



## US TREASURY SECURITIES MARKET: RECENT EVOLUTIONS, SHORT AND MEDIUM TERM PROSPECTS

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### Rezumat

Prezenta lucrare aduce în prim-plan evoluțiile recente înregistrate pe piața titlurilor de stat americane (TSA), sub impactul crizei financiare și economice globale și perspectivele acestei piețe pe termen scurt și mediu. Studiul are la bază datele statistice ale Trezoreriei SUA și evidențele empirice din literatura de specialitate și este alcătuit din patru secțiuni. *Prima* reliefează tendințele recente la nivelul structurii TSA, explicând și factorii care au contribuit la aceste evoluții. *A doua secțiune* evidențiază, pe de o parte, principalii investitori internaționali în TSA și comportamentul acestora, iar pe de altă parte, atrage atenția asupra faptului că datele oficiale trebuie privite cu circumspecție, deoarece nu reflectă neapărat o realitate obiectivă. *A treia secțiune* analizează evoluția pantei curbei randamentelor TST și factorii determinanți, iar *a patra* conturează perspectivele pe termen scurt și mediu ale pieței TSA, ținând cont de influența relansării economiei mondiale și a adâncirii deficitului bugetar american asupra comportamentului investitorilor și, implicit, asupra randamentelor TSA.

### Abstract

The present paper brings to the forefront the recent evolutions on the US treasury securities market, under the impact of the global financial and economic crisis and its short and medium term perspectives. The study is based on the US Treasury statistics and the empiric evidence of the previous literature, and is structured in four sections. *The first one* underlines the evolution of the structure of

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the American treasury securities market, explaining at the same time the factors that generated such developments. *The second section* underscores, on the one side, the main foreign investors in marketable securities and their behaviour, and on the other side, points to the fact that the official data should be interpreted cautiously, as they do not necessarily reflect an objective reality. *The third section* analyses the slope of the treasury yield curve in time and its determinants, while the *fourth* outlines the short and medium term perspectives of the US treasury securities market, taking into account the influence of the global recovery and the deepening of the American fiscal deficit on the investors' behaviour and, consequently, on the treasury yields.

**Keywords:** US treasury securities, marketable securities, foreign investors, treasury yield curve

**JEL classification:** E44, G11, G12, H60, O51.

### **1. Recent trends of the structure of the US treasury securities (USTS)**

According to the official statistics, the US public debt amounted on December 31, 2009 to 12,311 billion US dollars (85% of the nominal GDP value and 94% of the real GDP)<sup>1</sup>. The data of the US Treasury Department Financial Management Service show a *two-fold* increase of the American public debt between December 2001-December 2009 (increase of 6,300 billion US dollars), most part of this increase taking place between December 2005-December 2009 (4,000 billion US dollars).

As of the second half of 2001 until 2007, the Federal Reserves and the intragovernmental participations accounted for the largest share of the USTS. However, between December 2007-December 2009, the representation of the other participants<sup>2</sup> increased strongly, from 48% to about 57% of the total (**Chart 1**). This increase is due mainly to the behaviour of *other investors* who increased their participation

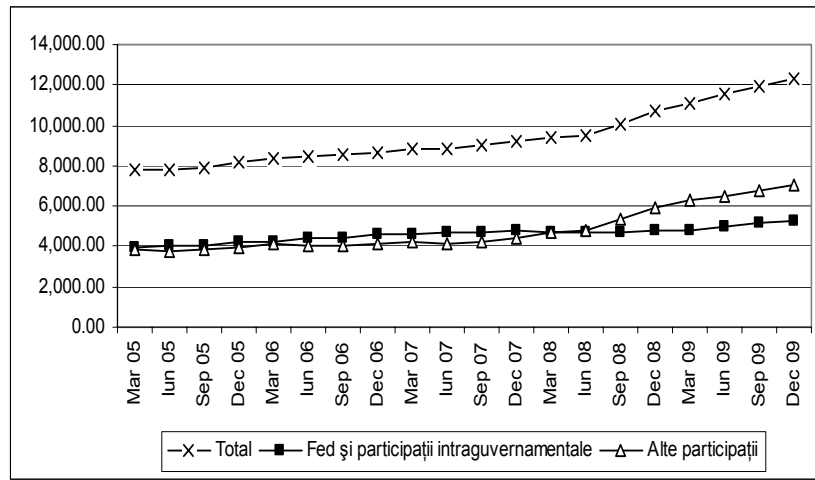
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<sup>1</sup> According to US Department of Treasury, Office for Public Debt data (2009) and to US Department of Commerce, Office for Economic Analysis data (2010).

<sup>2</sup> The balance of the investors: deposit, pension funds and mutual funds institutions; insurance companies; local governments; foreign investors and other investors.

from 3% to 9% during the mentioned period and to the *international participation* whose share increased, over the same period, from 27% to almost 30% of the total USTS value.

**Chart 1**  
**ATS structure in March, June, September and December 2005-2009**  
**(billion US dollars)**



Source: US Treasury Department Financial Management Service

The attraction of the USTS market for the investors (foreign ones included) is explained by two basic factors: its intrinsic characteristics and the systemic beta risk corroborated with the effects of the global financial and economic crisis. On the one hand, USTS market is regarded as one of the largest, most liquid and most safe markets within the global financial system and with low trading costs. On the other hand, the global crisis amplified the systemic beta risk<sup>3</sup> and the risk aversion of the investors which redirected increasingly towards safe assets.

By the end of 2009, about 59% of the US public debt was covered by treasury marketable securities (TMS).<sup>4</sup> Between 2007-2009, there was a 10 percent points increase of the proportion of TMS within the

<sup>3</sup> Described in Sharpe's model for financial assets evaluation (MEDAF or CAPM).

<sup>4</sup> TMS can also be traded on the secondary market.

overall USTS. This evolution must be correlated with the fact that most of the USTS is owned by the public at large (including the public foreign investors) (99.7%), 89% of the non-marketable securities are intragovernmental (**Table 1**), and the Federal Reserves and the intragovernmental participation gradually decreased their proportion within the USTS.

**Table 1**

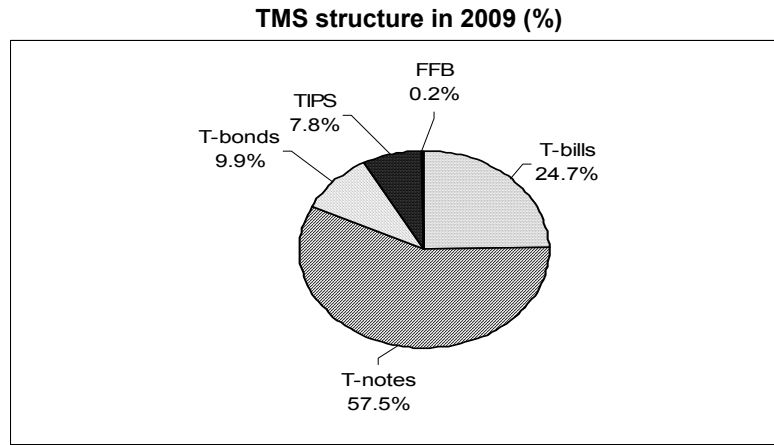
**USTS structure on December 31, 2009 (million US dollars)**

Securities	Owned by the public at large	Intragovernmental participation	Total
<b>Marketable securities, of which:</b>	<b>7 249 848</b>	<b>22 648</b>	<b>7 272 496</b>
➤ Treasury securities (treasury bills) maturity date up to 52 weeks	1 787 913	5 567	1793480
➤ Treasury securities (treasury notes) maturity date at 2, 3, 5, 7 and 10 years and interest payment at 6 months	4 179 412	1 696	4 181 108
➤ Treasury bonds with interest payment at 6 months	714 672	3 259	717 931
➤ Treasury Inflation-Protected Securities, maturity date at 5, 10, 30 years	567 851	205	568 055
➤ Bonds issued by the Federal Financing Bank (FFB)	0	11 921	11 921
<b>Non-marketable securities</b>	<b>561 161</b>	<b>4 477 693</b>	<b>5 038 854</b>
<b>Total state securities</b>	<b>7 811 009</b>	<b>4 500 341</b>	<b>2 311 350</b>

*Source: US Department of Treasury, Office for Public Debt*

In 2009, TMS structure consisted of *T-notes* (57.5%) with maturity date at 2, 3, 5, 7 and 10 years; *T-bills* (24.7%) with maturity date up to 52 weeks; *T-bonds* with maturity date at 30 years; *TIPS* treasury inflation-protected securities, with maturity date at 5, 10 and 30 years and bonds issued by the Federal Financing Bank (FFB) almost 18% (**Chart 2**).

Chart 2



Source: US Department of Treasury, Office for Public Debt

## 2. Main foreign holders of TMS

US Treasury publishes periodically data on TMS value held by foreign investors. These data must be looked at with caution because they don't necessary reflect an objective reality, as shown by a simple comparison of two data sets: those from January 2010 and the revised ones published in March 2010.

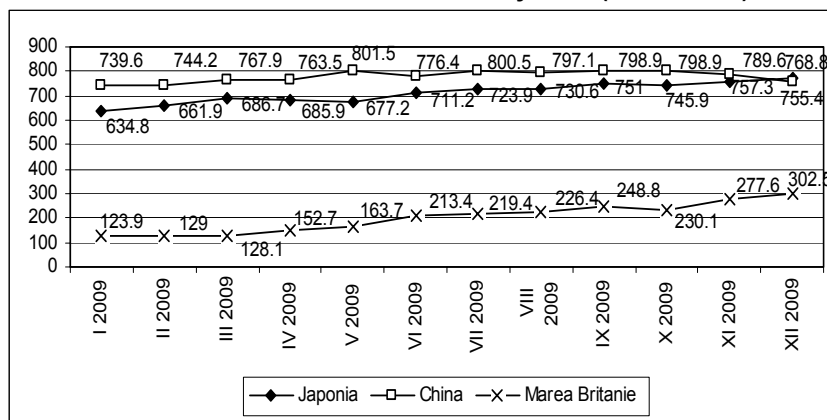
China became in September 2008 the main foreign holder of US Treasury securities, ahead of Japan (not considering the securities owned by Hong Kong-China and Taiwan).<sup>5</sup> **According to January 2010 official data** (variant I), in May 2009, the total nominal value of TMS owned by China reached an all time maximum of 801.5 billion USD, their nominal value decreasing to 755.4 billion USD in September 2009, month when Japan became the leading foreign investor in the TMS with 768.8 billion USD. In January-December 2009, Japan increased by 134 billion USD its investments in TMS, China by 15.8 billion USD and Great Britain (the third largest foreign investor in US Treasury securities) by 178.6 billion USD (**Chart 3**).

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<sup>5</sup> TMS value held by other countries includes both state and private investors participation.

Chart 3

Main three foreign holders of US Treasury securities, January-December 2009 – variant of January 2010 (billion USD)



Note: Data recorded by the end of each month.

Source: US Department of Treasury / Council of the Federal Reserves

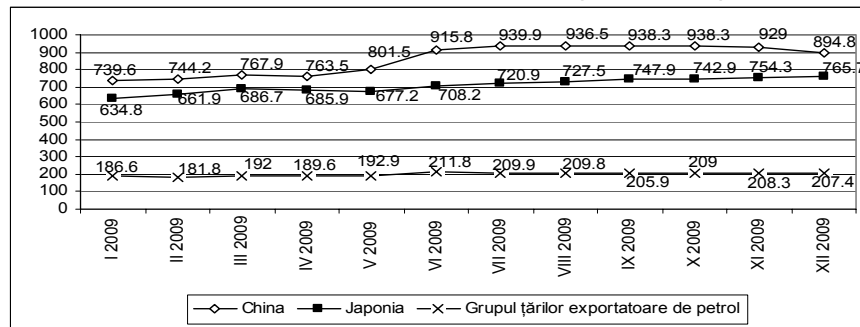
The behaviour of the Chinese investors was widely commented by the financial press and mainly correlated with the dissensions existing in the bilateral relations between the US and China.<sup>6</sup> However, US Treasury data published in March 2010 (variant II) are quite different from those reported in January 2010 (variant I) (**Charts 3 and 4**).

<sup>6</sup> The USA refuse to grant China the statute of market economy invoking among other the excessive intervention of the Chinese state in the economy and non-observance of human rights. The USA accuses China of maintaining the yuan at an undervalued exchange rate which automatically boosts the Chinese exports and impedes on the imports. The anti-dumping investigations initiated by the USA against China within the World Trade Organisation (WTO) are increasingly frequent. Another disagreement is the embargo on weapons imposed by the USA on China for over 20 years. The meetings of some US leaders with Dalai Lama are a sensitive point of the bilateral relations. In October 2009, the US President Barack Obama delayed his meeting with the Tibetan spiritual leader, which took place, nevertheless on February 18, 2010. The Chinese authorities have immediately declared that the meeting with dalai Lama contravenes the acknowledgement by the USA that Tibet belongs to China. What tensions further the relations between the USA and hina are the US delivery of weaponry to Taiwan.

The reviewed data show that the Chinese investors held in December 2009 almost 895 billion USD worth of USTS (139 billion USD more than in variant I), 766 billion USD worth of USTS held by the Japanese investors (-3 billion) and 178 billion USD worth of USTS held by the British (+124 billion).

According to variant I, the main investors in USTS in December 2009 were Japan (21.3% of the total USTS), China (20.9%), Great Britain (8.4%), group of the oil exporting countries (5.2%), group of the Caribbean banking centres (5.1%)<sup>7</sup>, Brazil (4.4%), Hong Kong-China (4.2%) and the Russian Federation (3.3%). Variant II, however, gives the following hierarchy: China (24.3% of the total USTS), Japan (20.8%), group of the oil exporting countries (5.6%), Great Britain (4.8%), Brazil (4.6%), Hong Kong-China (4%), group of the Caribbean banking centres (3,5%) and the Russian Federation (3,8%).

**Chart 4**  
**Main three foreign holders of US Treasury securities, January-December 2009 – variant March 2010 (billion USD)**



Note: Data recorded by the end of each month.

Source: US Department of Treasury / Council of the Federal Reserves

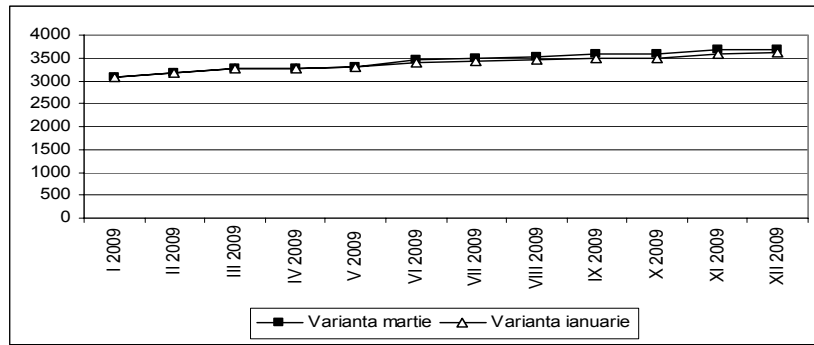
The differences between the two sets of data may be accounted by the fact that the transactions made in the name of the investors from a specific country (China, for instance) by the dealers, performed on the territory of another country (such as the Great Britain or Hong Kong-China) are not recorded as purchases by the

<sup>7</sup> The Dutch Antilles, Bahamas, Bermuda, Cayman Islands, the British Virgin Islands and Panama.

initiating country (China). These statistical errors are corrected by the periodical revisions.

According to both data sets, the foreign demand for USTS increased during January-December 2009 (Chart 5) on the background of the global incertitude. As mentioned earlier, the risk aversion of the investors directed them towards *safe* assets. However, the March 2010 variant shows a more stressed increase of the demand in 2009 (+617.6 billion USD), than the January 2010 variant (+542.5 billion USD).

**Chart 5**  
**Foreign demand for USTS according to the two data sets, in January-December 2009 (billion USD)**



Source: US Department of Treasury / Council of the Federal Reserves

The data published by the US Treasury show that several investors have decreased their investments in USTS between January-December 2009, for instance Ireland (10.7 billion USD according to variant I/6.4 according to variant II), Germany (3.5 / 8.4 billion USD), Turkey (3 / 3.2 billion USD), Chile (2.7 / 2.8 billion USD), Thailand (1.8 / 3.9 billion USD), Israel (1.6 / 3.1 billion USD), the Caribbean banking centres (48.7 billion USD according to variant II), Norway (9.8 billion USD according to variant II). We must mention the investing position of China and of other countries, increasingly reluctant to invest in USTS. In January 2010, compared to December 2009, the participations of the Chinese investors decreased by 5.8 billion USD, after other two successive decreases in 2009 (34.2 billion USD in December compared to November and 9.3 billion USD in November compared to October).



The evolutions mentioned earlier must be correlated, among other, with the efforts to get passed the recession and with the national programs to boost economy; the fears that the US dollar may depreciate strongly, which would erode the value of the assets held in USD, the tendency of the investors to diversify the risks<sup>8</sup> (although cautiously, because the massive sale of securities is equivalent with the decrease of their yields and even the strong depreciation of the USD and erosion of the value of the assets held in USD).

### **3. Slope of USTS yield curve and correlation with the global financial and economic crisis**

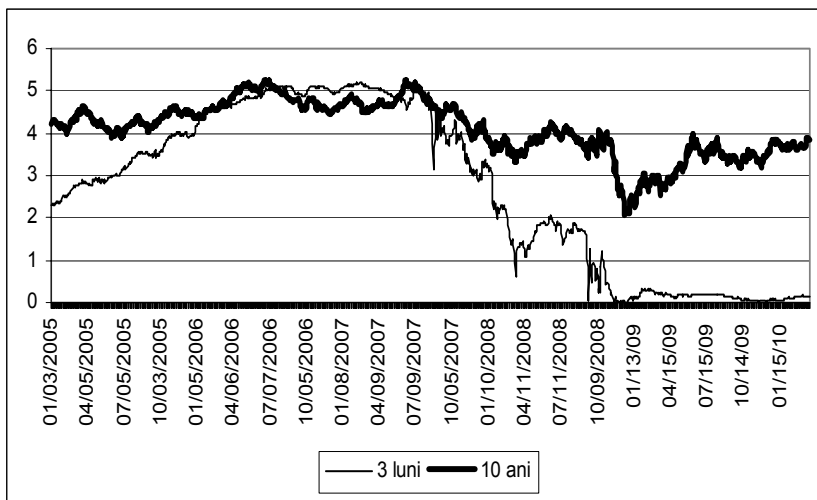
The **curve of yields** shows the yields paid for securities with various maturity dates. Usually, the yields are higher for the securities with longer maturity dates than for those with short-term maturities. However, under the action of a complex of factors, the yields of the short-term maturity securities may exceed the yields of the long-term maturity, causing a **reversal of the yield curve**.

As of the 80s, several economists brought forward arguments in support of the idea that the slope of USTS yield curve (difference between the long term interest rates and the short term interest rates, or the spread) is a adequate indicator of the future economic activities (Estrella, Trubin, 2006). Empirically, it was shown that before a recession, the short term interest rates get to exceed the long term interest rates producing a reversal of the yield curve. Usually the spread of the securities with due date at 10 years and 3 months are taken into consideration (Estrella, Trubin, 2006, p. 4). The empirical evidence in the USA shows a negative spread 4-6 quarters before a recession starts – as verified in the case of the recent global crisis too..

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<sup>8</sup> *The USTS holds about 20% of the international market of the state securities (Standard & Poor's 2009), and other securities may have even better yields.*

**Chart 6**  
**Daily yields of the treasury securities with maturity at 10 years,**  
**compared to the treasury securities with maturity at 3 months**  
**between 3.01.2005-31.03.2010 (percentage)**

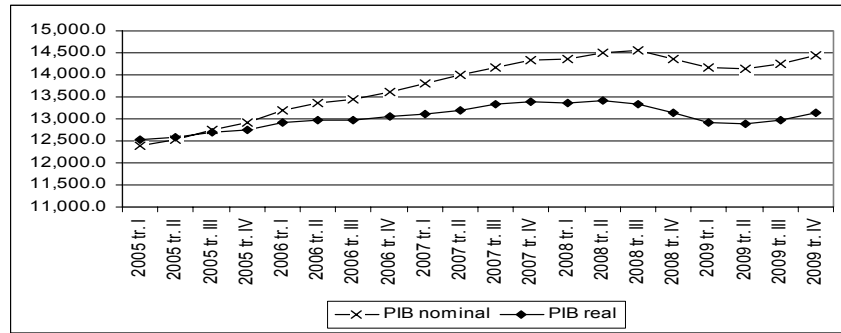


Source: US Department of Treasury

As of January 2006, daily negative values of the spread were noticed for the yields between securities with maturity at 10 years and at 3 months. Calculated as monthly average, the spread of the two categories of securities was negative between August 2006 – May 2007, which determined the reversal of the yield curve for the two categories of securities (Chart 6).

In quarters 1, 3 and 4 of 2008, the real GDP decreased by 0.18, 0.68 and 1.37% (compared to the GDP of the previous quarter), same as in quarters 1 and 2 of 2009, when the GDP continued its decrease (1.6% and 0.2% compared to the previous quarter) (Chart 7). In its April 2008 Report, the World Monetary Fund noted that “outside the problems at the interface between the mortgage market and the real economy, the USA are badly affected by the risk management errors of prime financial institutions” (WMF, p. xi).

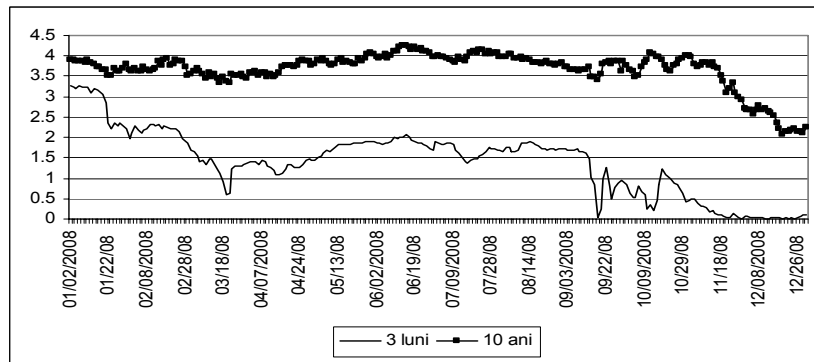
**Chart 7**  
**GDP evolution in current prices and constant prices (2005 level)**  
**between 2005-2009 (billion USD)**



Source: US Department of Trade, Bureau of Economic Analysis

During 2008, no episode of reversed yield curve was noticed for the treasury securities with maturity at 10 years and 3 months. The spread between the treasury securities with maturity at 10 years and 3 months displayed an ascending trend in 2008 with ups and downs (0.65% in early 2008, 3.82% on October 15 and 2.14% on December 31) (Chart 8). In parallel, as of 4<sup>th</sup> quarter 2008 the yield of all USTS securities with maturity at 1, 3 and 6 months decreased sharply nearing zero or even with null yields.

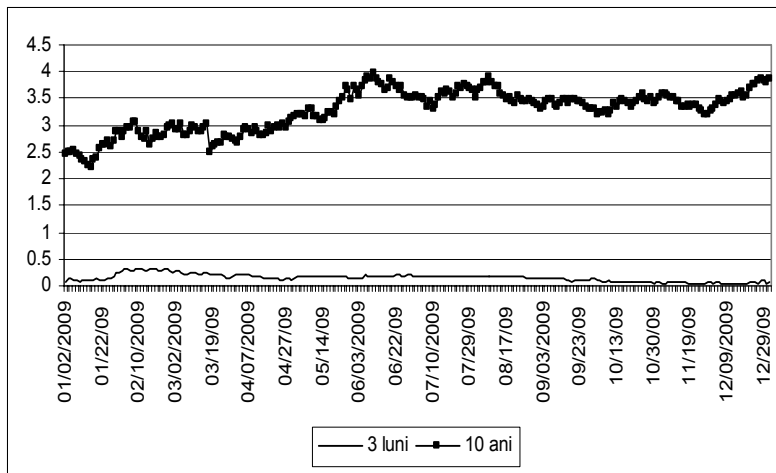
**Chart 8**  
**Yield of treasury securities with maturity at 10 years compared to the**  
**yield of treasury securities with maturity at 3 months in 2008 (percent)**



Source: US Department of Treasury

In 2009, the yields of the treasury securities with maturity at 3 months varied within the interval 0.02-0.32%, and in the 4<sup>th</sup> quarter they didn't exceed 0.1%. In contrast, the yields of the treasury securities with maturity at 10 years increased, which increased the spread between the two categories of USTs (2.38% in early 2009 and 3.79% in late 2009) (**Chart 9**).

**Chart 9**  
Yield of treasury securities with maturity at 10 years compared to the yield of treasury securities with maturity at 3 months in 2009 (percent)



Source: US Department of Treasury

The literature shows that the yield of the long-term securities are anti-cyclic, while the yields of the short-term securities are pro-cyclic (Ang, Piazzesi, Wei 2004, p. 2), which is supported by these figures too.

These evolutions are due to several categories of factors among which:

(a) Monetary policy – the harsher monetary policy make the interest rates increase, stronger for the short-term securities and more moderate for the long-term securities, while the relaxation of the monetary policy decreases the interest rates..

(b) The anti-crisis programs – for instance, the US Federal Reserves program to purchase 300 billion USD worth of long term treasury securities (program finished in October 2009) (AP, 2010) tempered the increase of these securities' yields.

(c) Investors' behaviour and the changes in expectations – the risk aversion of the investors and the lack of liquidity on the background of the global financial and economic crisis directed the investors towards purchasing *safe* and *liquid* assets – TMS. This decreased the interest rates. During the subsequent period the demand for USD assets may decrease on the background of a healing world economy, increased trust of the foreign investors in the international business environment. China and other international investors intend to diversify their portfolio of investments to decrease their dependence on the US. The sustained decrease of the demand would increase USTS yields and would hinder US economy healing.

#### **4. Short-term and medium-term prospects**

US Treasury Secretary, Timothy Geithner, is confident in the prospects of US economy. In a recent interview he stated that the USA will never lose their AAA rating and brought the following arguments to his statement:

- the investors worldwide buy USTS when they are worried by the global stability, which shows the "basic trust" in the American economy (Christie 2010);
- the US budget deficit is forecast to decrease over the next four years as the economy heals and unemployment decreases;
- despite the 2.5% decrease of the US DGP in 2009, compared to 2008, there already are clear signs of economic growth among which the 5.7% growth of the real GDP in the 4<sup>th</sup> quarter 2009 compared to the 2<sup>nd</sup> quarter 2009 (and by 2.2% in the third quarter compared to the second quarter) (Bureau of Economic Analysis 2010). For 2010, UN experts forecast a 2.1% increase of the USD GDP compared to 2009 (UN 2010).

The January 2010 WMF Report estimated for 2010 a better conjecture for the US economy than for other developed economies: 2.7% growth of the US GDP compared to 2.1% growth of the GDP in the developed economies and 1% the Euro zone (Pisani-Ferry, Posen 2009), and the USTS are perceived by the investors as safe and liquid assets.

These elements are arguments in favour of a robust demand for USTS. There are, however, counterarguments that may cause the sustained decrease of the demand and, implicitly, the increase of USTS yields.

In early February 2010, Moody's said there is a risk to decrease USTS rating below AAA provided severe measures are taken to decrease the budget deficits (Mackenzie, Tett 2010). The investors are also worried by the perspective of the double deficit – current account and budgetary. The reform of the US health insurance system will generate additional expenses. The unemployment rate – 9.7% by the end of March 2010<sup>9</sup> – although decreasing, in comparison with late 2009 – demand expenses for the social assistance programs. The prognosis shows for 2010 a 1,560 billion USD deficit, 10.6% of the US GDP (compared to 1,400 billion USD or 9.9% of the US GDP in 2009) (Reuters 2010).

The disposition of the investors to diversify the risks, corroborated with the healing of the world economy (WNF estimates a 3.9% growth of the global GDP in 2009) and the attractiveness of securities issued by the governments of other countries, with higher yields than the USTS, may decrease the demand for USTS – much more for the long-term securities than for the short-term securities, which may impede on US economy healing.

Beyond these assertions, it is obvious that the US *pattern* of economic growth focusing on consumption is no longer viable and the national strategies for economic developed must be reviewed, in parallel with enhancing the cooperation within the international bodies, increasing the transparency of the economic activities and monitoring/sanctioning any forms of manipulation of the markets or results.

*Based on US Treasury statistics and on the empiric evidence of the literature, this article captioned – although not exhaustively – the recent evolutions on USTS market and the determining factors. We drew attention to the fact that the official statistics must be looked at with circumspection because they don't necessarily reflect an objective reality. We have also outlined the pressures in terms of*

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<sup>9</sup> According to data from the US Bureau for Labour Market Statistics (2010).

*falling demand for USTS and, implicitly, increasing yields for the long-term securities, as observed even since 2009.*

### References

1. Ang, A., Piazzesi, M. Wei, M. (2004), *What Does the Yield Curve Tell Us About GDP Growth?*, National Bureau of Economic Research, Working Paper 10672, August 2004.
2. Associated Press, *Foreign Demand for Treasury Securities Falls*, 16.02.2010.
3. Bureau of Economic Analysis (2010), *GDP: Fourth Quarter 2009 (Advanced Estimate)*, National Economic Accounts, Press Release.
4. Bureau of Labor Statistics (2010), *The Employment Situation – March 2010*.
5. Bureau of the Public Debt (2009), *Monthly Statement of the Public Debt of the United States*, December 2009, Washington D.C.
6. Bureau of the Public Debt (2008), *Monthly Statement of the Public Debt of the United States*, December 2008, Washington D.C.
7. Bureau of the Public Debt (2007), *Monthly Statement of the Public Debt of the United States*, December 2007, Washington D.C.
8. Christie, R. (2010), *Geithner Says US Will ,Never' Lose Aaa Debt Rating*, Bloomberg, 8.02.2010.
9. Estrella, A., Trubin, M. R. (2006), *The Yield Curve as a Leading Indicator: Some Practical Issues*, Federal Reserve Bank of New York, Current Issues in Economy and Finance, vol. 12, no. 5, July/August 2006.
10. Financial Management Service (2010), *Treasury Bulletin*, March 2010, Washington D.C.
11. International Monetary Fund (IMF) (2010), *World Economic Outlook Update*, January 2010, Washington D.C.
12. International Monetary Fund (IMF) (2008), *World Economic Outlook, Housing and the Business Cycle*, April 2008, Washington D.C.
13. Mackenzie, M., Tett, G. (2010), *Moody's Warns US of Credit Rating Fears*, Financial Times, 03.02.2010.

14. Pisani-Ferry, J., Posen, A. S. (editori) (2009), *The Euro at Ten: The Next Global Currency?*, Peterson Institute for International Economics Bruegel, June 2009, Washington D.C.
15. Reuters, *Obama's 2010 Budget: Deficit Soars Amid Job Spending*, 1.02.2010.
16. Standard & Poor's (2009), *International Treasury Bonds (A Primer)*.
17. United Nations (2010), *World Economic Situation and Prospects 2010*, January 2010, New York.