 Jan - 1999 Dec	1.30%	1.37%	1990 Jan - 1999 Dec	2.04%	1.02%
2000 Jan - 2011 Dec	1.73%	0.71%	2000 Jan - 2011 Dec	2.00%	1.93%	2000 Jan - 2011 Dec	1.38%	0.57%
2007 Jan - 2011 Dec	1.59%	1.02%	2007 Jan - 2011 Dec	1.84%	1.95%	2007 Jan - 2011 Dec	1.26%	0.38%
1990 Jan - 2011 Dec	**1.79%**	**0.81%**	**1990 Jan - 2011 Dec**	**1.68%**	**1.73%**	**1990 Jan - 2011 Dec**	**1.68%**	**0.87%**

France: General, Food and Non-Food Inflation, 1990-2011
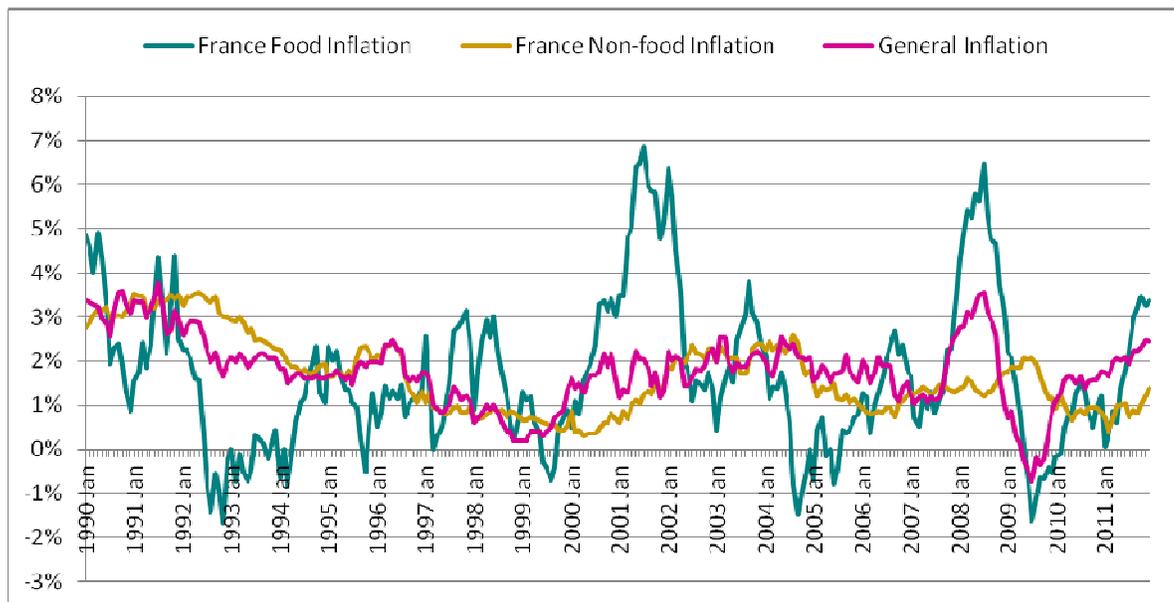
Food Inflation: France and EU-27
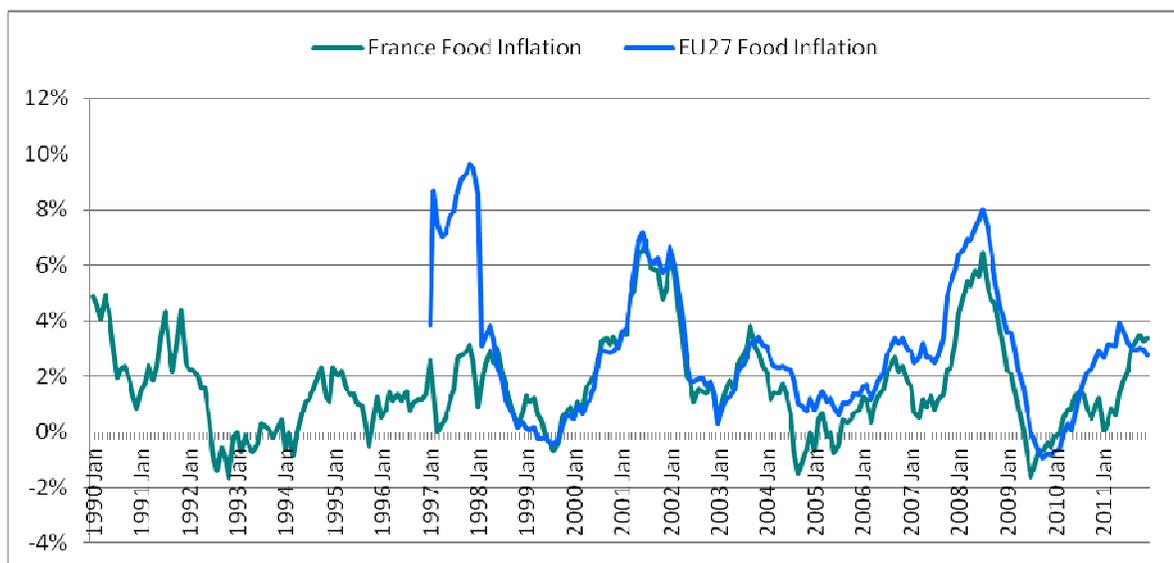
Germany

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.51%	1.51%	1990 Jan - 1999 Dec	1.26%	1.37%	1990 Jan - 1999 Dec	2.75%	1.66%
2000 Jan - 2011 Dec	1.60%	0.71%	2000 Jan - 2011 Dec	1.56%	2.58%	2000 Jan - 2011 Dec	1.19%	0.42%
2007 Jan - 2011 Dec	1.72%	0.98%	2007 Jan - 2011 Dec	2.52%	2.84%	2007 Jan - 2011 Dec	1.27%	0.40%
1990 Jan - 2011 Dec	**2.01%**	**1.23%**	**1990 Jan - 2011 Dec**	**1.42%**	**2.12%**	**1990 Jan - 2011 Dec**	**1.90%**	**1.40%**

Germany: General, Food and Non-Food Inflation, 1990-2011
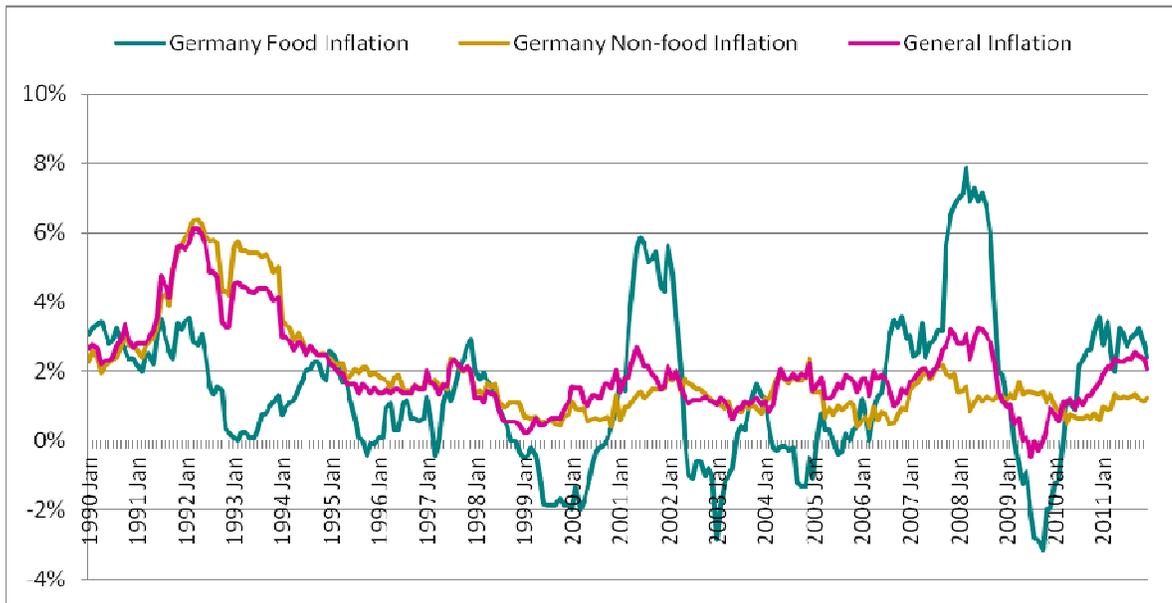
Food Inflation: Germany and EU-27
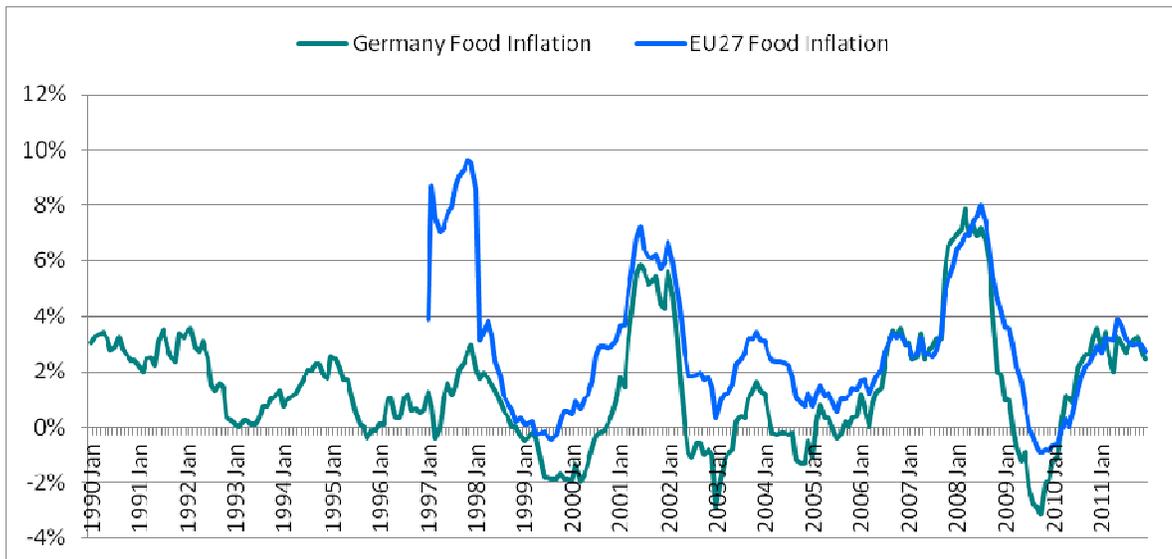
Greece

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	10.41%	5.43%	1990 Jan - 1999 Dec	9.34%	5.45%	1990 Jan - 1999 Dec	10.97%	5.02%
2000 Jan - 2011 Dec	3.25%	0.98%	2000 Jan - 2011 Aug	2.93%	2.55%	2000 Jan - 2011 Dec	2.83%	0.77%
2007 Jan - 2011 Dec	3.20%	1.43%	2007 Jan - 2011 Aug	2.69%	2.11%	2007 Jan - 2011 Dec	2.56%	0.93%
1990 Jan - 2011 Dec	**6.50%**	**5.16%**	**1990 Jan - 2011 Aug**	**5.84%**	**5.22%**	**1990 Jan - 2011 Dec**	**6.53%**	**5.31%**

Greece: General, Food and Non-Food Inflation, 1990-2011
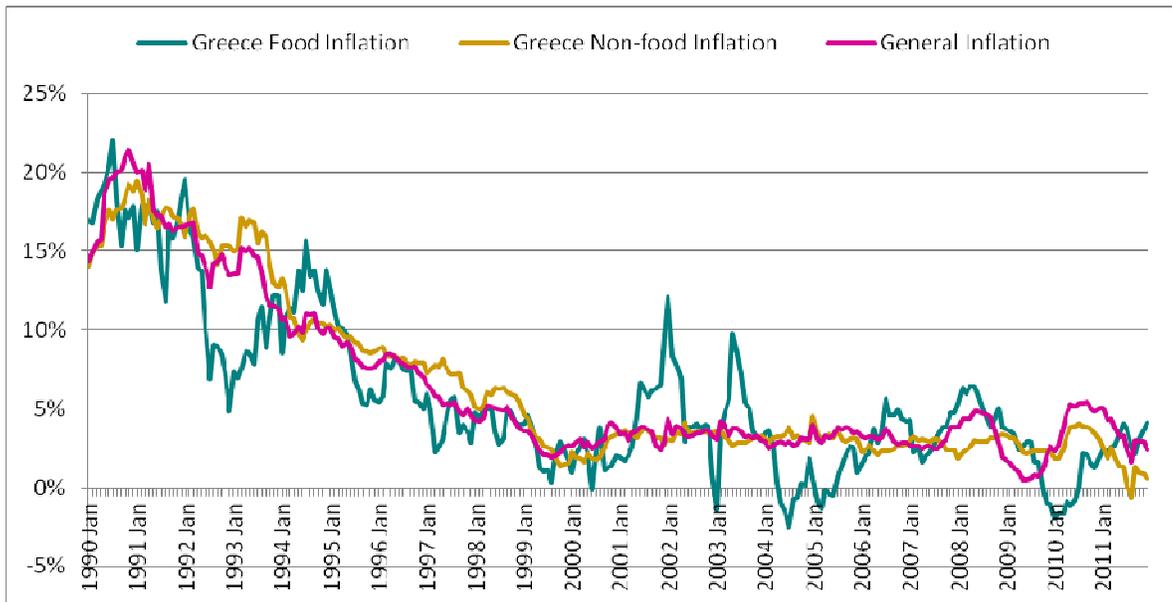
Food Inflation: Greece and EU-27

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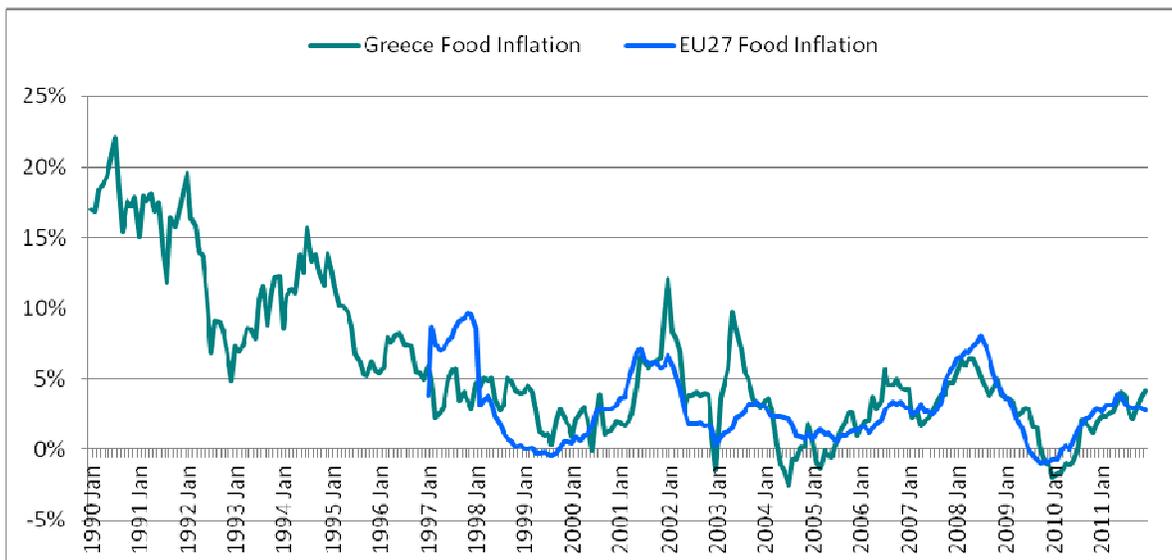
Hungary

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	19.92%	5.94%	1990 Jan - 1999 Dec	18.94%	8.04%	1991 Jan - 1999 Dec	19.61%	5.73%
2000 Jan - 2011 Dec	5.66%	2.11%	2000 Jan - 2011 Dec	6.42%	4.33%	2000 Jan - 2011 Dec	4.78%	2.29%
2007 Jan - 2011 Dec	5.25%	1.64%	2007 Jan - 2011 Dec	6.95%	4.08%	2007 Jan - 2011 Dec	3.63%	1.93%
1990 Jan - 2011 Dec	**12.14%**	**8.31%**	**1990 Jan - 2011 Dec**	**12.11%**	**8.86%**	**1991 Jan - 2011 Dec**	**11.13%**	**8.43%**

Hungary: General, Food and Non-Food Inflation, 1990-2011
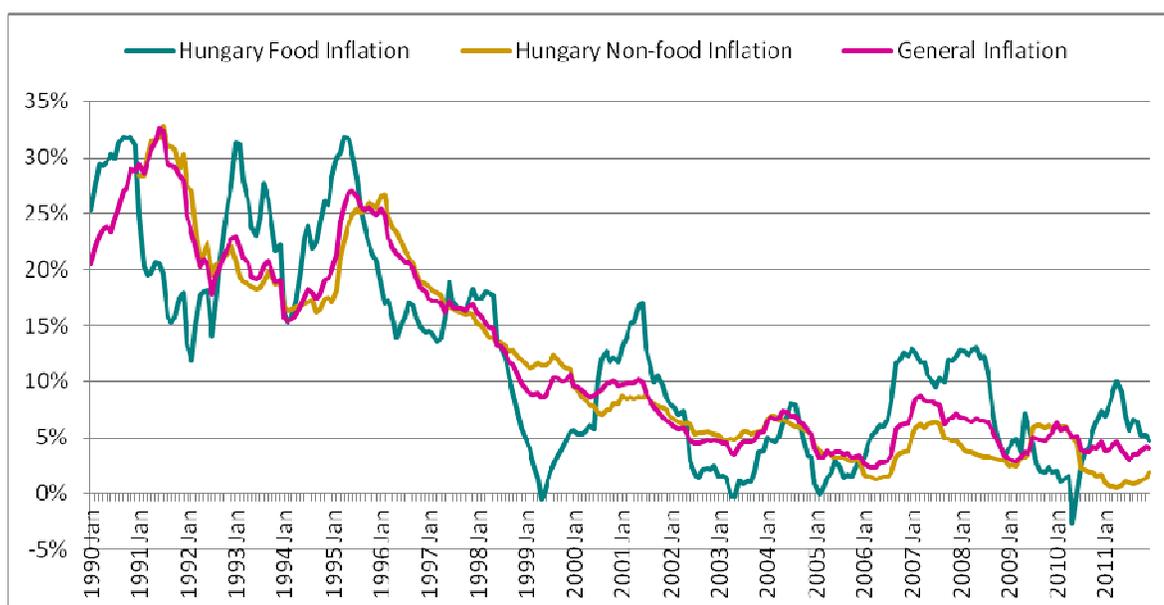
Food Inflation: Hungary and EU-27
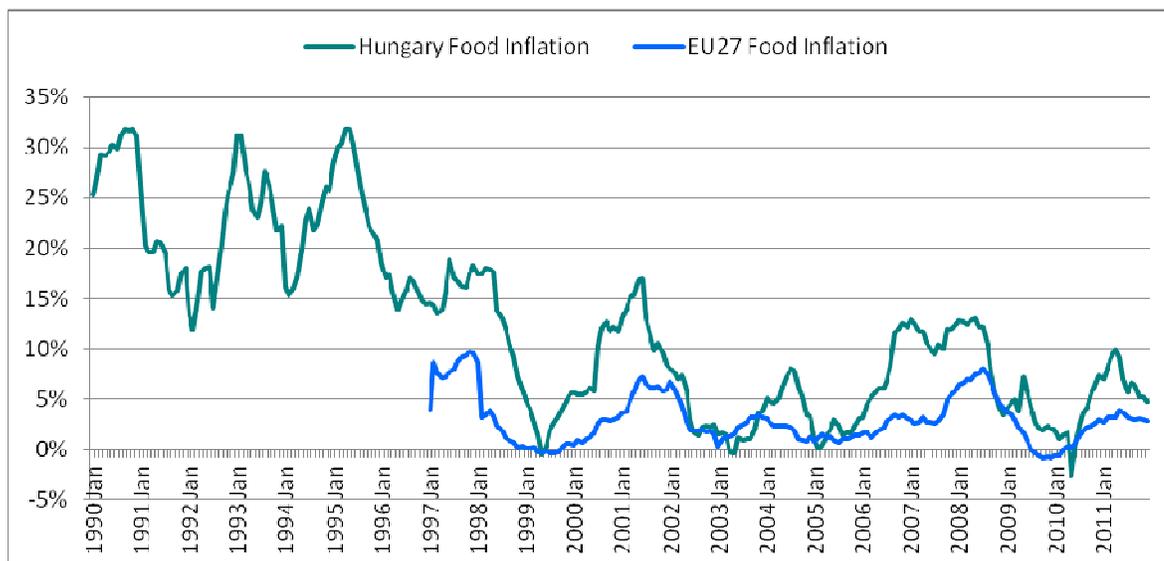
Ireland

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.28%	0.79%	1990 Jan - 1999 Dec	1.91%	1.80%	1990 Jan - 1999 Dec	2.44%	1.04%
2000 Jan - 2011 Dec	2.70%	2.91%	2000 Jan - 2011 Dec	1.39%	3.62%	2000 Jan - 2011 Dec	2.63%	2.96%
2007 Jan - 2011 Dec	1.16%	3.74%	2007 Jan - 2011 Dec	0.41%	4.70%	2007 Jan - 2011 Dec	0.84%	3.62%
1990 Jan - 2011 Dec	**2.51%**	**2.22%**	**1990 Jan - 2011 Dec**	**1.63%**	**2.95%**	**1990 Jan - 2011 Dec**	**2.55%**	**2.30%**

Ireland: General, Food and Non-Food Inflation, 1990-2011
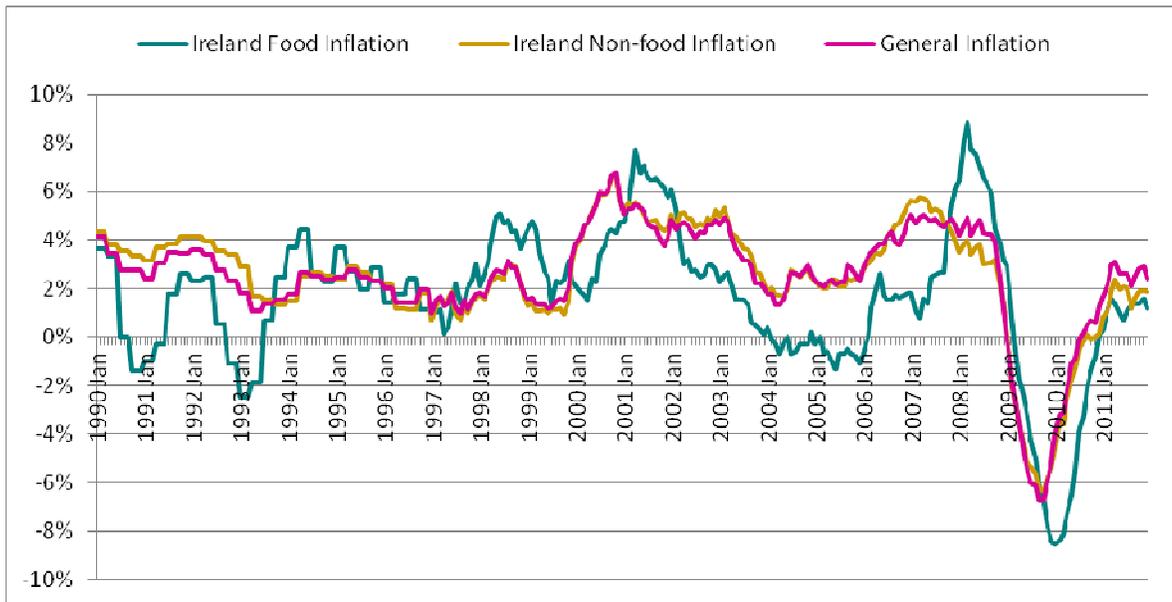
Food Inflation: Ireland and EU-27
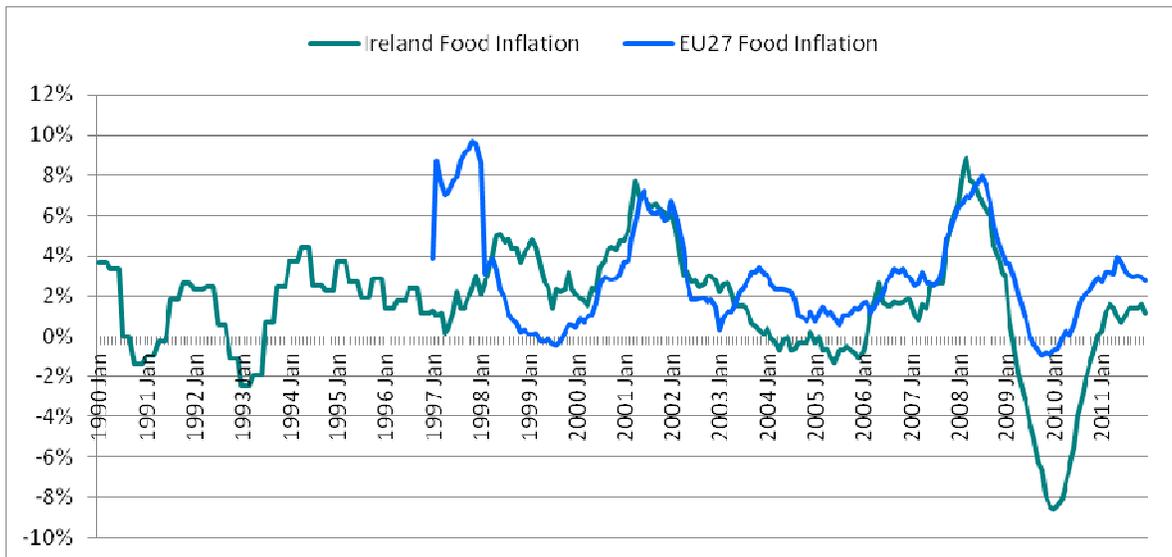
Italy

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	4.06%	1.66%	1990 Jan - 1999 Dec	3.40%	2.32%	1990 Jan - 1999 Dec	4.21%	1.47%
2000 Jan - 2011 Dec	2.22%	0.70%	2000 Jan - 2011 Dec	2.38%	1.65%	2000 Jan - 2011 Dec	2.03%	0.38%
2007 Jan - 2011 Dec	2.03%	0.99%	2007 Jan - 2011 Dec	2.50%	1.80%	2007 Jan - 2011 Dec	1.79%	0.30%
1990 Jan - 2011 Dec	**3.06%**	**1.53%**	**1990 Jan - 2011 Dec**	**2.85%**	**2.05%**	**1990 Jan - 2011 Dec**	**3.02%**	**1.50%**

Italy: General, Food and Non-Food Inflation, 1990-2011
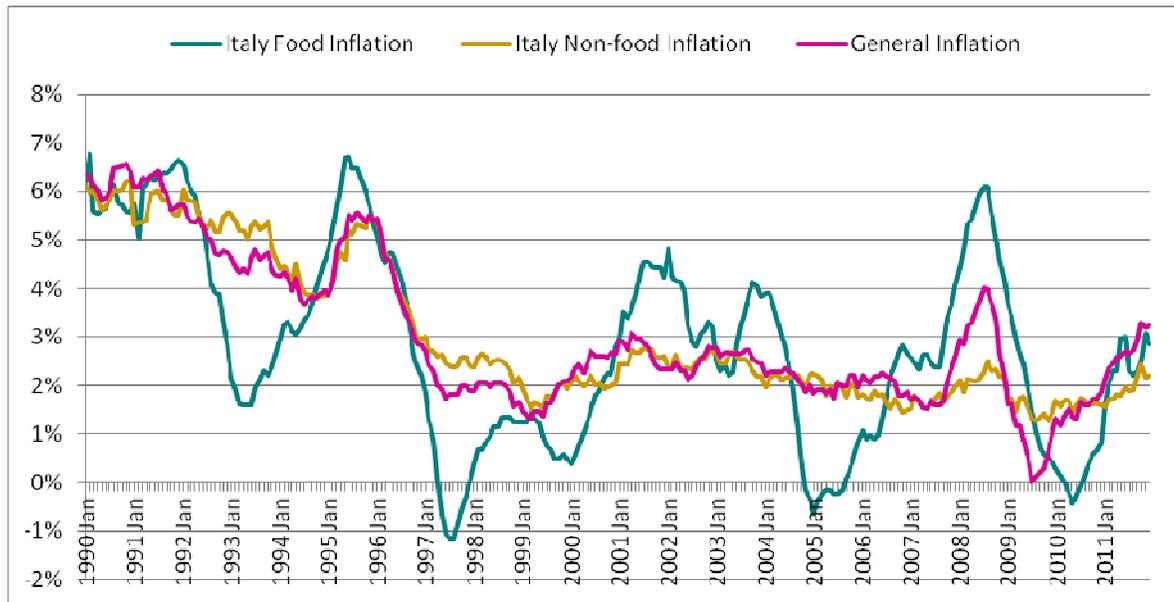
Food Inflation: Italy and EU-27
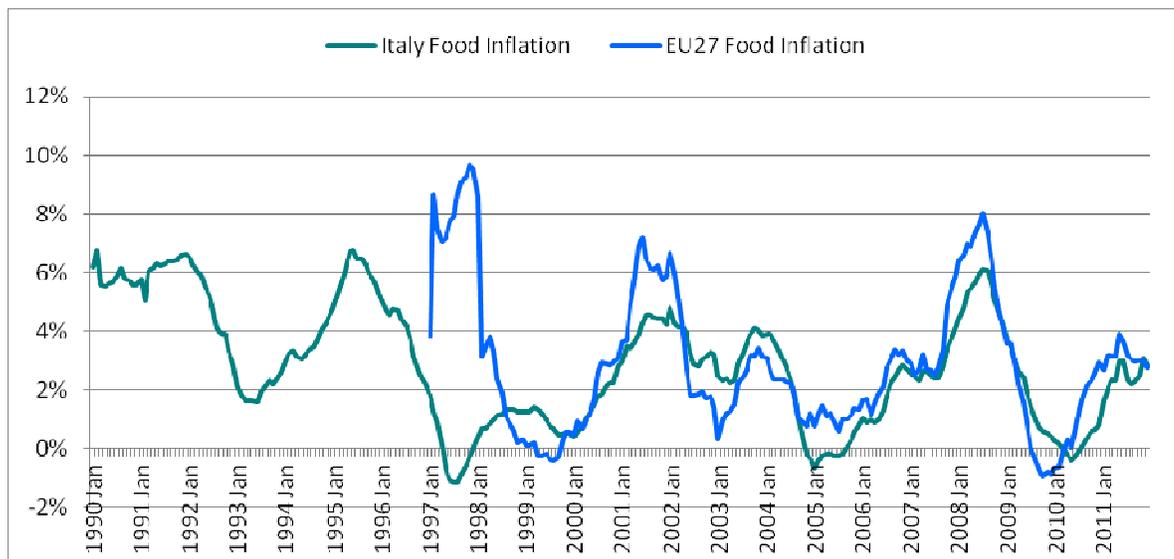
Latvia

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1997 Jan - 1999 Dec	0.88%	1.87%	1997 Jan - 1999 Dec	0.79%	1.83%	1997 Jan - 1999 Dec	7.73%	3.33%
2000 Jan - 2011 Aug	6.03%	5.92%	2000 Jan - 2011 Dec	6.10%	6.11%	2000 Jan - 2011 Aug	3.09%	3.48%
2007 Jan - 2011 Aug	7.54%	8.19%	2007 Jan - 2011 Dec	7.32%	8.36%	2007 Jan - 2011 Aug	3.09%	5.24%
1997 Jan - 2011 Aug	**4.98%**	**5.73%**	**1997 Jan - 2011 Dec**	**5.04%**	**5.92%**	**1997 Jan -2011 Aug**	**4.04%**	**3.92%**

Latvia: General, Food and Non-Food Inflation, 1990-2011
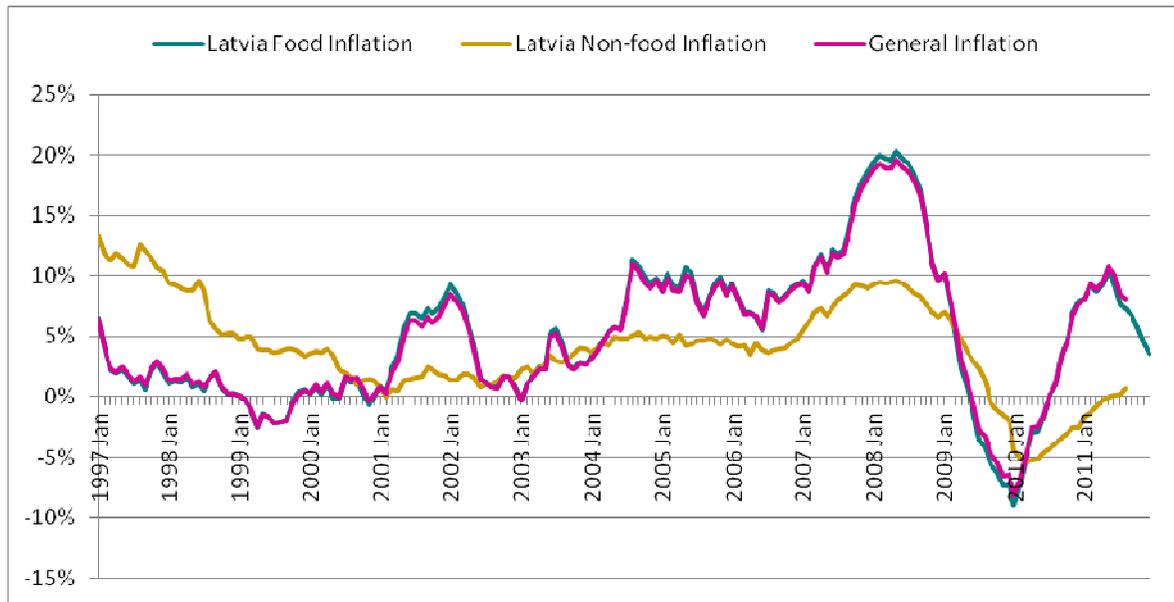
Food Inflation: Latvia and EU-27

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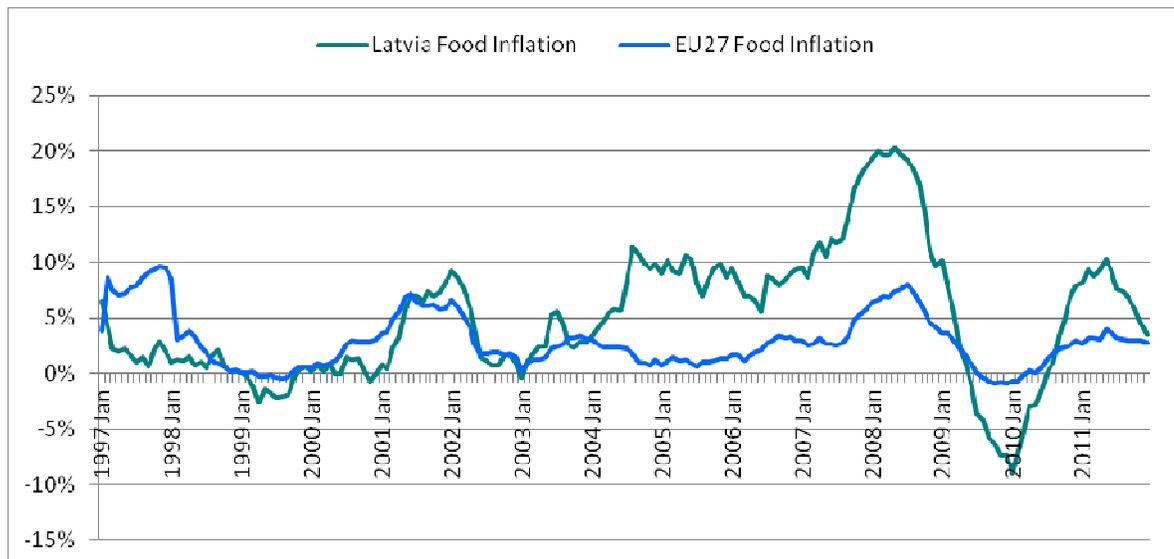
Lithuania

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	St
1996 Jan - 1999 Dec	6.81%	11.58%	1997 Jan - 1999 Dec	0.89%	5.12%	1997 Jan - 1999 Dec	7.24%	3
2000 Jan - 2011 Aug	3.51%	5.94%	2000 Jan - 2011 Dec	3.72%	6.00%	2000 Jan - 2011 Aug	1.20%	2
2007 Jan - 2011 Aug	6.90%	6.70%	2007 Jan - 2011 Dec	6.85%	6.74%	2007 Jan - 2011 Aug	2.13%	3
1996 Jan - 2011 Aug	**4.35%**	**7.88%**	**1997 Jan - 2011 Dec**	**3.15%**	**5.93%**	**1997 Jan -2011 Aug**	**2.43%**	**3**

Lithuania: General, Food and Non-Food Inflation, 1990-2011
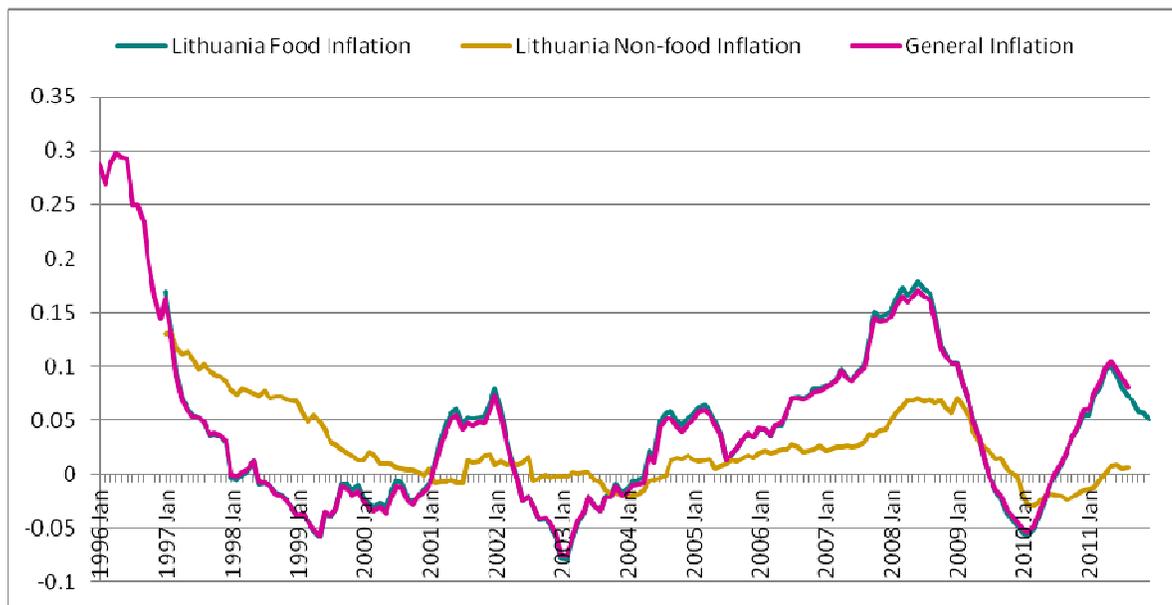
Food Inflation: Lithuania and EU-27

46
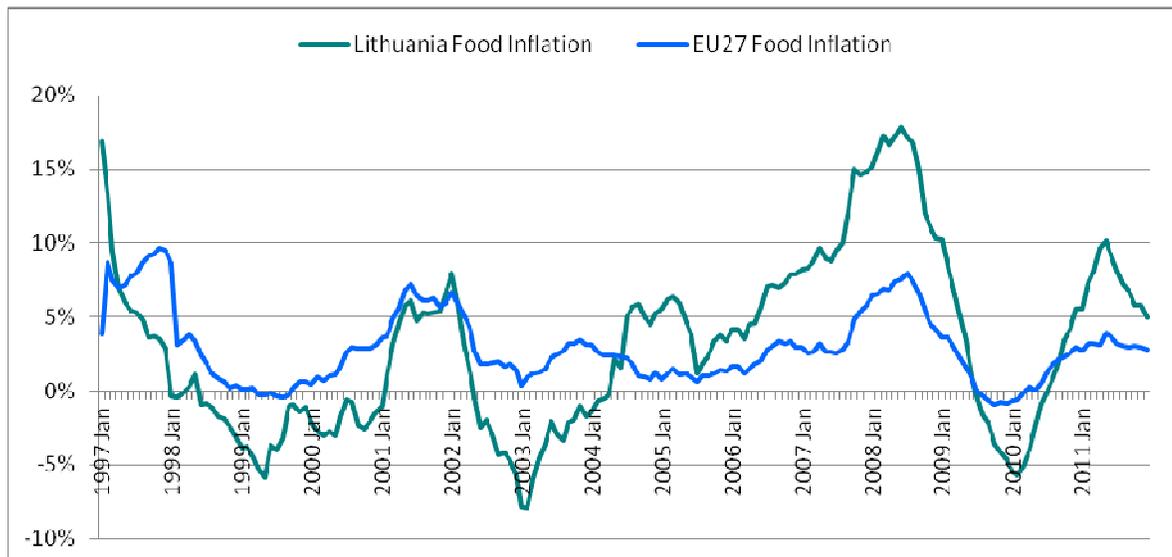
Luxembourg

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.14%	1.05%	1990 Jan - 1999 Dec	1.66%	1.32%	1990 Jan - 1999 Dec	2.35%	1.29%
2000 Jan - 2011 Dec	2.39%	0.89%	2000 Jan - 2011 Dec	2.63%	1.49%	2000 Jan - 2011 Dec	2.04%	0.33%
2007 Jan - 2011 Dec	2.32%	1.25%	2007 Jan - 2011 Dec	2.67%	1.77%	2007 Jan - 2011 Dec	1.99%	0.34%
1990 Jan - 2011 Dec	**2.28%**	**0.97%**	**1990 Jan - 2011 Dec**	**2.19%**	**1.50%**	**1990 Jan - 2011 Dec**	**2.18%**	**0.92%**

Luxembourg: General, Food and Non-Food Inflation, 1990-2011
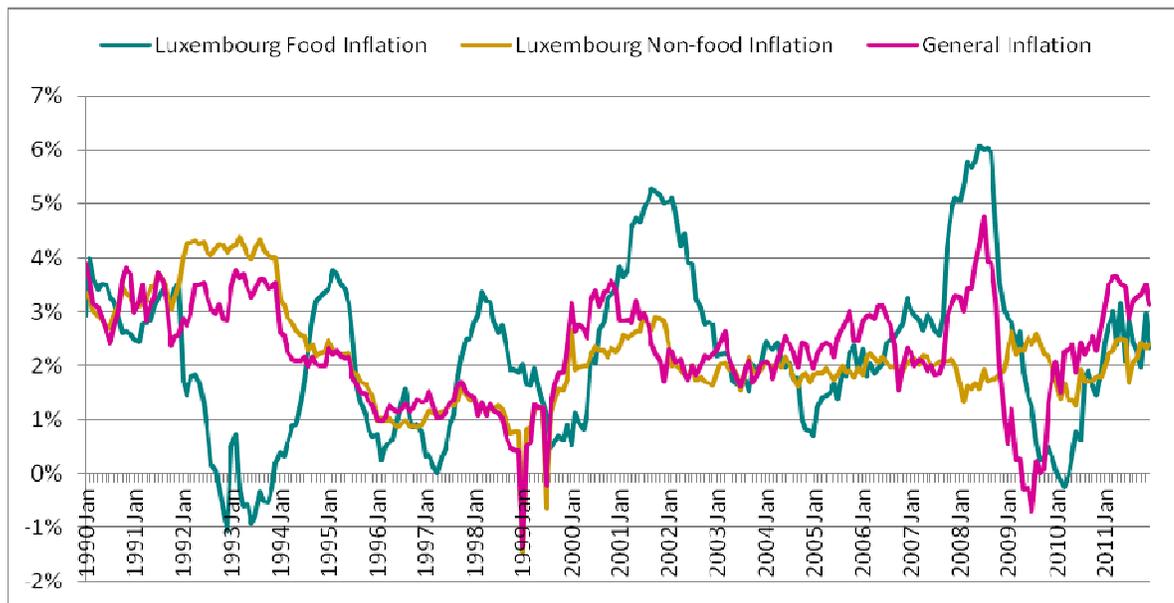
Food Inflation: Luxembourg and EU-27

47
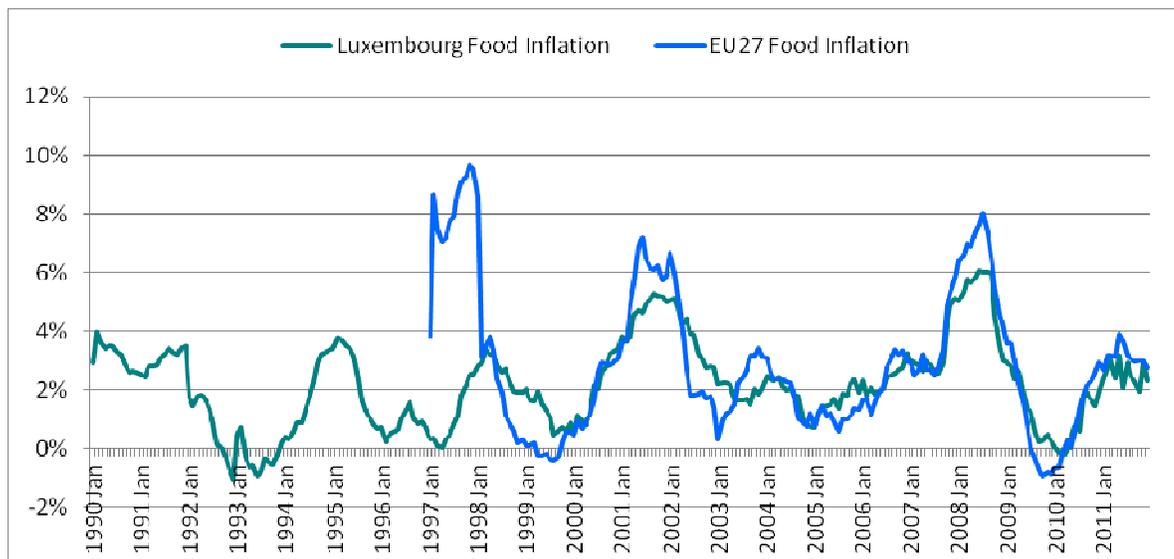
Malta

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1997 Jan - 1999 Dec	1.46%	2.13%	1997 Jan - 1999 Dec	1.28%	2.53%	1997 Jan - 1999 Dec	3.08%	1.01%
2000 Jan - 2011 Aug	2.98%	3.10%	2000 Jan - 2011 Aug	3.13%	3.48%	2000 Jan - 2011 Aug	1.81%	1.05%
2007 Jan - 2011 Aug	4.73%	3.40%	2007 Jan - 2011 Aug	5.15%	3.74%	2007 Jan - 2011 Aug	1.32%	1.31%
1997 Jan - 2011 Aug	**2.67%**	**2.98%**	**1997 Jan - 2011 Aug**	**2.76%**	**3.39%**	**1997 Jan -2011 Aug**	**2.07%**	**1.16%**

Malta: General, Food and Non-Food Inflation, 1990-2011
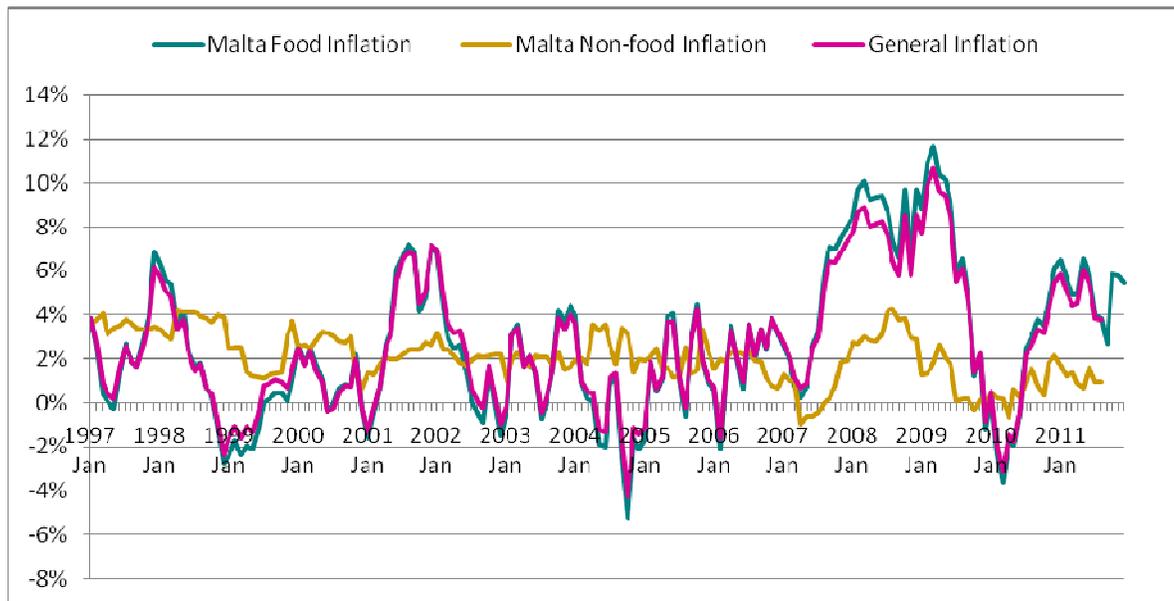
Food Inflation: Malta and EU-27
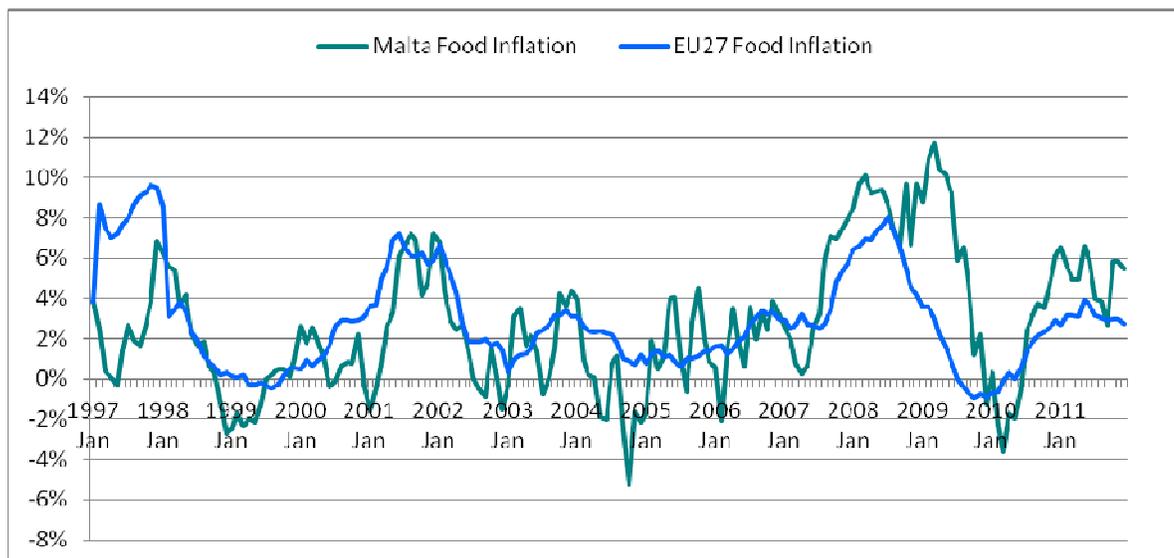
Netherlands

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.41%	0.54%	1990 Jan - 1999 Dec	1.42%	1.59%	1990 Jan - 1999 Dec	2.61%	0.64%
2000 Jan - 2011 Dec	2.05%	0.93%	2000 Jan - 2011 Dec	1.49%	3.00%	2000 Jan - 2011 Dec	1.90%	0.84%
2007 Jan - 2011 Dec	1.76%	0.68%	2007 Jan - 2011 Dec	1.94%	2.32%	2007 Jan - 2011 Dec	1.66%	0.28%
1990 Jan - 2011 Dec	**2.21%**	**0.80%**	**1990 Jan - 2011 Dec**	**1.46%**	**2.46%**	**1990 Jan - 2011 Dec**	**2.22%**	**0.83%**

Netherlands: General, Food and Non-Food Inflation, 1990-2011
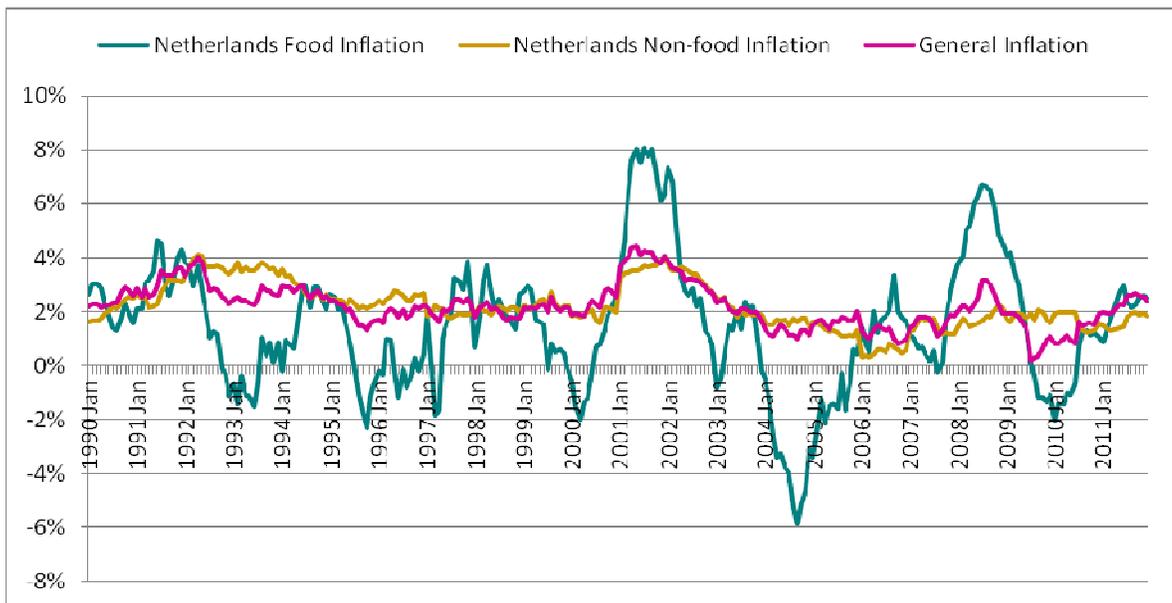
Food Inflation: Netherlands and EU-27
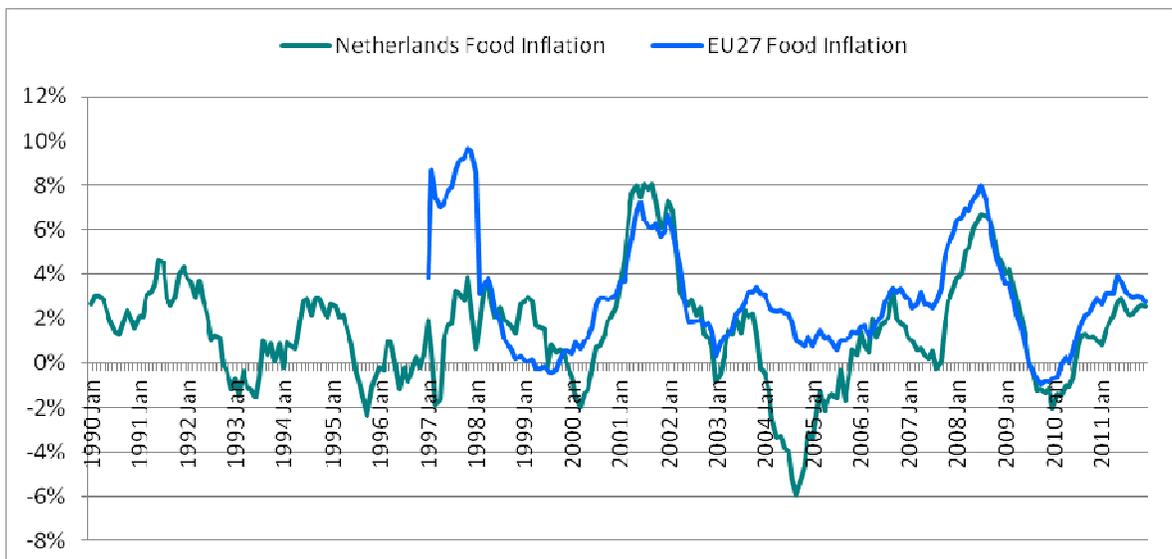
Poland

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1996 Jan - 1999 Dec	12.48%	4.33%	1996 Jan - 1999 Dec	9.13%	5.96%	1996 Jan - 1999 Dec	14.38%	3.73%
2000 Jan - 2011 Dec	3.42%	2.34%	2000 Jan - 2011 Dec	3.57%	3.39%	2000 Jan - 2011 Dec	2.68%	2.34%
2007 Jan - 2011 Dec	3.38%	0.90%	2007 Jan - 2011 Dec	4.45%	1.66%	2007 Jan - 2011 Dec	2.04%	0.77%
1990 Jan - 2011 Dec	**5.68%**	**4.92%**	**1996 Jan - 2011 Dec**	**4.96%**	**4.81%**	**1996 Jan - 2011 Dec**	**5.60%**	**5.77%**

Poland: General, Food and Non-Food Inflation, 1990-2011
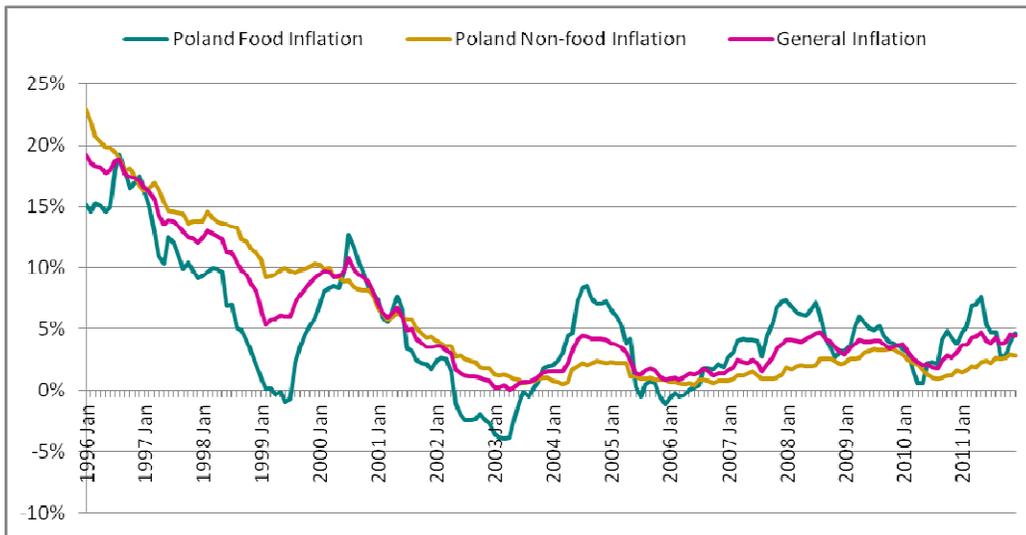
Food Inflation: Poland and EU-27
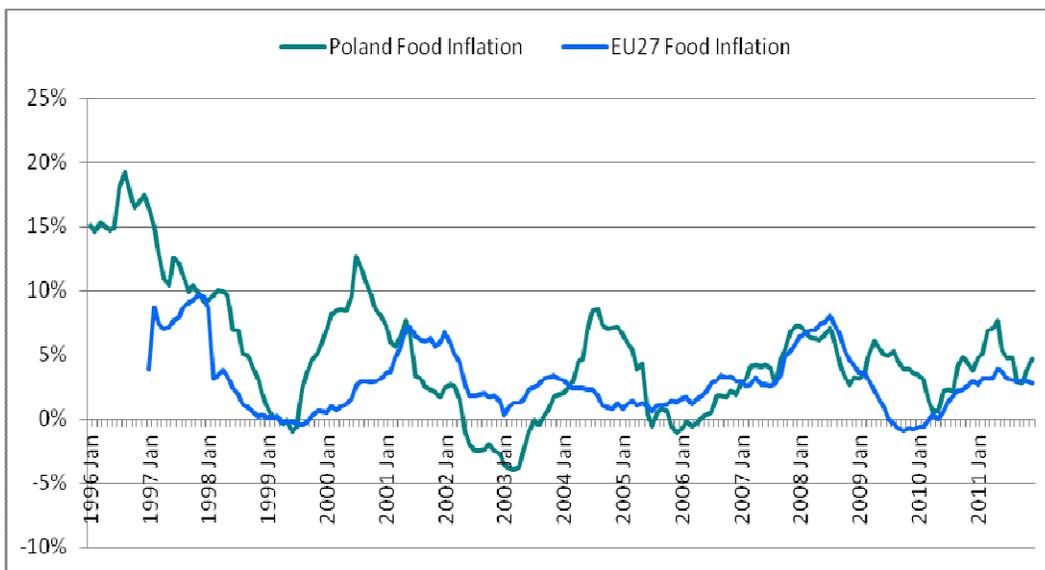
Portugal

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	5.78%	3.52%	1990 Jan - 1999 Dec	4.34%	4.08%	1992 Jan - 1999 Dec	5.71%	3.11%
2000 Jan - 2011 Dec	2.55%	1.36%	2000 Jan - 2011 Dec	1.71%	2.77%	2000 Jan - 2011 Dec	2.44%	1.07%
2007 Jan - 2011 Dec	1.82%	1.63%	2007 Jan - 2011 Dec	0.88%	3.22%	2007 Jan - 2011 Dec	1.56%	0.81%
1990 Jan - 2011 Dec	**4.02%**	**3.04%**	**1990 Jan - 2011 Dec**	**2.90%**	**3.66%**	**1992 Jan - 2011 Dec**	**3.75%**	**2.67%**

Portugal: General, Food and Non-Food Inflation, 1990-2011
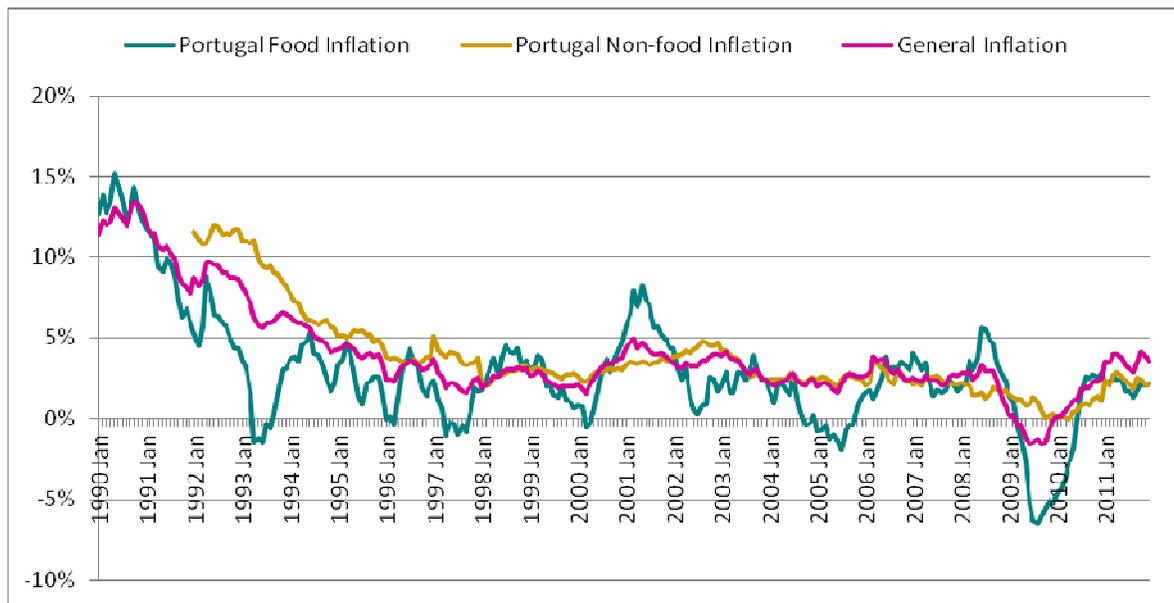
Food Inflation: Portugal and EU-27

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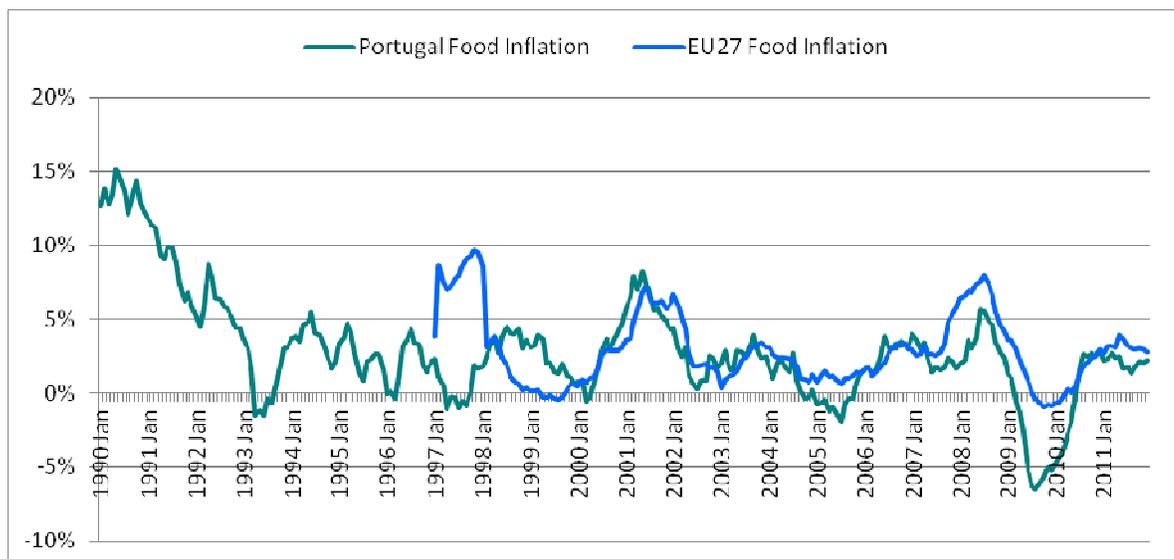
Romania

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1996 Jan - 1999 Dec	46.25%	29.11%	1996 Jan - 1999 Dec	46.25%	29.11%	1990 Jan - 1999 Dec	..	..
2000 Jan - 2011 Aug	12.05%	11.14%	2000 Jan - 2011 Dec	11.77%	11.11%	2001 Dec - 2011 Dec	7.87%	5.22%
2007 Jan - 2011 Aug	5.11%	3.88%	2007 Jan - 2011 Dec	4.90%	3.84%	2007 Jan - 2011 Dec	4.46%	1.14%
1996 Jan - 2011 Aug	**20.78%**	**23.00%**	**1996 Jan - 2011 Dec**	**20.39%**	**22.92%**	**2001 Dec - 2011 Dec**	**7.87%**	**5.22%**

Romania: General, Food and Non-Food Inflation, 1990-2011
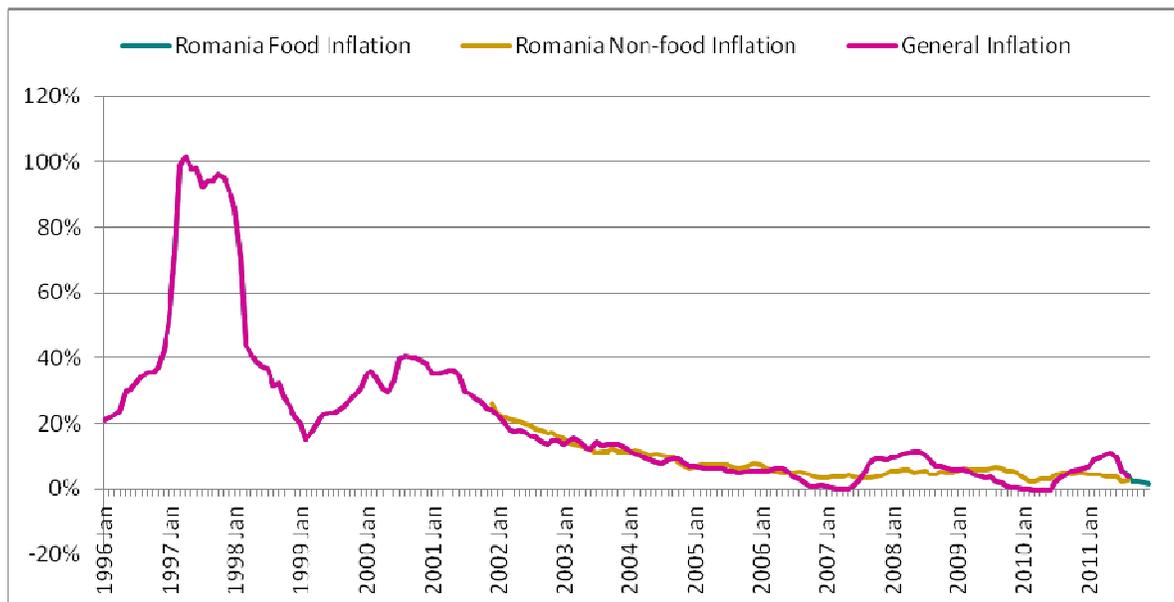
Food Inflation: Romania and EU-27
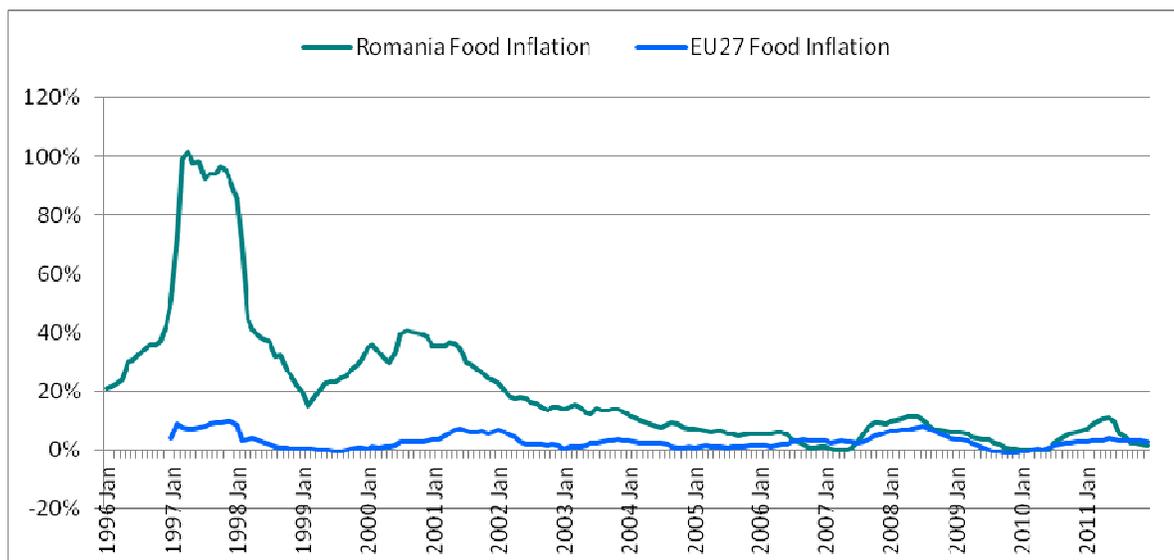
Slovakia

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1992 Jan - 1999 Dec	10.07%	5.27%	1991 Jan - 1999 Dec	12.67%	12.70%	1996 Jan - 1999 Dec	7.81%	2.52%
2000 Jan - 2011 Dec	4.81%	3.16%	2000 Jan - 2011 Dec	3.00%	3.54%	2000 Jan - 2011 Dec	4.39%	2.99%
2007 Jan - 2011 Dec	2.72%	1.44%	2007 Jan - 2011 Dec	3.10%	4.39%	2007 Jan - 2011 Dec	2.82%	0.90%
1992 Jan - 2011 Dec	**6.91%**	**4.86%**	**1991 Jan - 2011 Dec**	**7.14%**	**9.94%**	**1996 Jan - 2011 Dec**	**5.24%**	**3.23%**

Slovakia: General, Food and Non-Food Inflation, 1990-2011
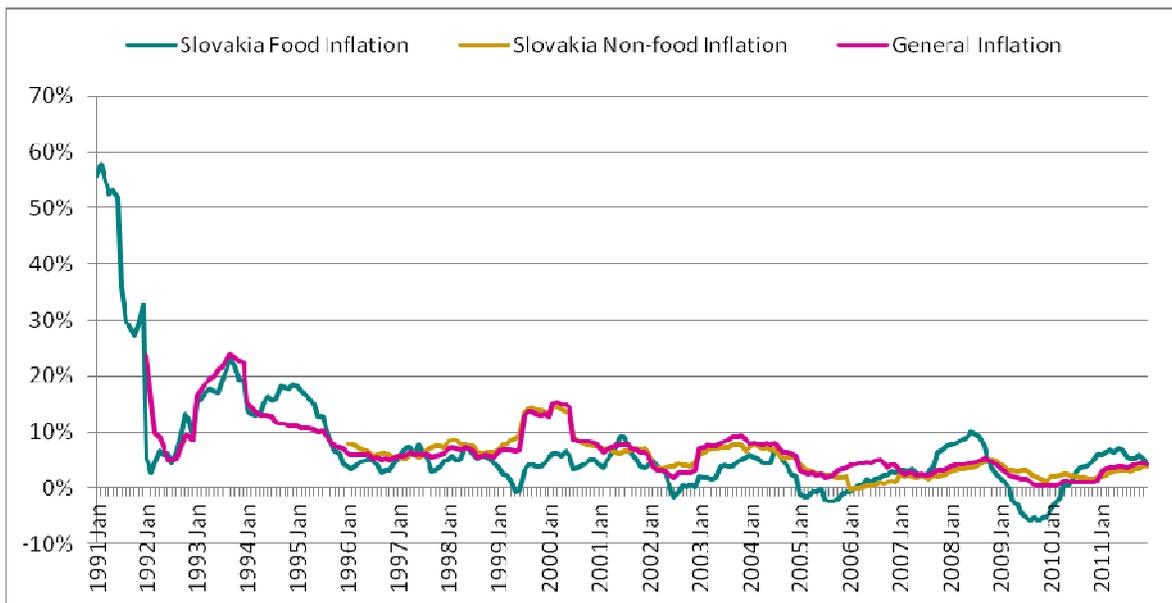
Food Inflation: Slovakia and EU-27

53
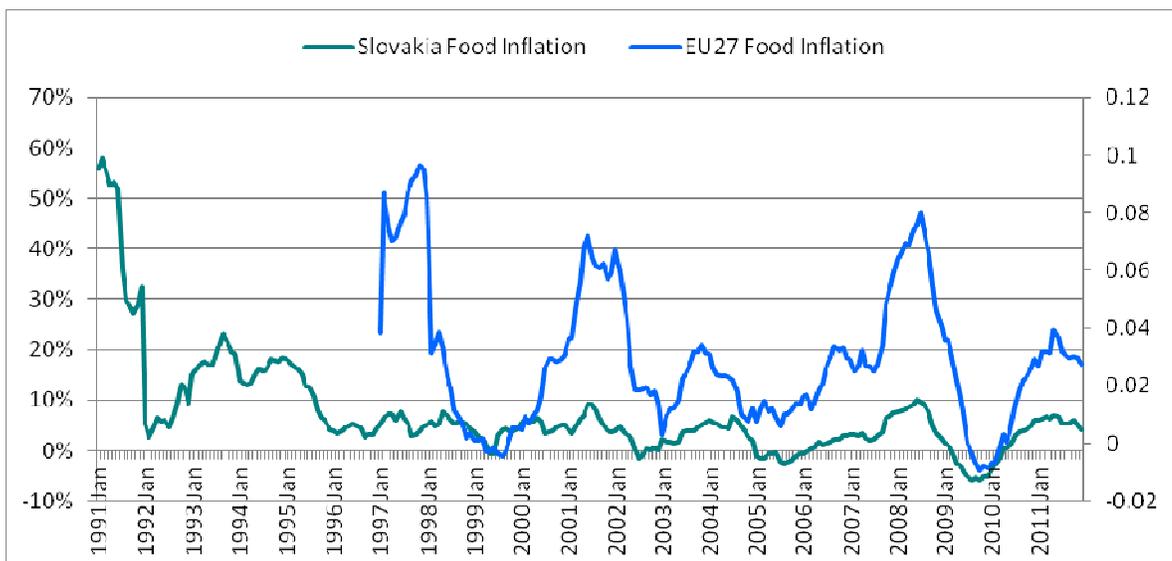
Slovenia

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1996 Jan - 1999 Dec	7.75%	1.58%	1997 Jan - 1999 Dec	6.60%	2.74%	1990 Jan - 1999 Dec	..	..
2000 Jan - 2011 Dec	4.26%	2.62%	2000 Jan - 2011 Dec	2.55%	6.56%	2000 Jan - 2011 Dec	3.30%	2.61%
2007 Jan - 2011 Dec	2.70%	1.92%	2007 Jan - 2011 Dec	4.59%	4.26%	2007 Jan - 2011 Dec	1.67%	1.52%
1990 Jan - 2011 Dec	**5.13%**	**2.84%**	**1997 Jan - 2011 Dec**	**3.36%**	**6.20%**	**2001 Jan - 2011 Dec**	**3.30%**	**2.61%**

Slovenia: General, Food and Non-Food Inflation, 1990-2011
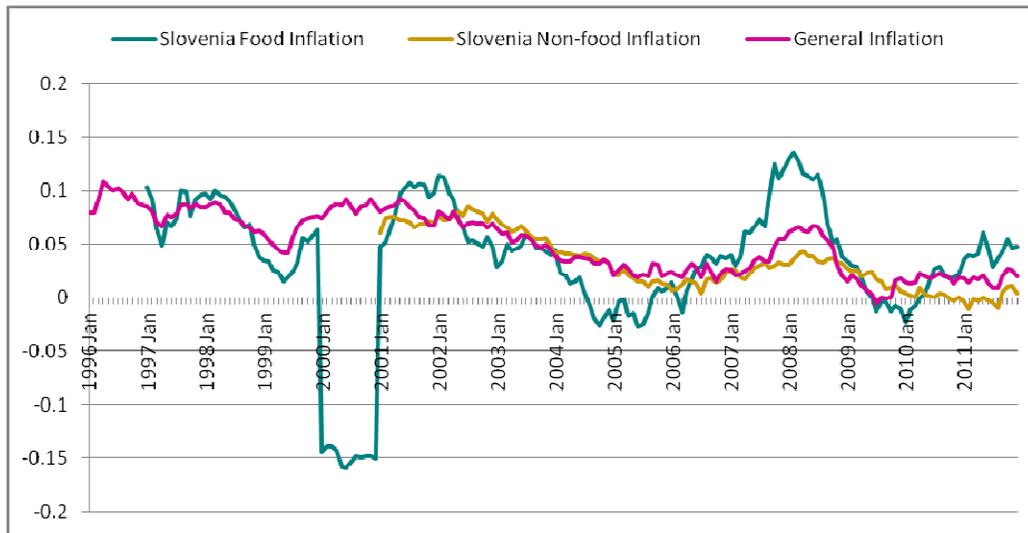
Food Inflation: Slovenia and EU-27
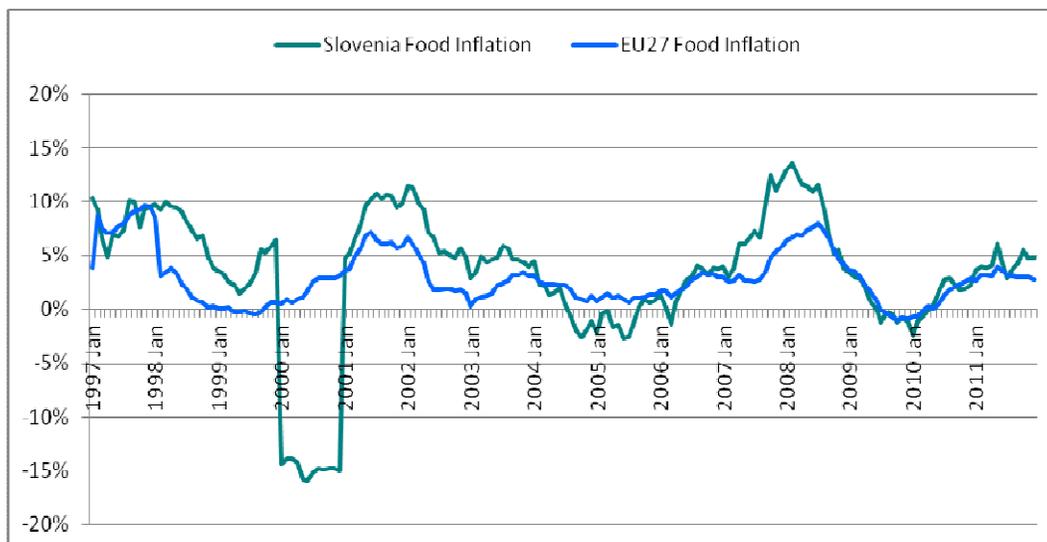
Spain

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	4.12%	1.64%	1994 Jan - 1999 Dec	2.51%	2.28%	1990 Jan - 1999 Dec	4.52%	1.71%
2000 Jan - 2011 Dec	2.84%	1.23%	2000 Jan - 2011 Dec	3.09%	2.34%	2000 Jan - 2011 Dec	2.25%	0.93%
2007 Jan - 2011 Dec	2.28%	1.65%	2007 Jan - 2011 Dec	1.89%	2.93%	2007 Jan - 2011 Dec	1.48%	0.86%
1990 Jan - 2011 Dec	**3.42%**	**1.56%**	**1994 Jan - 2011 Dec**	**2.89%**	**2.33%**	**1990 Jan - 2011 Dec**	**3.28%**	**1.75%**

Spain: General, Food and Non-Food Inflation, 1990-2011
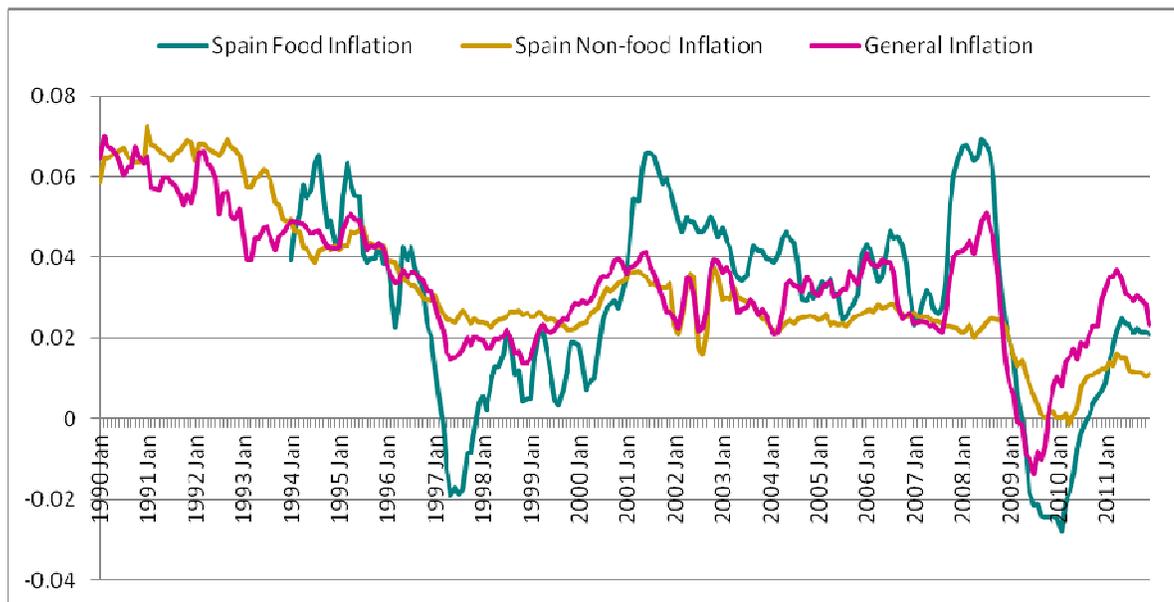
Food Inflation: Spain and EU-27

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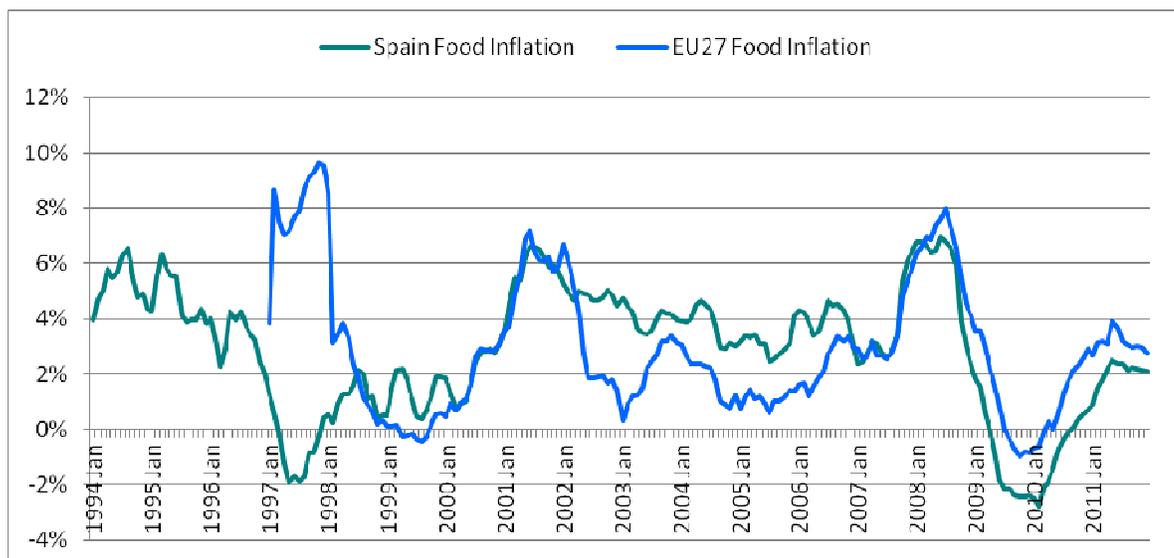
Sweden

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	3.18%	3.50%	1990 Jan - 1999 Dec	0.57%	4.10%	1990 Jan - 1999 Dec	3.34%	3.49%
2000 Jan - 2011 Dec	1.55%	1.23%	2000 Jan - 2011 Dec	1.69%	2.24%	2000 Jan - 2011 Dec	0.74%	1.33%
2007 Jan - 2011 Dec	1.83%	1.57%	2007 Jan - 2011 Dec	2.85%	2.24%	2007 Jan - 2011 Dec	1.19%	1.61%
1990 Jan - 2011 Dec	**2.29%**	**2.65%**	**1990 Jan - 2011 Dec**	**1.18%**	**3.26%**	**1990 Jan - 2011 Dec**	**1.92%**	**2.86%**

Sweden: General, Food and Non-Food Inflation, 1990-2011
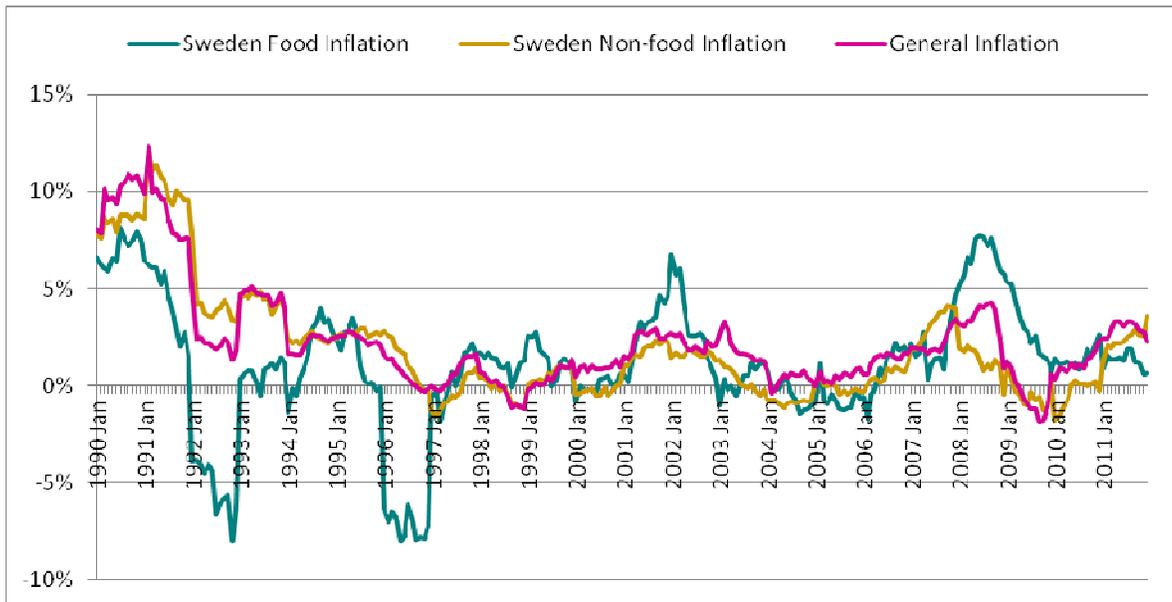
Food Inflation: Sweden and EU-27
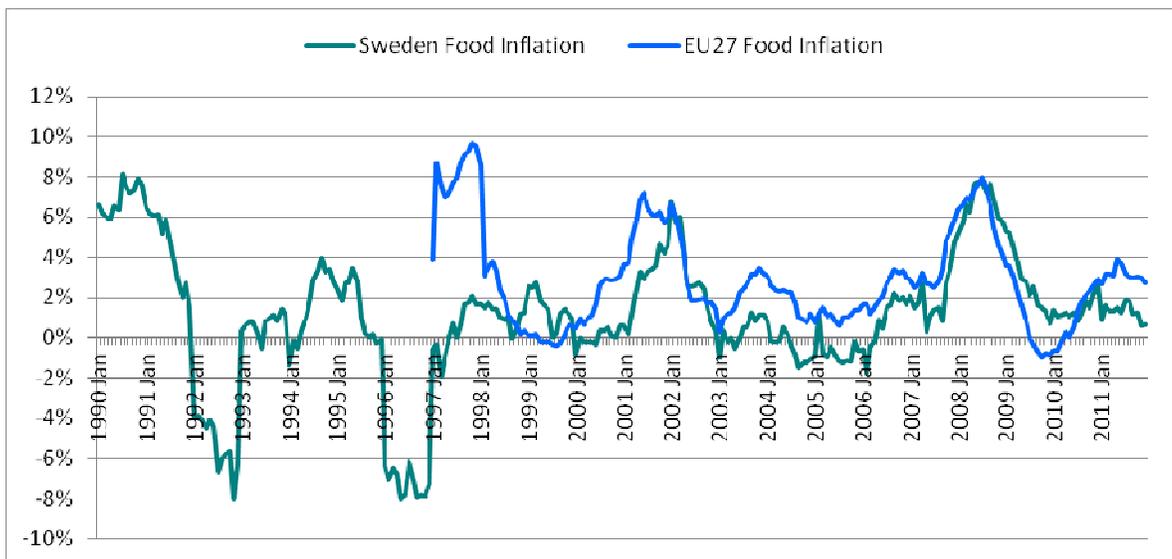
United Kingdom

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	3.24%	2.13%	1990 Jan - 1999 Dec	2.55%	2.54%	1990 Jan - 1999 Dec	3.22%	2.55%
2000 Jan - 2011 Dec	2.16%	1.12%	2000 Jan - 2011 Dec	3.07%	3.03%	2000 Jan - 2011 Dec	1.57%	0.81%
2007 Jan - 2011 Dec	3.12%	1.01%	2007 Jan - 2011 Dec	5.41%	2.79%	2007 Jan - 2011 Dec	2.21%	0.72%
1990 Jan - 2011 Dec	**2.65%**	**1.74%**	**1990 Jan - 2011 Dec**	**2.83%**	**2.82%**	**1990 Jan - 2011 Dec**	**2.32%**	**2.00%**

United Kingdom: General, Food and Non-Food Inflation, 1990-2011
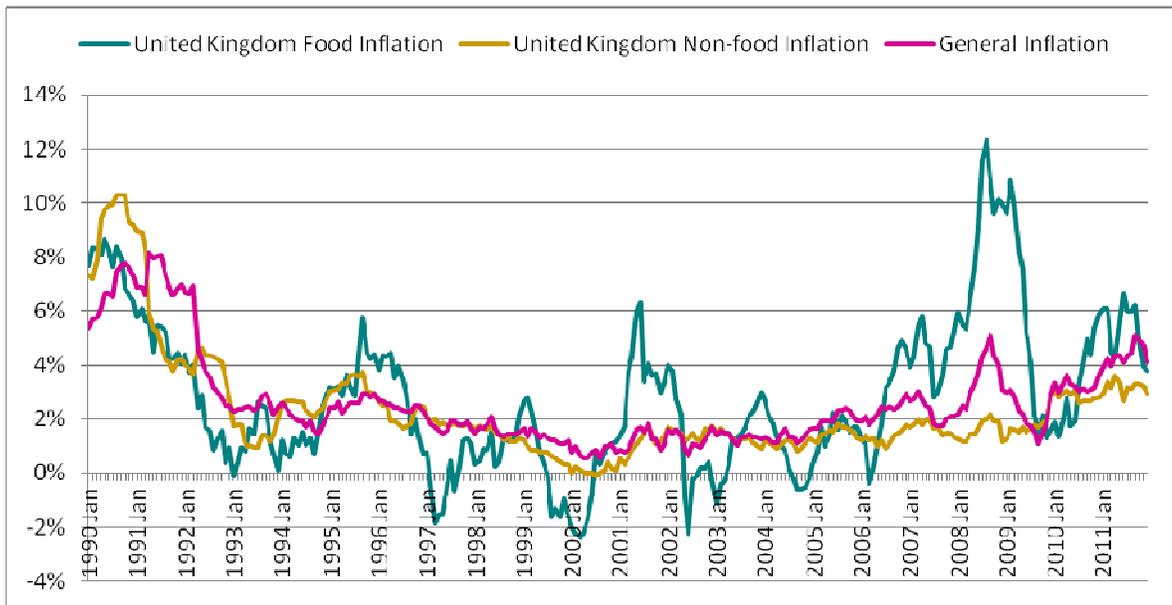
Food Inflation: United Kingdom and EU-27
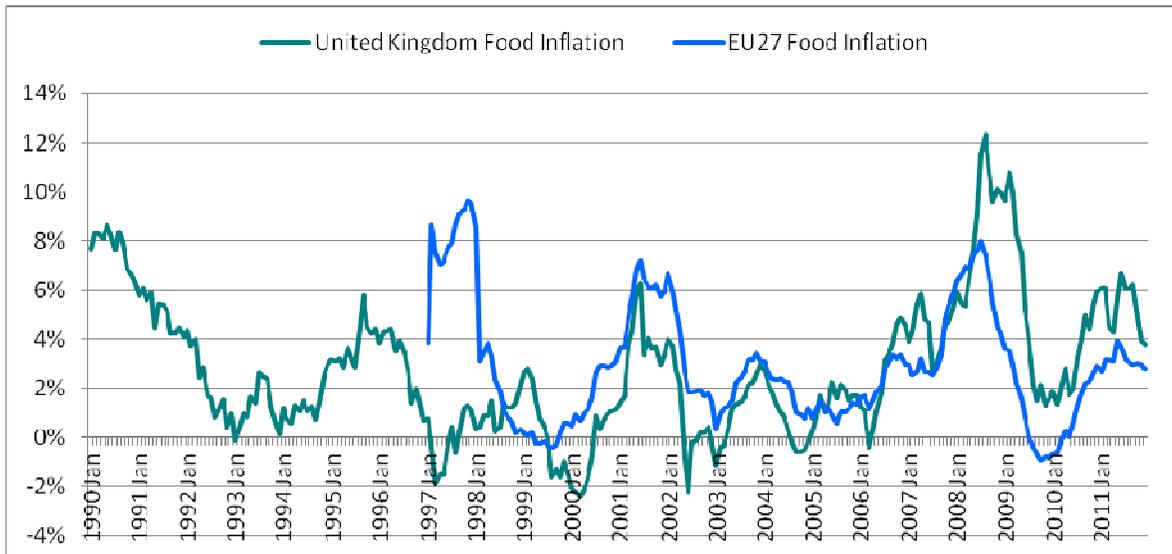
EU-27

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1992 Jan - 1999 Dec	4.11%	3.76%	1997 Jan - 1999 Dec	3.49%	3.75%	1992 Jan - 1999 Dec	3.03%	0.95%
2000 Jan - 2011 Aug	2.94%	2.07%	2000 Jan - 2011 Dec	2.77%	2.03%	2000 Jan - 2011 Aug	1.70%	0.38%
2007 Jan - 2011 Aug	2.99%	2.33%	2007 Jan - 2011 Dec	3.01%	2.37%	2007 Jan - 2011 Aug	1.66%	0.25%
1992 Jan - 2011 Aug	**3.41%**	**2.93%**	**1997 Jan - 2011 Dec**	**2.92%**	**2.48%**	**1992 Jan -2011 Aug**	**2.24%**	**0.94%**

EU-27: General, Food and Non-Food Inflation, 1990-2011

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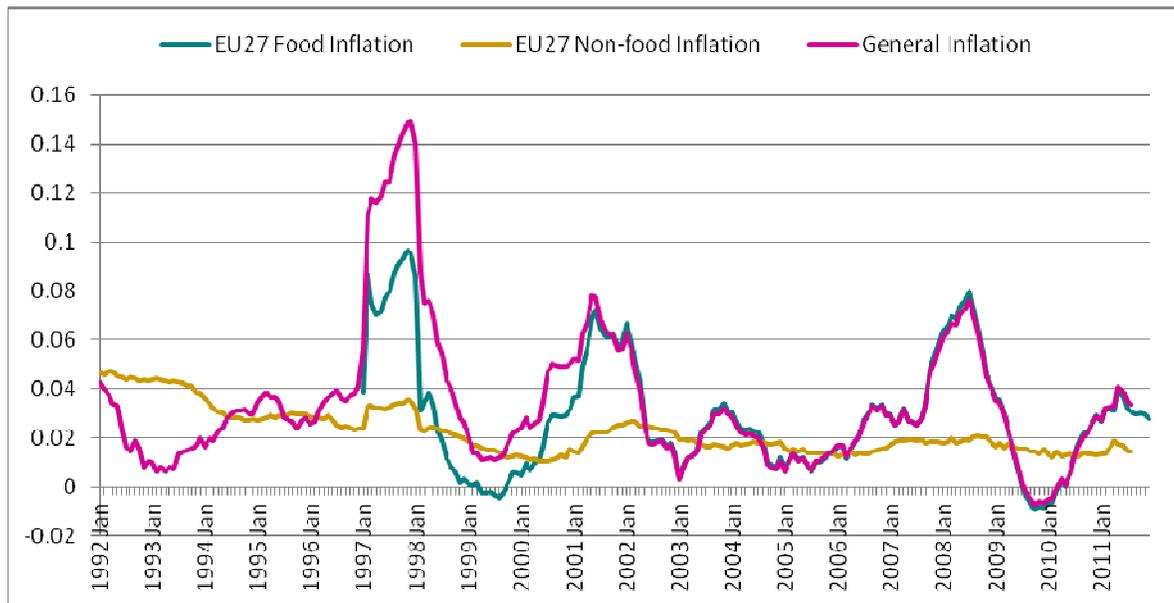
Euro Area

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1991 Jan - 1999 Dec	1.72%	1.20%	1996 Jan - 1999 Dec	1.12%	0.84%	1991 Jan - 1999 Dec	2.62%	1.14%
2000 Jan - 2011 Aug	2.12%	1.87%	2000 Jan - 2011 Dec	2.21%	1.94%	2000 Jan - 2011 Aug	1.57%	0.42%
2007 Jan - 2011 Aug	2.12%	2.25%	2007 Jan - 2011 Dec	2.17%	2.26%	2007 Jan - 2011 Aug	1.48%	0.37%
1991 Jan - 2011 Aug	**1.94%**	**1.62%**	**1996 Jan - 2011 Dec**	**1.93%**	**1.79%**	**1991 Jan -2011 Aug**	**2.03%**	**0.97%**

Euro Area: General, Food and Non-Food Inflation, 1990-2011
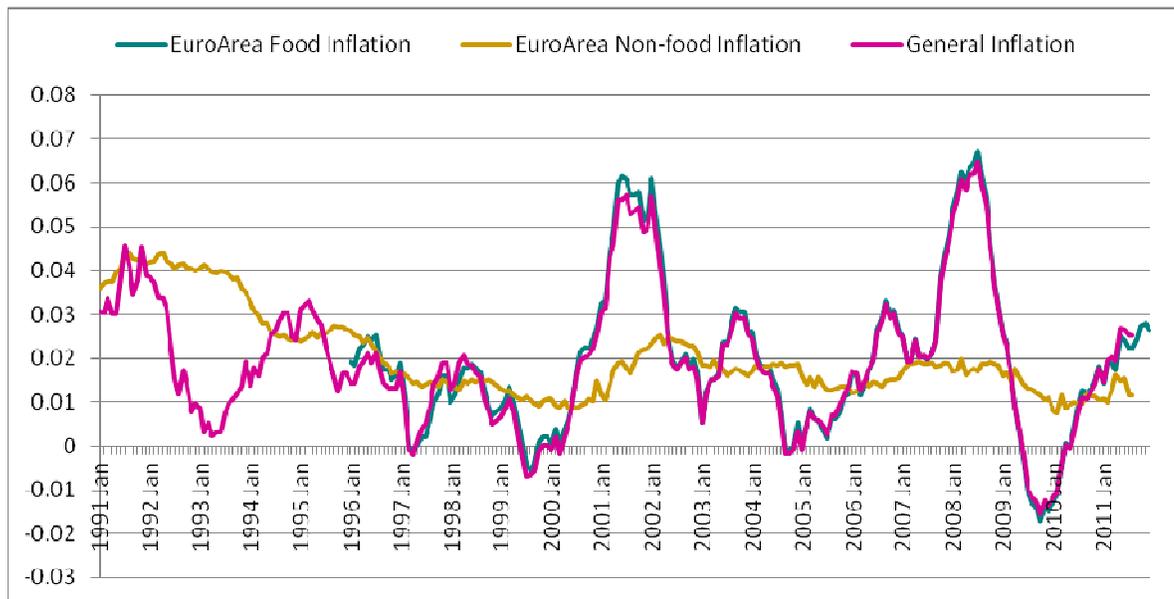
Food Inflation: Euro Area and EU-27
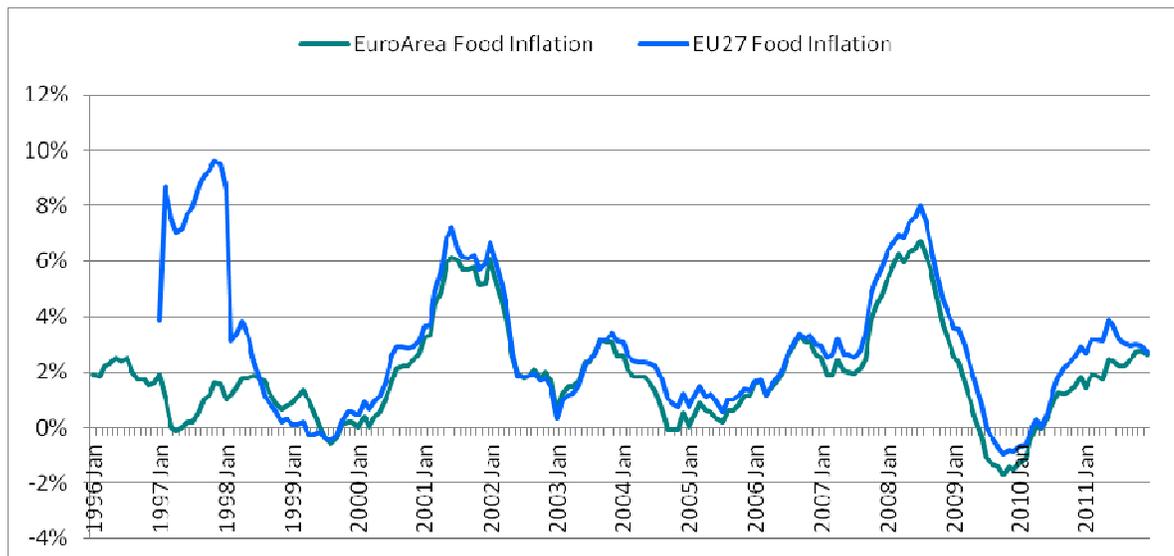
OECD

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	5.16%	1.02%	1990 Jan - 1999 Dec	4.72%	1.50%	1990 Jan - 1999 Dec	5.31%	0.92%
2000 Jan - 2011 Dec	2.63%	0.98%	2000 Jan - 2011 Dec	2.88%	1.65%	2000 Jan - 2011 Dec	2.19%	0.70%
2007 Jan - 2011 Dec	2.27%	1.20%	2007 Jan - 2011 Dec	3.24%	2.15%	2007 Jan - 2011 Dec	1.78%	0.36%
1990 Jan - 2011 Dec	**3.78%**	**1.60%**	**1990 Jan - 2011 Dec**	**3.71%**	**1.83%**	**1990 Jan - 2011 Dec**	**3.61%**	**1.75%**

OECD: General, Food and Non-Food Inflation, 1990-2011
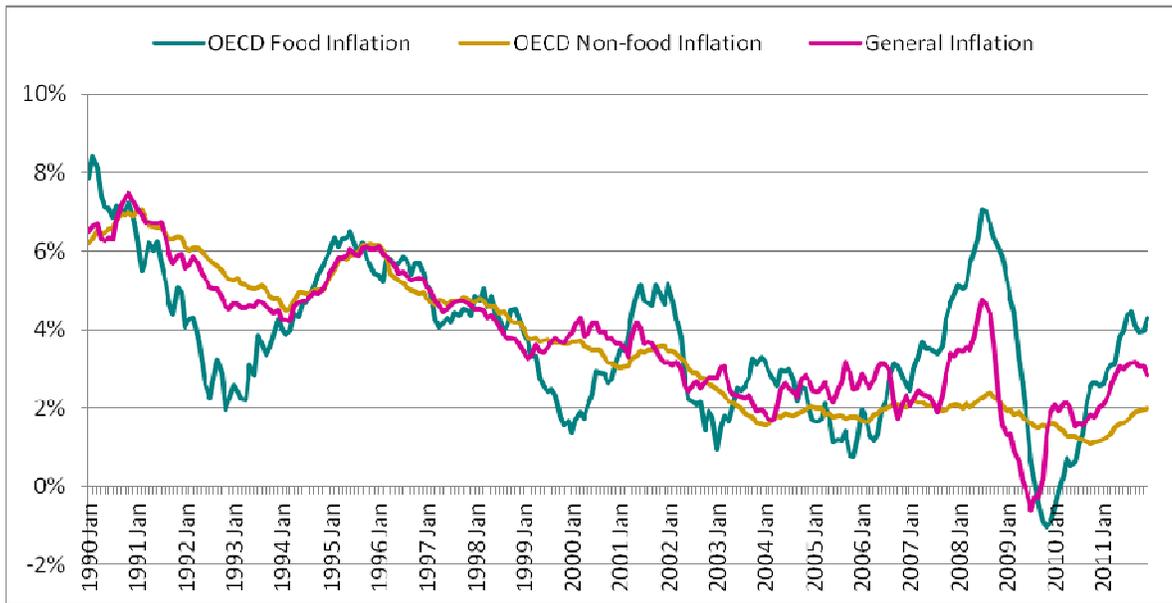
Food Inflation: OECD and EU-27
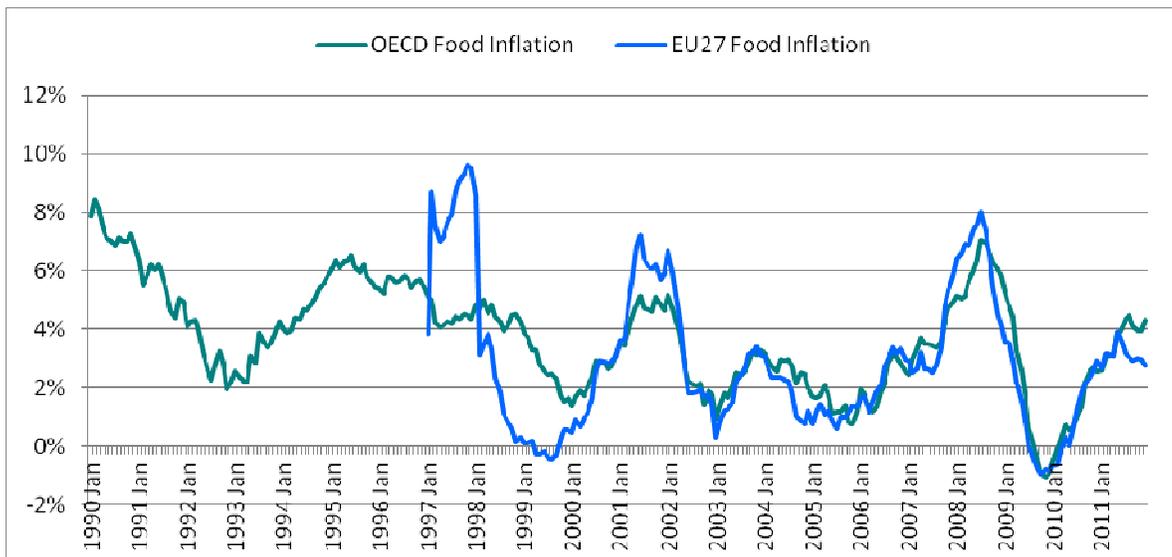
OECD-Europe

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	7.39%	1.05%	1990 Jan - 1999 Dec	6.47%	1.94%	1990 Jan - 1999 Dec	7.57%	0.83%
2000 Jan - 2011 Dec	3.27%	1.39%	2000 Jan - 2011 Dec	3.41%	2.27%	2000 Jan - 2011 Dec	2.84%	1.32%
2007 Jan - 2011 Dec	2.64%	0.98%	2007 Jan - 2011 Dec	3.42%	2.12%	2007 Jan - 2011 Dec	2.04%	0.25%
1990 Jan - 2011 Dec	**5.14%**	**2.40%**	**1990 Jan - 2011 Dec**	**4.80%**	**2.61%**	**1990 Jan - 2011 Dec**	**4.99%**	**2.61%**

OECD - Europe: General, Food and Non-Food Inflation, 1990-2011
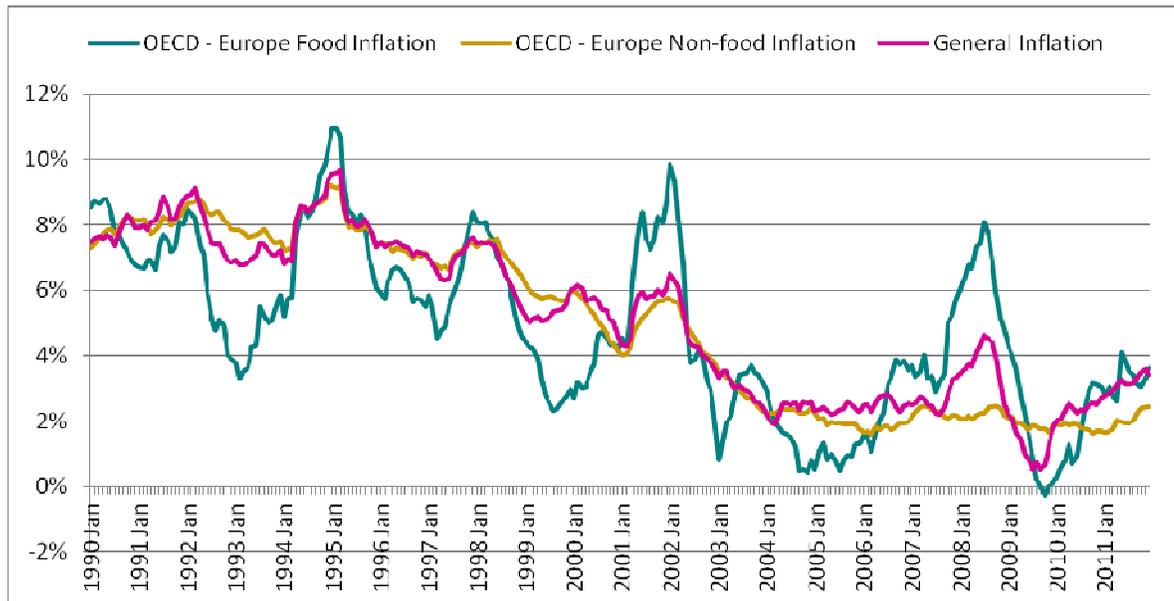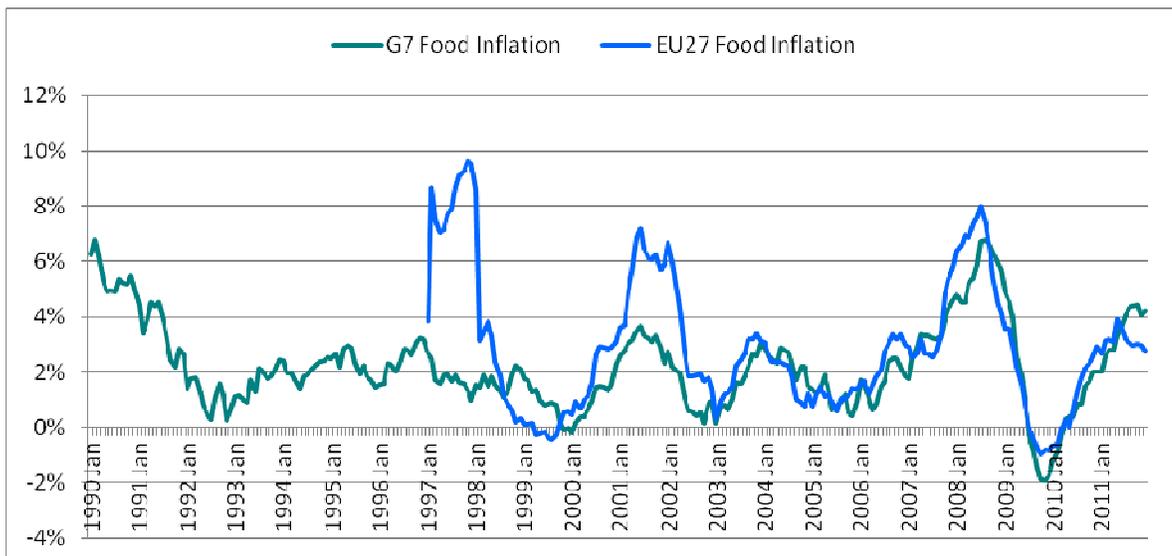

Food Inflation: OECD - Europe and EU-27

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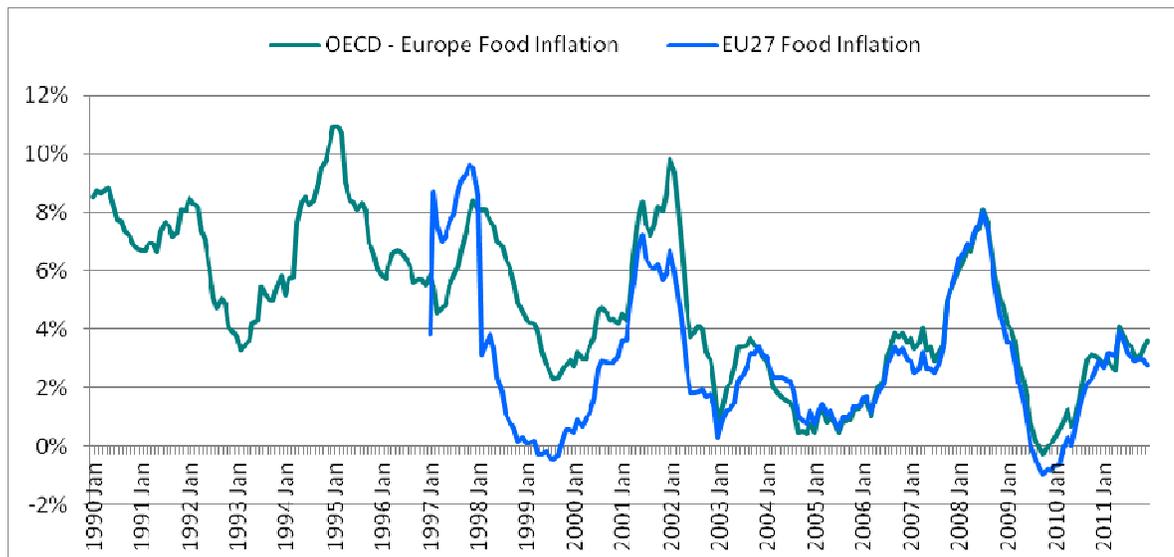
G7

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.64%	1.11%	1990 Jan - 1999 Dec	2.28%	1.39%	1990 Jan - 1999 Dec	2.81%	1.07%
2000 Jan - 2011 Dec	1.93%	0.95%	2000 Jan - 2011 Dec	2.17%	1.75%	2000 Jan - 2011 Dec	1.50%	0.30%
2007 Jan - 2011 Dec	1.85%	1.35%	2007 Jan - 2011 Dec	2.82%	2.33%	2007 Jan - 2011 Dec	1.42%	0.38%
1990 Jan - 2011 Dec	**2.25%**	**1.08%**	**1990 Jan - 2011 Dec**	**2.22%**	**1.60%**	**1990 Jan - 2011 Dec**	**2.10%**	**1.00%**

G7: General, Food and Non-Food Inflation, 1990-2011
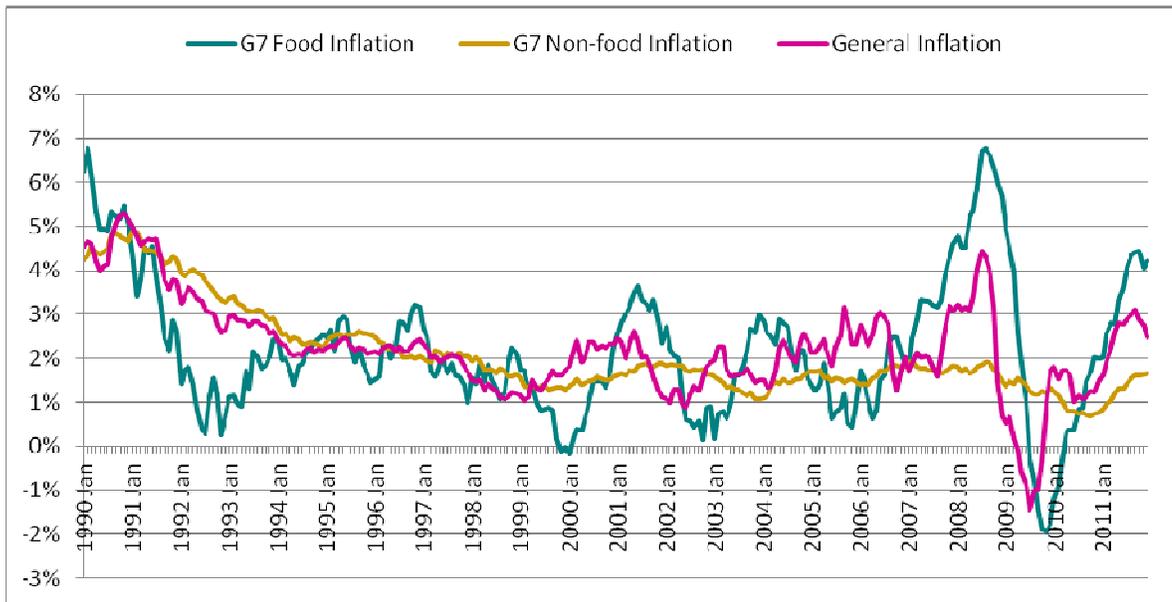
Food Inflation: G7 and EU-27

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Switzerland

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.29%	2.03%	1990 Jan - 1999 Dec	1.15%	2.03%	1990 Jan - 1999 Dec	2.55%	2.22%
2000 Jan - 2011 Dec	0.87%	0.80%	2000 Jan - 2011 Dec	0.49%	1.91%	2000 Jan - 2011 Dec	0.75%	0.47%
2007 Jan - 2011 Dec	0.71%	1.10%	2007 Jan - 2011 Dec	-0.21%	2.32%	2007 Jan - 2011 Dec	0.68%	0.58%
1990 Jan - 2011 Dec	**1.51%**	**1.65%**	**1990 Jan - 2011 Dec**	**0.79%**	**1.99%**	**1990 Jan - 2011 Dec**	**1.57%**	**1.77%**

Switzerland: General, Food and Non-Food Inflation, 1990-2011
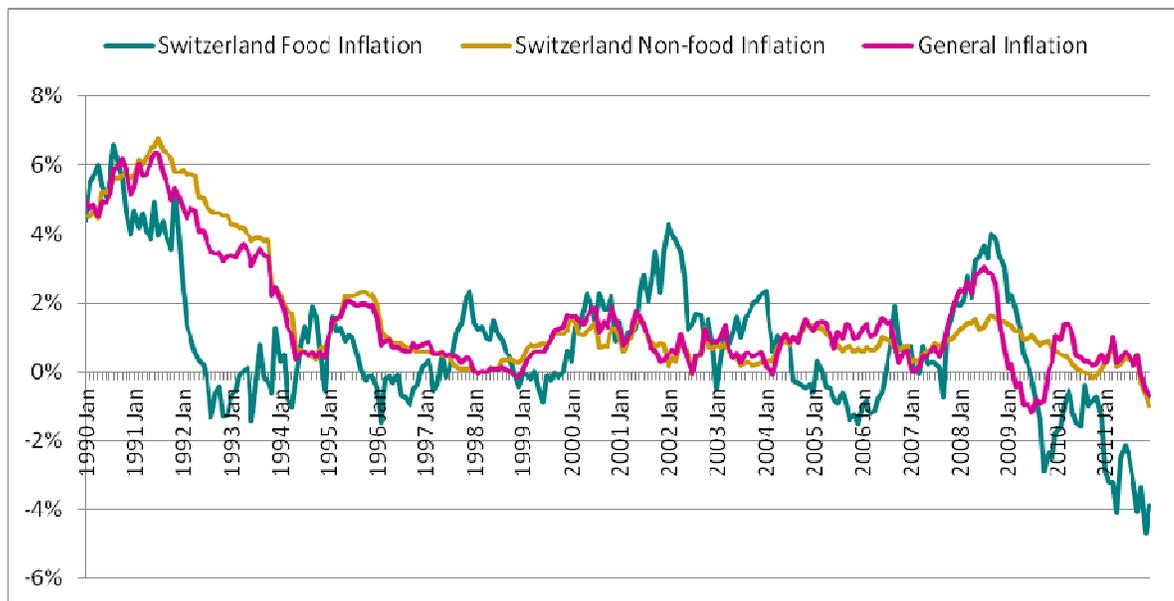
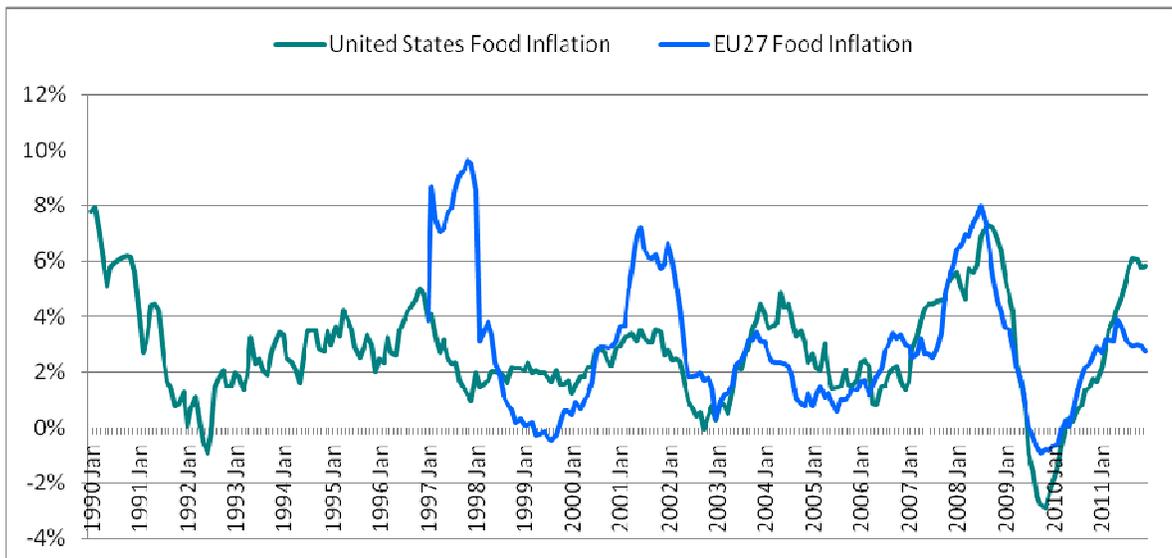## Food Inflation: Switzerland and EU-27
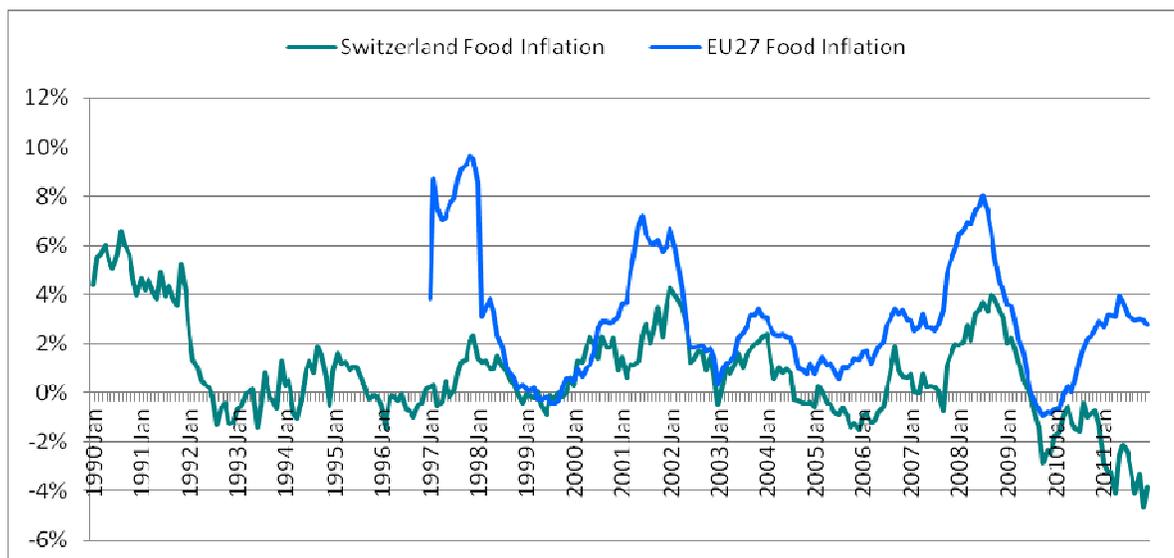
United States

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	2.95%	1.08%	1990 Jan - 1999 Dec	2.79%	1.62%	1990 Jan - 1999 Dec	3.16%	0.97%
2000 Jan - 2011 Dec	2.50%	1.34%	2000 Jan - 2011 Dec	2.67%	2.08%	2000 Jan - 2011 Dec	2.00%	0.53%
2007 Jan - 2011 Dec	2.19%	1.80%	2007 Jan - 2011 Dec	3.16%	2.90%	2007 Jan - 2011 Dec	1.77%	0.56%
1990 Jan - 2011 Dec	**2.71%**	**1.25%**	**1990 Jan - 2011 Dec**	**2.72%**	**1.89%**	**1990 Jan - 2011 Dec**	**2.53%**	**0.96%**

United States: General, Food and Non-Food Inflation, 1990-2011
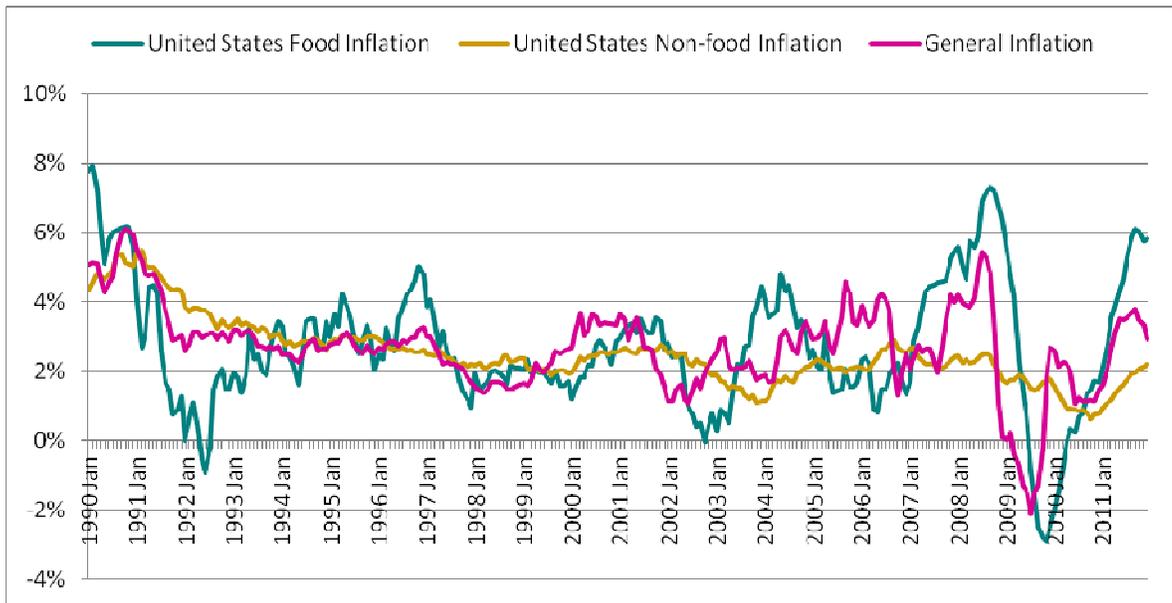
Food Inflation: United States and EU-27

Japan

General Inflation			Food Inflation			Non-food inflation		
Period	Mean	Std. Dev.	Period	Mean	Std. Dev.	Period	Mean	Std. Dev.
1990 Jan - 1999 Dec	1.20%	1.29%	1990 Jan - 1999 Dec	1.24%	2.69%	1990 Jan - 1999 Dec	1.31%	1.05%
2000 Jan - 2011 Dec	-0.30%	0.79%	2000 Jan - 2011 Dec	-0.12%	1.87%	2000 Jan - 2011 Dec	-0.51%	0.42%
2007 Jan - 2011 Dec	-0.19%	1.07%	2007 Jan - 2011 Dec	0.50%	1.80%	2007 Jan - 2011 Dec	-0.53%	0.56%
1990 Jan - 2011 Dec	**0.38%**	**1.28%**	**1990 Jan - 2011 Dec**	**0.50%**	**2.37%**	**1990 Jan - 2011 Dec**	**0.32%**	**1.19%**

Japan: General, Food and Non-Food Inflation, 1990-2011
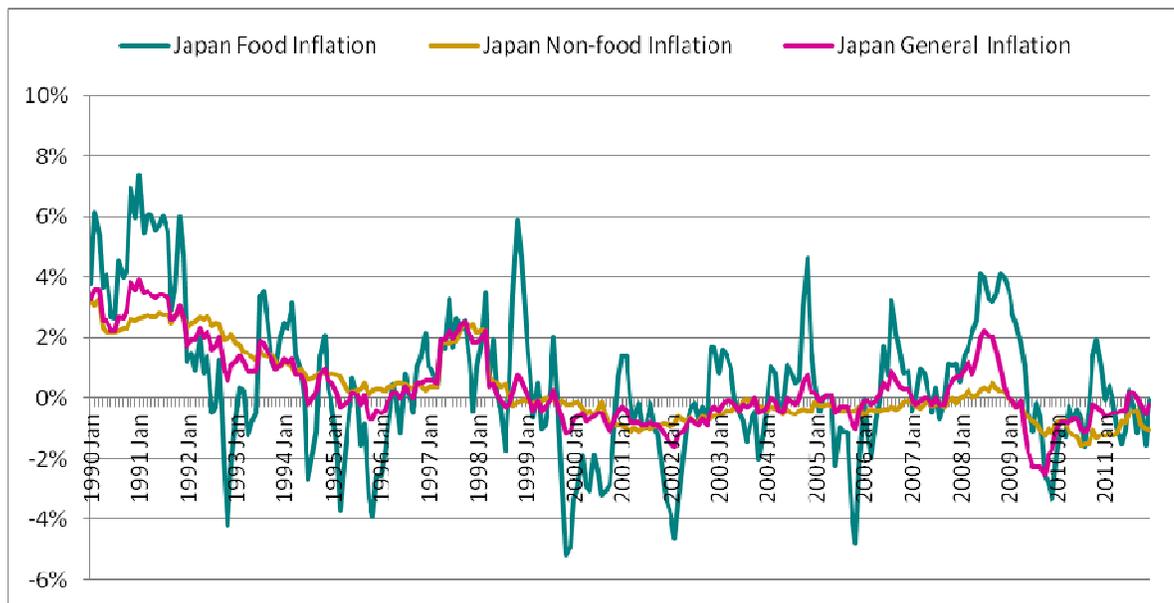
Food Inflation: Japan and EU-27