Fiscal policy, public debt management and government bond markets: issues for central banks

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Abstract

The global financial crisis showed that both authorities and markets failed to properly assess the size and the evolution of the public debt stock in various economies. In some countries the monetary authorities focused excessively on inflation, without taking into account other key macroeconomic variables and ratios. That said, it is important to ask why some macroeconomic variables were able to follow such unsustainable paths for lengthy periods. Part of the explanation is the scenario of strong growth, with high international liquidity and low inflation, that prevailed before the crisis. In addition, EU countries, especially the less-developed ones, were able to reduce their financing costs after the introduction of the euro.

In this paper, we also examine the role played by economic authorities, and the inter-relationships among them in the design and implementation of fiscal policy and debt management in response to the crisis. Rigid central bank goals and inflexible boundaries between the central bank and the treasury were erased, allowing the economic authorities to behave in a pragmatic way. Finally, we discuss the role played by credit rating agencies and regulatory frameworks.

Keywords: Monetary policy, public debt

JEL classification: E42, E52, E63

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1. Introduction

The current global financial crisis has made it clear that economic authorities and markets in various countries have not properly considered the effects that the size and evolution of the stock of public debt and the government primary surplus can trigger. And some authorities have focused their assessment view of the economy exclusively on inflation.

In this sense, it is important to analyze the reasons that could explain why some macroeconomic variables were able to follow unsustainable medium- and long-term paths for a long period. At the same time, it is also important to see the role played by economic authorities, central banks among them, and their institutional arrangements for the design and implementation of fiscal and monetary policy and debt management.

2. Some macroeconomic thoughts

Following the crisis of the late nineties that mainly affected Southeast Asian countries, Russia and other emerging economies (EMEs), economic authorities began to implement policies basically aimed at reducing their dependence on foreign capital and promoting fiscal robustness. At the same time, EU countries, especially the ones with a relatively lower degree of development, were benefited financially by the introduction of the euro as a common currency in early 1999. This allowed those countries to effectively reduce their costs of indebtedness.

In both cases, those changes took place within a framework characterized by ample international financial liquidity, which in domestic financial markets was reflected in a high growth rate of monetary aggregates and increases in asset values. Usually the consequences of the latter were underestimated due to the importance given, in implementing monetary policies, to domestic inflation indicators that do not incorporate asset prices.[2]

On the other hand, it is important to stress that in the last 30 years the world economy has experienced structural changes. Some of these have had deep consequences for the role played by different variables over the inflationary process, such as the robust growth of international trade, with the growing importance of low-cost manufactured products provided by EMEs and the continuous decrease in tariff trade barriers that on average went down from 26% in 1986 to 8.8% in 2007. As a result, the world experienced a period of strong real growth combined with low levels of inflation.[3]

In this regard, many economies had controlled domestic inflation while other macroeconomic variables, such as debt ratios as a percentage of GDP, current account or fiscal deficits (or both), showed disruptive trajectories. This evolution has not affected all economies to the same extent, as the restrictions they faced were not similar. In fact, countries or areas with currencies that are internationally accepted – used in trade or international reserves – enjoy higher degrees of freedom than economies that do not possess such currencies.

As shown in Table No. 1, comparing the average of 2008–11 with that of 1998–2007 it is clear that, while industrialized countries and EU members showed a rise in their levels of

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[2] In relation to this, Axel Leijonhufvud maintains that inflation targeting implies "a central banking doctrine that requires an exclusive concentration on keeping consumer prices within a narrow range with no attention to asset prices, exchange rates, credit quality or (of course) unemployment" ("Keynes and the crisis", *CEPR Policy Insight*, no. 23, May 2008). We would add to this list a lack of attention to fiscal deficits and public debt levels.

[3] M Pesce, "Monetary policy and measures of inflation", *BIS Papers*, no. 49, December 2009.

public debt relative to GDP (some of them a very sharp one), the EMEs had, in general, reduced this ratio. It can also be see in Table No. 2 that, for the first group of countries, with the exception of Japan, while the sum of the primary fiscal balance for 1998–2007 was positive, it became negative during 2008–11. In the case of the EMEs the evolution was in the same direction, although in the second period primary fiscal balances still were positive or showed small negative values. Combined with the figures on public debt interest presented in Table No.3, we can say that the fiscal stance in EU and other developed countries worsened, and was not much better in EMEs.

Several factors explain the evolution of macroeconomic variables, which obviously differs for each economy. It is clear that different public deficits and debt levels have different effects on medium- and long-term economic performance: debt and fiscal balance levels and their paths have impacts on the stability of the economic and financial systems.

From the data presented, it is possible to say that some economies showed primary fiscal results that were not enough to cope with rising debt levels and interest burdens. In this sense, some economies shifted from “speculative” to “Ponzi” situations as their fiscal primary balances were insufficient to cover the interest payments.

In this context, and as has been widely reported in recent months, credit rating agencies have played an important role in the evolution of the crisis. In Table 4 we can see the evolution of sovereign debt ratings assigned to a group of countries in the period December 2000–December 2011. For some countries, strong swings in sovereign ratings can be observed during very short periods. Though they had different macroeconomic frameworks, the positive assessments and ratings given to EU countries early in the process of introducing the common currency can also be noted. However, when comparing these countries’ fundamentals with those of some EMEs, it appears that the EMEs showed better and more sustainable indicators. Yet those healthier fundamentals were not reflected in EMEs’ credit ratings. Favorable sovereign bond ratings allowed banks in a number of financial systems to increase their assets without imposing pressures for increased capital integration or loan loss provisions. At the end of the day, it allowed pro-cyclical lending behavior to develop.

Table 1

Public Debt

percentage of GDP

Source	Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011 - 1998
FMI	United States	64.6	60.8	54.8	54.7	57.1	60.4	61.5	61.7	61.1	62.3	71.6	85.2	94.4	100.0	59.9
	Euro Zone	72.9	71.9	69.3	68.3	68.1	69.3	69.7	70.3	68.6	66.4	70.1	79.7	85.8	88.6	69.5
	Euro Zone (Excluding Germany)	78.1	76.7	73.2	72.0	71.0	71.1	70.9	70.8	68.7	66.8	71.3	81.7	86.4	90.7	71.9
	Germany	60.5	61.3	60.2	59.1	60.7	64.4	66.2	68.5	67.9	65.0	66.4	74.1	84.0	82.6	63.4
	Italy	114.9	113.7	109.2	108.8	105.7	104.4	103.9	105.9	106.6	103.6	106.3	116.1	119.0	121.1	107.7
	France	59.5	58.9	57.4	56.9	59.0	63.2	65.0	66.7	64.0	64.2	68.2	79.0	82.3	86.8	61.5
	Spain	64.1	62.4	59.3	55.5	52.6	48.7	46.2	43.0	39.6	36.1	39.8	53.3	60.1	67.4	50.7
	Portugal	50.4	49.6	48.5	51.2	53.8	55.9	57.6	62.8	63.9	68.3	71.6	83.0	92.9	106.0	56.2
	Greece	96.6	102.5	103.4	103.7	101.5	97.3	98.8	100.3	106.1	105.4	110.7	127.1	142.8	165.6	101.6
	Ireland	53.0	48.0	37.5	35.2	31.9	30.7	29.1	27.1	24.7	24.9	44.4	65.2	94.9	109.3	34.2
	United Kingdom	46.3	43.7	40.9	37.7	37.2	38.5	40.2	42.1	43.1	43.9	52.0	68.3	75.5	80.8	41.4
	Japan	120.1	133.8	142.1	151.7	160.9	167.2	178.1	191.6	191.3	187.7	195.0	216.3	220.0	233.1	162.4
	Brazil	43.8	55.5	66.7	70.2	79.8	74.7	70.6	69.1	66.7	65.2	63.6	68.1	66.8	65.0	66.2
	Chile	12.5	13.8	13.7	15.0	15.7	13.0	10.7	7.3	5.3	4.1	5.2	6.2	9.2	10.5	11.1
	Colombia	27.5	34.1	36.3	40.9	43.9	45.6	42.9	38.5	36.8	32.7	30.8	35.8	36.0	35.9	37.9
	Mexico	45.4	47.4	42.6	42.0	45.7	45.6	41.4	39.8	38.4	37.8	43.1	44.7	42.9	42.9	42.6
	Perú	34.4	47	42.4	41.5	43.2	47.1	44.3	37.7	33.2	30.9	25.0	27.1	24.5	21.5	40.2
	Russia	69.9	99	59.9	47.6	40.3	30.4	22.3	14.2	9.0	8.5	7.9	11.0	11.7	11.7	40.1
	Turkey	44.8	51	51.3	77.6	73.7	67.4	59.2	52.3	46.1	39.4	39.5	46.1	42.2	40.3	56.3
	China	11.4	13.8	16.4	17.7	18.9	19.2	18.5	17.6	16.2	19.6	17.0	17.7	33.8	26.9	16.9
	India	65.8	68.0	71.8	76.2	80.6	81.7	81.0	78.7	75.4	72.7	73.1	69.4	64.1	62.4	75.2

Source: IMF, IFS

Table 2

Public Debt

percentage of GDP

Source	Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Sum Period	Annual Average
FMI	United States	3.4	3.4	3.9	2.0	-1.8	-2.9	-2.5	-1.2	-0.1	-0.7	-4.5	-10.9	-8.4	-8.0	3.6	-31.7
	Euro Zone	1.9	2.3	3.5	1.5	0.6	-0.1	-0.1	0.2	1.2	1.9	0.6	-3.8	-3.6	-1.5	12.8	-8.3
	Euro Zone (Excluding Germany)	2.4	2.7	3.2	2.2	1.2	0.5	0.4	0.6	1.4	1.6	-0.1	-4.9	-4.4	-2.2	16.3	-11.6
	Germany	0.8	1.3	4.0	-0.3	-1.2	-1.5	-1.3	-1.0	0.8	2.7	2.5	-0.8	-1.2	0.4	4.3	0.9
	Italy	4.7	4.6	5.2	2.9	2.4	1.4	1.1	0.1	1.1	3.3	2.2	-1.0	-0.3	0.5	26.9	1.5
	France	0.4	0.9	1.1	1.1	-0.6	-1.5	-1.0	-0.5	0.0	-0.3	-0.6	-5.3	-4.9	-3.4	-0.3	-14.3
	Spain	0.7	1.9	2.0	2.1	2.0	1.9	1.5	2.5	3.3	3.0	-3.1	-9.9	-7.8	-4.4	20.9	-25.2
	Portugal	0.9	1.7	1.3	0.0	1.5	2.3	2.1	-0.3	2.2	-0.4	-0.7	-7.4	-6.3	-1.9	11.4	-16.2
	Greece	4.6	4.5	3.6	2.1	0.8	-0.7	-2.5	-0.7	-1.5	-2.0	-4.8	-10.3	-4.9	-1.3	8.2	-21.4
	Ireland	5.6	4.9	6.6	2.3	0.8	1.5	2.4	2.7	3.9	0.8	-6.5	-12.4	-28.9	-6.8	31.4	-54.5
	United Kingdom	2.3	2.9	3.2	2.1	-0.6	-1.9	-1.9	-1.8	-1.1	-1.1	-3.3	-8.5	-7.7	-5.6	2.2	-25.1
	Japan	-4.3	-6.1	-6.3	-5.0	-6.8	-6.8	-5.1	-4.1	-3.5	-1.9	-3.4	-9.4	-8.1	-8.9	-49.9	-29.7
JP Morgan	Brazil	0.0	2.9	3.2	3.4	3.2	3.3	3.8	3.9	3.2	3.4	3.5	2.1	3.3	3.3	30.3	12.2
	Chile	-0.5	-0.6	0.2	0.6	-0.8	0.2	3.8	6.1	8.8	9.4	6.1	-3.8	-0.9	-0.2	27.2	1.2
	Colombia	0.8	-0.3	0.3	0.6	0.8	1.8	3.3	2.9	3.5	3.4	3.6	1.0	-0.4	0.2	17.1	4.4
	Mexico	1.6	2.3	2.4	2.3	1.6	1.9	2.2	2.2	2.5	2.2	1.8	-0.1	1.3	1.4	21.2	4.4
	Peru	1.2	-0.9	-0.8	-0.2	-0.1	0.4	1.0	1.6	4.0	4.9	3.7	-0.6	0.2	0.7	11.1	4.0
	Russia	-0.6	2.3	4.9	5.6	3.5	3.4	5.5	8.4	8.0	5.8	4.5	-5.4	-3.4	-2.2	46.8	-6.5
	Turkey	4.5	2.0	4.4	5.2	3.3	4.0	4.9	6.0	5.4	4.1	3.5	0.1	0.7	1.0	43.8	5.3
	China	-1.1	-1.9	-2.5	-2.3	-2.6	-2.2	-1.3	-1.2	-0.8	0.6	-0.4	-2.3	-2.7	-1.8	-15.3	-7.2
	India	-3.5	-0.1	0.4	-1.5	-1.5	-2.9	-1.3	-0.6	0.5	0.5	-2.4	-4.7	-2.8	-1.9	-10.0	-11.8

Source: IFS, IMF and EM Debt and fiscal indicators JPM.

Table 3

Interest on Public Debt

percentage of GDP

Source	Country	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
OECD	United States	3.1	2.7	2.5	2.2	2.0	1.8	1.8	1.8	1.8	1.9	1.9	1.6	1.7	2.0
	Euro Zone	4.2	3.7	3.5	3.3	3.1	2.9	2.8	2.7	2.6	2.6	2.6	2.5	2.4	2.6
	Euro Zone (Excluding Germany)	4.7	4.0	3.8	3.6	3.4	3.1	2.9	2.8	2.6	2.7	2.7	2.5	2.6	2.8
	Germany	3.0	2.8	2.7	2.6	2.5	2.6	2.5	2.5	2.5	2.5	2.4	2.3	2.1	2.0
	Italy	7.8	6.3	6.1	6.0	5.4	4.9	4.6	4.5	4.4	4.7	4.9	4.3	4.2	4.5
	France	3.0	2.7	2.6	2.7	2.7	2.6	2.6	2.5	2.4	2.5	2.7	2.2	2.3	2.4
	Spain	3.8	3.3	2.9	2.6	2.4	2.1	1.8	1.6	1.3	1.1	1.1	1.4	1.5	1.5
	Portugal	3.1	2.9	2.9	2.9	2.8	2.7	2.6	2.4	2.7	3.0	3.1	2.9	3.0	4.2
	Greece	7.3	6.4	6.6	5.9	5.2	4.7	4.6	4.4	4.5	4.5	4.8	5.0	5.7	6.9
	Ireland	3.2	2.2	1.8	1.2	1.1	1.1	1.0	0.9	0.7	0.6	0.8	1.4	2.7	3.2
	United Kingdom	3.0	2.5	2.4	2.0	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.6	2.6	2.6
	Japan	1.5	1.5	1.5	1.4	1.4	1.3	1.2	0.8	0.6	0.6	0.9	1.1	1.4	1.6
JP Morgan	Brazil	7.9	8.2	6.6	6.7	7.6	8.4	6.6	7.3	6.7	6.1	5.4	5.4	5.5	6.0
	Chile	-0.9	1.5	0.9	1.1	0.4	0.6	1.7	1.4	1.1	0.6	0.8	0.8	0.6	0.6
	Colombia	4.1	3.3	4.0	4.4	3.9	4.1	3.8	3.3	3.9	3.8	3.1	3.2	3.2	3.2
	Mexico	2.7	3.3	3.4	3.0	2.7	2.5	2.4	2.3	2.4	2.2	1.9	2.2	3.9	3.9
	Peru	2.2	2.3	2.5	2.3	2.2	2.1	2.0	1.9	1.9	1.8	1.6	1.4	1.2	1.2
	Russia	5.7	3.4	3.5	2.6	2.1	1.7	1.2	0.9	0.6	0.4	0.4	0.5	0.6	0.8
	Turkey	11.8	13.8	12.3	17.1	17.5	12.8	10.1	7.1	6.0	5.7	5.2	5.6	4.3	3.6
	China														
	India	5.8	8.5	8.7	9.2	8.5	6.5	5.9	6.3	6.8	5.2	7.3	5.4	5.2	5.3

Source: IFS, IMF and EM Debt and fiscal indicators JPM. Own calculation based on Primary surplus and Fiscal Surplus.

Table 4

Long term Sovereigns Ratings S&P

Country	Dec.00	Dec.01	Dec.02	Dec.03	Dec.04	Dec.05	Dec.06	Dec.07	Dec.08	Dec.09	Dec.10	Dec.11
United States	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
Germany	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
France	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Spain	AA+	AA+	AA+	AA+	AAA	AAA	AAA	AAA	AAA	AA+	AA	AA-
Italy	AA-	AA-	AA-	AA-	AA-	A+	A+	A+	A+	A+	A+	A
Greece	A	A	A+	A+	A	A	A	A	A	BBB+	BB+	CC
Ireland	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA	A	BBB+
Portugal	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	A-	A-	BBB-
India	BB+	BB+	BB+	BB+	BB+	BB+	BB+	BBB-	BBB-	BBB-	BBB-	BBB-
Turkey	B+	B-	B-	B+	B+	BB-	BB-	BB-	BB-	BB-	BB	BB
Russia	B-	B	B+	BB+	BB+	BBB	BBB+	BBB+	BBB	BBB	BBB	BBB
China	BBB	BBB	BBB	BBB	BBB+	A-	A	A	A+	A+	AA-	AA-
Brazil	B+	BB-	B+	B+	BB-	BB-	BB	BB+	BBB-	BBB-	BBB-	BBB
Mexico	BB+	BB+	BBB-	BBB-	BBB-	BBB	BBB	BBB+	BBB+	BBB	BBB	BBB

Source: S&P

Table 5

Government Securities - BCRA's Own Portfolio - Total as of

	Balances in Argentine Pesos	Balances in US Dollars	Exchange Rate USD/$
	(in thousands)		
12/31/2007	4,798,811	1,522,949	3.1510
12/31/2008	6,216,129	1,799,846	3.4537
12/31/2009	14,242,300	3,751,231	3.7967
12/31/2010	20,167,413	5,072,542	3.9758
12/31/2011 (1)	16,519,320	3,838,846	4.3032

Source: BCRA

(1) subject to adjustments

Securities issued by the BCRA - LEBAC and NOBAC – Total as of

Outstanding Stock as of	Total	Domestic Holders	Foreign Holders
	(in Nominal Value)		
12/31/2007	51,497	44,131	7,366
12/31/2008	36,698	35,799	899
12/31/2009	46,828	46,823	5
12/31/2010	74,352	74,307	45
12/31/2011	68,725	68,725	0

Source: BCRA

Table 6

Financial Systems Total Assets

In millions of USD

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	-	-	-	9,521	10,004	10,598	11,442	12,591	13,986	15,649	17,335	16,880	16,817
Euro Zone	15,457	14,246	14,266	14,719	18,219	23,098	26,872	25,338	31,043	39,105	39,174	40,312	37,090
United Kingdom (*)	3,625	3,645	3,988	4,212	4,933	5,991	7,343	7,608	9,660	12,179	10,194	10,537	10,518
Japan	-	-	-	9,608	10,331	11,535	11,847	10,663	10,207	10,606	13,734	13,429	15,574
Brazil	-	-	-	462	341	476	579	788	1,037	1,578	1,394	2,094	2,593
Chile	-	-	-	58	56	68	84	104	116	152	143	182	201
Colombia	-	-	-	37	29	33	46	56	67	89	92	107	126
Mexico	-	-	-	330	326	312	321	365	414	467	405	444	518
Peru	21	20	20	21	20	20	22	26	28	41	50	53	66
Russia	-	-	86	103	122	174	241	297	476	736	885	895	1,014
Turkey	-	-	-	92	118	162	208	278	323	451	435	514	591
China	1,396	1,552	1,738	1,947	2,399	2,858	3,261	3,692	4,426	5,724	7,093	8,945	11,181
India	151	180	201	222	274	333	424	478	587	801	790	952	1,194

Source: own elaboration based on IFS/IMF.

Table 7

Financial Sector Exposure to public sector (*)

In millions of USD

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	-	-	-	643	696	639	604	623	664	872	1,283	1,138	1,147
Euro Zone	2,274	1,952	1,695	1,681	2,051	2,608	2,893	2,660	2,753	3,171	3,081	3,601	3,650
United Kingdom (*)	24	18	-8	1	20	11	28	25	-6	-19	-20	42	129
Japan	-	-	-	1,581	1,865	2,471	2,677	2,439	2,469	2,527	3,459	3,854	4,702
Brazil	-	-	-	196	135	221	275	379	462	594	458	704	812
Chile	-	-	-	1	1	1	1	1	1	2	2	3	4
Colombia	-	-	-	10	5	9	13	16	13	13	13	20	23
Mexico	-	-	-	101	92	89	95	101	121	142	127	161	174
Peru	1	2	1	2	2	2	2	2	2	2	2	3	2
Russia	-	-	22	22	26	30	34	30	38	47	40	55	74
Turkey	-	-	-	44	57	81	94	118	115	149	133	182	188
China	60	73	89	133	164	184	223	246	291	397	442	557	657
India	53	51	48	46	47	49	51	50	51	57	46	48	50

(*) Public sector net assets of the own jurisdiction

Source: own elaboration based on IFS/IMF.

Table 8

Financial Sector Exposure to public sector (*)

In % of total assets

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	-	-	-	6.8	7.0	6.0	5.3	4.9	4.7	5.6	7.4	6.7	6.8
Euro Zone	14.7	13.7	11.9	11.4	11.3	11.3	10.8	10.5	8.9	8.1	7.9	8.9	9.8
United Kingdom (*)	0.7	0.5	-0.2	0.0	0.4	0.2	0.4	0.3	-0.1	-0.2	-0.2	0.4	1.2
Japan	-	-	-	16.5	18.0	21.4	22.6	22.9	24.2	23.8	25.2	28.7	30.2
Brazil	-	-	-	42.3	39.5	46.3	47.6	48.0	44.6	37.6	32.9	33.6	31.3
Chile	-	-	-	1.5	1.4	1.2	1.2	1.3	0.9	1.2	1.4	1.9	1.9
Colombia	-	-	-	27.9	18.1	27.0	27.9	28.8	18.9	15.0	14.0	18.9	18.5
Mexico	-	-	-	30.6	28.0	28.6	29.5	27.6	29.1	30.4	31.4	36.3	33.6
Peru	5.9	7.4	7.4	9.7	10.0	10.0	8.9	7.5	5.5	4.1	3.1	4.9	3.8
Russia	-	-	25.4	21.7	21.2	17.4	13.9	10.1	8.0	6.4	4.6	6.2	7.3
Turkey	-	-	-	48.0	48.1	49.6	45.1	42.5	35.5	33.1	30.6	35.4	31.8
China	4.3	4.7	5.1	6.9	6.8	6.4	6.9	6.7	6.6	6.9	6.2	6.2	5.9
India	34.8	28.6	23.8	20.9	17.0	14.7	12.1	10.4	8.6	7.1	5.8	5.0	4.2

(*) Public sector net assets of the own jurisdiction

Source: own elaboration based on IFS/IMF.

It thus seems clear that it might be misleading to pay attention only to sovereign debt ratings when assessing sovereign credit risks. That variable gives insufficient information on its own and should be complemented with more attention to ratios such as fiscal primary balance/GDP, financial balance/GDP and debt service/GDP and their evolution.

With the benefit of hindsight, we know that in the period before the first phase of the international financial crisis in 2007, many central banks implemented policies that were not able to prevent the effects of a reversal of the cycle, and, in some cases, these policies amplified the inconsistent trajectories of some key variables and ratios. When the crisis broke out, they deployed a set of policies to try to support liquidity conditions in the financial systems and stabilize the market value of sovereign debt. In addition, some central banks modified their regulatory framework regarding the valuation of assets, including sovereign debt. All those goals were achieved through the implementation of unconventional monetary policy measures that included special programs granting credit lines, swaps and the extension of collateral, together with very active participation in secondary markets. In this sense, we can say that central banks played two roles simultaneously. On the one hand, they maintained, and in some cases recovered, their role of lender of last resort in financial systems. On the other hand, when most investors carried out strong sales of government bonds, they became lenders of last resort for some countries by buying public debt in secondary markets. In addition, some central banks transferred profits to treasuries which in many cases were originated in its purchases of sovereign securities in secondary markets.[4]

In the case of Argentina, starting in 2008 the central bank increased its open market operations by purchasing different government securities in the secondary market (see Table No. 5). This mechanism worked as an additional tool to provide liquidity beyond the banking sector, and at the same time enabled intervention in different segments of the yield curve, preventing market distortions. The central bank also authorized a new liquidity window that enables financial institutions to obtain funds with different sovereign bonds and assets. It has also decided that these securities can be used as collateral for inter-bank loans at a minimum seven-day term. This allowed a number of institutions that did not have central bank bills and notes – Lebac and Nobac – in their portfolios to access our liquidity provision mechanisms, by using treasury bonds as collaterals.

3. Aspects of the regulatory framework in relation to sovereign debt

3.1 Some features of the financial system regulatory framework may also explain the evolution of the crisis mentioned above. Prior to 2007, in a context of abundant international liquidity, the regulatory framework included favorable incentives, in terms of capital integration, for the voluntarily maintenance of sovereign debt as part of the assets of financial institutions. Table No. 6 shows the strong growth of total assets in financial systems. That rise clearly understates the increase in sovereign bond holdings shown in Tables No. 7 and No. 8. These tables show the significant growth in the period 2002–10 of financial systems' exposure to the public sector.

As I said before, it is important to remember that in the context of Basel II there were incentives for holding government securities in bank assets.

[4] For instance, "The Federal Reserve in recent years has transferred net income to the US Treasury, by preliminary unaudited results … the increase was primarily due to increased earnings on securities holdings during 2009" (Federal Reserve, press release, January 12, 2010).

In the case of the capital requirement for credit risk under the standardized method,[5] even when it incorporates different risk weights for loans to sovereign states and their central banks (Paragraph 53), in Paragraph 54 introduces a degree of discretion for national regulators to apply lower weights to those assets – even zero for cases in which they are denominated and financed in the domestic currency. Some countries implemented such regulations in this way.[6]

As I mentioned, under the Basel II standardized approach, the calculation of credit in risk requirements mechanically rests on the ratings issued by credit rating agencies or export credit agencies. In the case of sovereign debt in particular, recent international experience shows that rating agencies have not been effective in pointing out, well in advance, credit risks that arise from economic or fiscal weaknesses (their failure in the subprime crisis has also been evident). This fact, coupled with favorable treatment – i.e. lower weighting of sovereign risk exposures given to domestic currency expressed in euros – resulted in low capital requirements to cover these exposures, while at the same time, it may have also acted as an incentive to increase sovereign debt exposures.

In the case of Argentina, during the nineties there was favorable regulatory banking treatment for public sector asset holdings. Until March 2000, both domestic holdings of government securities and public sector loans did not face, in practice, minimum capital requirements for credit risk. After March 2000, public sector asset holdings have been subject to minimum capital requirements in terms of their modified duration, although lower than those of the private sector assets.

Since 2003, capital requirements for credit risk – exposure to the public sector – have been similar to those for non-financial exposure to the private sector, 8% of the capital compliance. In addition, the central bank established two limits for assistance to the non-financial public sector:

1. *Regarding their total assets, a maximum of 40% (reduced to 35% in 2007)*

2. Regarding their regulatory capital, 50% (for national bodies), 10% (for provinces) and 3% (for municipalities), with the three levels in combination amounting to no more than 75% of the regulatory capital.

3.2 Another macroprudential instrument implemented to deal with the dollarization and currency mismatch that may affect financial stability was the decision to issue Lebacs and Nobacs (Com. A 4715, September 2007) which can only be traded locally (known as domestic Lebacs and Nobacs). This measure sought to prevent short-term foreign investors from acquiring these securities, which tended to distort their value in the secondary market, affecting their function as a source of liquidity.

The issue of domestic Lebacs and Nobacs had more than one aim: the one mentioned above, as well as to indirectly help deal with the mixed blessing of short-term capital

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[5] Basel Committee on Banking Supervision, *International convergence of capital measurements and capital standards* (Basel II), Part 2, section II: "Credit risk approach: the standardised approach", paragraphs 53 and 54 says "Credit Risk weight A. Exposures to central governments and central banks. 1. The exposures to the Central Government, the Bank of Spain and other central governments and central banks of other countries of the UE, denominated and funded in the local currency of the Member State concerned, as well as against the European Central Bank, shall be weighted at 0%" (own translation).

[6] For example, in the case of Spain's interpretation of Basel II, Circular 3/2008 of the Bank of Spain says: "Credit Risk weight A. Exposures to central governments and central banks. 1.The exposures to the Central Government, the Bank of Spain and other central governments and central banks of other countries of the EU, denominated and funded in the local currency of the Member State concerned, as well as against the European Central Bank, shall be weighted at 0%" (own translation)..

inflows. In this sense, there is consensus that when capital flows take the form of short-term financial capital they are mostly driven by international investors' appetite for risk and international liquidity conditions, and tend to lead to currency appreciation, asset price bubbles, and indebtedness levels that are not compatible with the receiving countries' productive capacity. These kinds of effects are more important in small open economies with limited banking and capital markets.

When capital flows turn – sudden stops – employment and activity levels are severely damaged, and serious financial crises could break out.[7]

In order to partially avoid the side effects of short-term capital inflows on monetary equilibrium, the Argentine central bank carried out sterilized operations in the FX market. Domestic Lebacs and Nobacs play a key role in this process. Moreover, those instruments' "domestic" characteristic helps prevent a problem like the one that recently affected the Bank of Israel, where the debt instruments that the central bank was using to sterilize were heavily demanded by foreign investors, producing, at the end of the day, a negative feedback loop.

Regarding securities valuation, the Argentine central bank established that the sovereign bonds launched in the debt swap of 2005 could be recorded by banks as: (1) the book value of net-delivered instrument regularization, or (2) the value of the sum of nominal cash flow until the final maturity of the bonds. The analysis was based on US accountancy rules (FASB 15), which allow financial institutions to register government securities in order not to incur accounting losses. Accounting for government securities at technical and non-market value has the advantage of removing volatility in banks' income statements, helping reduce financial market panic at times of crisis (Com A 5180, April 2011).

4. Institutional arrangements: interaction between central banks and Treasuries during periods of crisis

In this section we discuss institutional arrangements during the crisis between national Treasuries and central banks, focusing on the role of the latter. This is important, as was already pointed out, considering that public debt paths have a direct impact on monetary and financial stability conditions that ultimately must be addressed by the monetary authorities.

One of the usual analyses focuses on the formal objectives, the mandate established in central banks' charters. While some of them have price stability as their main goal, for example the ECB ("the primary objective ... shall be price stability") and the Bank of England, in others this objective is complemented with other aspects of the economy, as in the case of the Bank of Canada, the Bank of Japan[8] or even the Federal Reserve.

As regards central bank independence in formulating and implementing monetary and financial policies, formal frameworks can differ. On the one side, there are banks that have significant autonomy to implement monetary policy and in relation to other authorities such as those in charge of fiscal policy and the executive or legislative branches. They have to

[7] Read more about this in the Box in BCRA, *Recent measures taken by Central Banks from emerging economies in view of capital inflow,* Inflation Report, Second Quarter 2011, www.bcra.gov.ar.

[8] "Article 4. (Relationship with the Government): The Bank of Japan shall, taking into account the fact that currency and monetary control is a component of the overall economic policy, always maintain close contact with the government and frequently exchange views, so that its currency and monetary control and the basic stance of the government's economic policy shall be mutually compatible."

communicate decisions and to report them, at least formally, only at a given frequency. This is the case of the ECB[9] or the Bank of England.

In the case of the ECB, in accordance with paragraph 3 of Article 284 of the Treaty on the Functioning of the European Union, it must submit annually to the Parliament, the Council, the Commission and the European Council a report on the activities of the ESCB (European System of Central Banks) and the development of monetary policy in the previous and the current year. Also, ECB authorities, usually the President, attend quarterly hearings at the European Parliament (Committee on Economic and Monetary Affairs). In some cases, other members of the Executive Committee may also be asked to attend to these hearings.

Furthermore, once a year, following its practices and customs, the ECB presents to the Members of Parliament the previous year's Annual Report. Until 2009 the report was presented to the Committee on Economic and Monetary Affairs. Since 2010 the Annual Report has been presented by the ECB President to the plenary of the European Parliament. The ECB President also gives speeches on different economic issues, including fiscal policies.[10]

Moreover, some central banks have in their legal frameworks special provisions for their interaction with the Treasuries and have more formal links with legislative bodies. This group includes the Federal Reserve and the Bank of Japan.[11] For instance, the BoJ authorities, usually the President, attend twice-yearly hearings in the Japanese parliament, in both the House of Representatives and the House of Councilors, before the Committee on Finance.

In addition, during the crisis, some regulations were modified in order to clarify the legal relationship between government agencies, as was the case of the Federal Reserve and the US Treasury regarding unconventional monetary policies.[12]

These examples show that some central banks departed informally and to a certain extent from their institutional arrangements, following an eclectic strategy to foster economic activity and employment.

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9 "Article 7. Independence. As set out in Article 130 of the Treaty on the Functioning of the European Union, when exercising the powers conferred by the Treaties and this Statute and carrying out the functions and duties, neither the ECB nor the national central banks or any member of its governing bodies shall seek or take instructions from union institutions, bodies or agencies, from any government of a Member State or from any other body. The institutions, bodies or agencies of the Union and the Governments of the Member States undertake to respect this principle and not seek to influence members of the governing bodies of the ECB or national central banks in the exercise of their functions."

10 As an example, on December 8, 2011, Mario Draghi stated: "Turning to fiscal policies, all euro area governments urgently need to do their utmost to support fiscal sustainability in the euro area as a whole. A new fiscal compact, comprising a fundamental restatement of the fiscal rules together with the fiscal commitments that euro area governments have made, is the most important precondition for restoring the normal functioning of financial markets. Policy-makers need to correct excessive deficits and move to balanced budgets in the coming years by specifying and implementing the necessary adjustment measures. This will support public confidence in the soundness of policy actions and thus strengthen overall economic sentiment … To accompany fiscal consolidation, the Governing Council has repeatedly called for bold and ambitious structural reforms. Hand in hand, fiscal consolidation and structural reforms would strengthen confidence, growth prospects and job creation. Key reforms should be immediately carried out to help the euro area countries improve competitiveness, increase the flexibility of their economies and enhance their longer-term growth potential. Labour market reforms should focus on removing rigidities and enhancing wage flexibility. Product market reforms should focus on fully opening up markets to increased competition" (extracted from M. Draghi and V. Constâncio, introductory statement to the press conference of 8 December 2011, Frankfurt).

11 Board of Governors of the Federal Reserve System, Federal Reserve Act, Section 10.

12 Board of Governors of the Federal Reserve System, Federal Reserve Act, Section 13.

As mentioned before, taking into account recent experiences, in Argentina the central bank's charter was modified by Congress this year. It changed the unique goal of preserving the value of the currency to a multiple mandate which provides that (Article 3), under policies set by national authorities, its aims are to promote monetary stability, financial stability, and economic development with social equity. Financial stability and monetary stability were added, which are goals that many countries have explicitly incorporated after the devastating effects of the financial crisis.

Through the changes introduced, the central bank can regulate credit conditions regarding terms, interest rates, commissions, and other charges, as well as guide the granting of credit through reserve requirements, differential reserves, and other appropriate means.

The central bank continues to enjoy autarky and is not subject to orders or instructions of the executive branch, although it aims for greater coordination with other government policies.

The Charter also establishes that the Bank shall perform, among others, the following duties, some of them relating to its relationship with the rest of the government. Article 4 provides that the central bank shall:

c) act as a financial agent for the Nation, and as depository and agent for the country before international monetary, banking and financial entities, of which the Nation is a member

f) implement an exchange policy in accordance with such legislation as the National Congress may lay out

h) provide for the protection of the rights of users of financial services and competition

According to Article 10, the BCRA's president shall:

I) submit an annual report on the BCRA's transactions to the National Congress for consideration. In addition, the president shall attend public and joint sessions of the Budget and Treasury Committees of both Chambers, the Economy Committee of the Senate, and the Finance Committee of the House of Representatives at least once during the general term or whenever any of these Committees may ask him to attend for reporting on the scope of the monetary, exchange and financial policies under way.

Articles 12, 26, and 29 relate to the relationship between the central bank and the Economy Ministry. They provide that the Economy Ministry shall participate on the central bank Board with voice but without vote, that the Bank shall inform the Economy Ministry on monetary, financial, exchange, and credit regimes, and that the Bank shall advise the Ministry and Congress on the exchange system, and establish the relevant general regulations.

5. Final comments

It seems to be clear that in different countries, economic authorities and markets have not properly considered the size and evolution of the stock of public debt and the government primary surplus required to have a sustainable path. Moreover, in some countries the monetary authorities focused their economic assessment excessively on inflation. Under that approach, it seems that there was some disregard of key macroeconomic variables and ratios.

In this paper we have analyzed the reasons that could explain why some macroeconomic variables were able to follow unsustainable medium- and long-term trends for a long period. We also examined the role played by economic authorities, and the inter-relationships among them in the design and implementation of fiscal policy and debt management.

In this sense, the crisis that took place during 2008–11 shook the paradigm that ruled macroeconomic theory, and specifically monetary policy, in a way that has not been observed since the Great Depression. Consequently, rigid central bank goals and inflexible boundaries between the central bank and the Treasury were erased, letting economic authorities behave in a pragmatic way.

In the paper we also discussed the role played by credit rating agencies and regulatory frameworks. The former showed pro-cyclical behavior, producing strong swings in ratings well after the crisis erupted. With regard to the latter, in a context of broad liquidity, regulatory frameworks included favorable incentives, in terms of lower capital integration, for the maintenance of sovereign debt as an important part of assets in some financial systems.