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WINTER SAECULUM

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Abstract
Accumulated imbalances in the economy and on the markets cause specific financial market dynamics that have formed characteristic patterns kept throughout long financial history. In 2008 Authors presented their expectations of key macroeconomic and selected asset class markets developments for period ahead based on *Saeculum* theory. Use of term *Secular* describes a specific valuation environment during prolonged period. If valuations as well as selected macro variables are considered as a tool for understanding business cycles then market cycles become much more obvious and easily understandable. Therefore over the long run, certain asset classes do better in terms of risk reward profile than others. Further on, there is no need for frequent portfolio rebalancing and timing of specific investment positions within a particular asset class market. Current stage in cycle development suggests a need for reassessment of trends and prevailing phenomena due to cyclical nture of long lasting *Saeculums.* Paper reviews developments in recognizable patterns of selected metrics in current *Winter Saeculum* dominated with prevailing forces of delivering, deflation and decrease in velocity of money..

Keywords: asset allocation, portfolio rebalancing, asset class performance, market cycle, asset class bubbles.

Jel Classification: G110; G170

INTRODUCTION

Incompletely deterministic nature of economic process offers a substantial room for upgrade of a framework that explains prevailing market forces. Market complexity so as the complexity of underlying economic structure requires observation, testing and identification of key developments that determine dominant asset allocation and investment portfolio construction over long periods of time. From portfolio perspective traditional diversification will usually be good enough, although, returns on different asset classes viewed as the part of ongoing *Saeculum* are likely to materially diverge. *Saeculums* are born in process of imploding of various asset class bubbles that are formed during prolonged time periods and caused predominantly by massive speculation, momentum, and skullduggery. Positioning and constructing investment portfolio in

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accordance with particular *Saeculum* can make generational wealth creation opportunities (Alexander 2002). Core thesis in *Saeculum* theory is a mean reversion of long lasting economic trends.

At the beginning of the current *Winter Saeculum*, for which authors believe started in 2008 and still lasts at the moment of writing this paper (May 2016), Mihalina and Krivicic (2008) offered expectations of key economic developments in Croatia. They based their expectations on observations of characteristic market patterns and underlying economy behavior in complementary historic periods, *Winter Saeculums*, in the long run. Mihalina and Krivicic (2008) concluded that it is likely to expect in a prolonged period: (1) expanding, loose, accommodative monetary policy following a reduced foreign reserve requirement; (2) midterm decline in personal consumption; (3) decline in imports and balancing of balance of payments; (4) decline in real estate prices; (5) deleveraging (Bekaert et al. 2014) coupled with credit supply constraints and parallel downside yield curve shift with especially repressed long term yields. Corporate and investment decision makers need to understand the transmission mechanism in context of forward guidance of further accommodative monetary policy [central bank announcements] and derived relationships — evidently leading valuation driver — that will have substantial implications on performance of various asset classes.

1. PRELIMINARY CONSIDERATIONS

First coherent methodological and logical framework for understanding how economy and market "works" was analysed by Kondriatiev. According to him and numerous other observers of market cycles economy in whole and various asset classes markets oscillate in cycles that can be decomposed by observing dominant, prevailing trends in selected metrics. In *Saeculum* terminology, Long waves, or *K-waves* are decomposed to characteristic seasons, *K-Seasons* or *Saeclums*, with prime focus on inflation level and its trending. Within the particular *K-season* empirical evidence show that key macroeconomic figures develop in rising and declining cycles with recognizable patterns of overall long run trends. Major metrics for the differentiation of *Saeculums* are real returns on capital asset classes so as major trend and starting level of inflation. *Saeculum* differentiation is clearly shown in Figure 1:

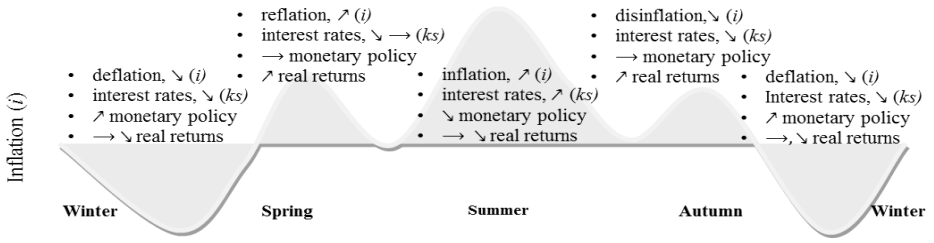

Figure 1. K-Season decomposition: inflation, interest rates, monetary policy and real capital asset class returns

It needs to be mentioned that these findings can be applied both for developed and developing economies and markets but with different length of a particular cycle. Generally developed economies and markets have longer lasting cycles than developing

ones. They last approximately 17+/-2 and 7+/-2 years respectfully. Table 1 summarizes some of the selected empirical evidence for developed markets observed during the century long time series data. Taking into consideration country specifics, these results are to some extent also applicable to developing markets.

Table 1. Overall trend of selected metrics by Saeculums

Metric	Rising Saeculum [Spring, Autumn]	Declining Saeculum [Summer, Winter]
Earnings	↗ Real earnings	↙ Real earnings
P/E	↗ Rising	↙ Declining
Inflation	Stable, around history averages	Above or below average, deflationary or inflationary environment
Risk aversion	Low	High
Stock market	Positive real returns	Negative real returns
Stock prices vs P/E	Positive correlation	Negative correlation
Financial reporting standards	Loose, deregulation	Strict, reregulation
Prevailing population	35–42	45+
Monetary policy	Balanced	Expansive, Restrictive
Generational cycle	Civil, Idealistic	Adaptive, Reactive
Equity risk premium	2,4%	0%
P/R [Price/Recourses]	↗ Rising, P/R>1	↙ Declining, P/R<1
GDP growth vs Equity performance	No significant correlation	No significant correlation
Interest rates vs P/E	No material relation found	No material relation found
Interest rates vs Inflation	Positive relation	Positive relation
Inflation vs P/E	Inverse	Inverse
Broad money	→ Stable and ↗ Rising	Expanding at above avg. rate
Aggregated Credit	↗ Rising	↙ Declining or Stagnating
Production Capacity	>70% Used	<70% Used
Productivity	↗ Rising	↙ Declining
Demographic trend	Rising [natural or immigrations]	Declining [natural or immigrations]
Aggregated Demand	↗ Rising	↙ Declining
Money Velocity [V]	↗ Rising	↙ Declining
Employment	↗ Rising	↙ Declining
Consumer Confidence	↗ Rising	↙ Declining
Inventory	↙ Declining	↗ Rising
Volatility	Constant, ↗ positive	Discontinue, ↙ negative
Portfolio strategies	Traditional [Indexing]	Alternative
Stock analysis	Focus on price	Focus on value
Gross Capital Formation	↗ Rising	↙ Declining
Credit vs Gross Capital Formation	↗ Rising, Positive relation	↙ Declining, Positive relation
Real GDP vs Gross Capital Formation	↗ Rising, Positive relation	↙ Declining or Stagnating, no material relation found

Source: Alexander 2000; 2005; Bernstein 2008; Campbel 2005; Glasner and Cooley 1997; Howe and Strauss 1997; Irwin 1961; Kitchin 1947; Mauldin 2004; Mauldin 2011; Schiller 2000; Shilling 2001; Shilling 2010.

As presented in Table 1 *Winter Saeculums* are periods of deleveraging, deflation, weak stock market returns, declining productivity and employment, falling housing prices and other specific dynamics prevailing in the long run. More about declining productivity find in Mitton (2011). Although it may be intuitive to think there is no winning investment strategy in this kind of market environment, research of financial markets history reveals that actually there is. During *Winter Saeculums* bonds as an asset class outperform equity in total real return with less risk (volatility) over the long run both in developed and developing countries.

2. GENERAL FRAMEWORK SAECULUMS IN DEVELOPED COUNTRIES

below displays key metrics in tracking Saeculums over long history: stock prices (log scale), purchasing price index (PPI, CBR) and US treasury bond yields. The chart shows Kondratieff waves for US decomposed to K-seasons or *Saeculums* since late 1700s.

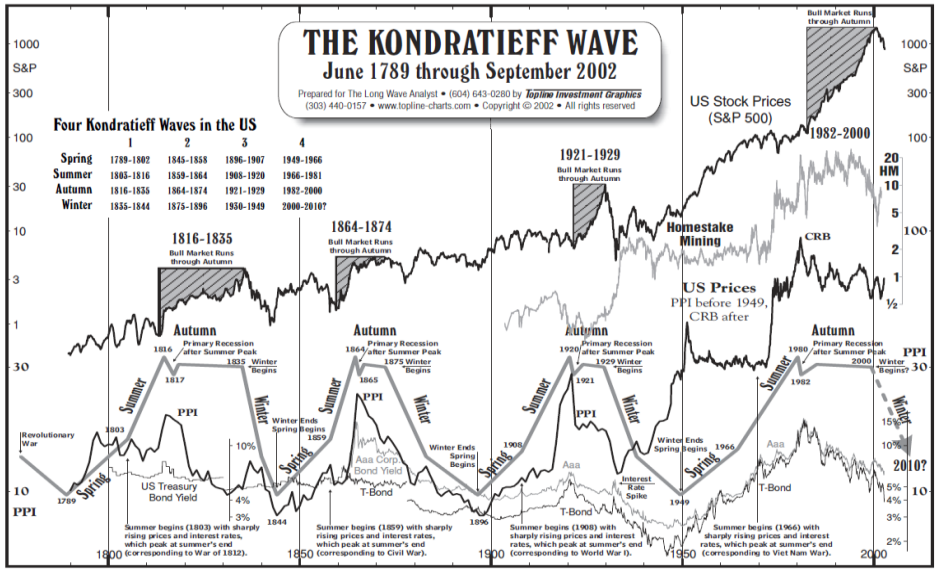

Figure 2. Kondratieff waves in US 1800–2000
Source: Topline investment graphics, The Long Wave Analyst, http://www.longwavegroup.com/market/charts/_pdf/Kondratieff_Cycle_Chart.pdf

2.1. Developed Countries

During Winter Saeculums debt markets historically outperformed stock markets despite periodically rising cycles in equities (as in the period following 2009 stock market bottom). As all previous Winter Saeculums Figure 2 the (current) Winter Saeculum is not different. It is characterized by: (1) deflationary pressures [Figure 3]; (2) expansive monetary policy [Figure 4]; (3) stock market crash occurred and, measuring from previous peak, weak stock market gains since the beginning of the crisis [Figure 5]; (4) declining yields on government bonds [Figure 6]. Before ECB started its outstanding bonds buying program in early 2015 EU inflation turned negative. Inflation in Euro area is still around zero despite massive bond buying program [QE] and zero interest rate policy. Six years after US embarked on QE ECB began buying government bonds in March 2015 turning to QE after cutting one of its main interest rates below zero in 2014.

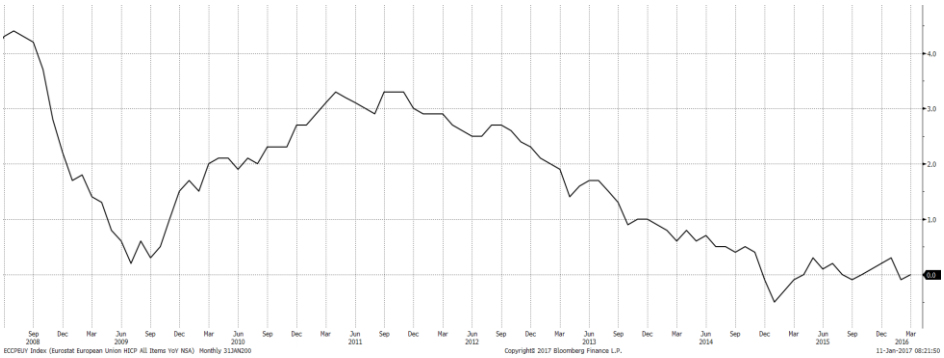

Figure 3. European Union Harmonised Index of Consumer Prices, yearly, 2008–2016
Source: Bloomberg professional

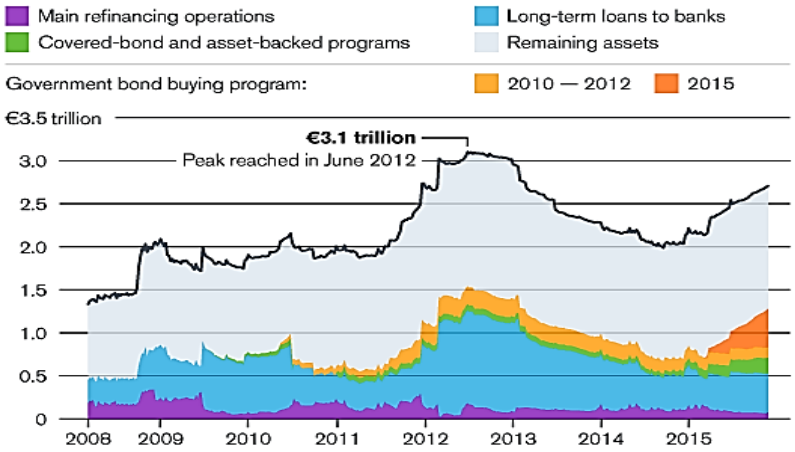

Figure 4. ECB's expanding balance sheet
Source: Bloomberg, Europe's QE Quandry, https://www.bloomberg.com/quicktake/europes-qe-quandary

Global equity markets wiped more than 30 trillion dollars of wealth in 2 years from 2007. till 2009. European equity markets were no different. Measured by leading German equity index – DAX the correction was higher than 50%. Almost ten years later equity market completely recovered. But, from its previous 2007 peak annualized return is less than 1%. (with dividends reinvested). This development is in line with historical behavior of equity markets during *Winter Saeculums*, current one beginning in 2000. in developed markets. Global markets measured as Bloomberg world exchange market capitalization had even worse performance of -1.3% annually (without dividends reinvested) in the same period. Government bonds all over the globe rose as yields declined rather rapidly due to engagement of central banks in monetary base expansion, Quantitative Easing [QE] programs.

The chart below [see Figure 6] illustrates Germany's 10 year government bond generic yield fall since 2007 peak from above 4% level to a current level of 0.12%.

Figure 5. DAX equity index, 2006–2016
Source: Bloomberg professional

Figure 6. German 10 year government bond generic yield, 2007–2016
Source: Bloomberg professional

Stock markets did excellent since the bottom in 2009 with total returns of well over 100%. Still, data revels the winning strategy for Countries in early stages of *Winter Saeculum* was focusing on debt markets. Low level and sideways trend of overall inflation, decline in money velocity together with recent developments in European stock markets with corrections of stock prices of more than 20% indicate *Winter Saeculum* is not over yet. More on decline in money velocity find in Ahking (1984). US's early adoption of stimulating monetary policy measures probably cushioned negative impact on capital asset classes' real returns and perhaps this is why they did not experience negative performance to the same extent. The obvious reason for that is 6 years delay in engaging QE program in EU which causes different positions in debt cycle (Dalio 2014).

In order to compare *Winter Saeculum* performance of major financial assets (stock and bonds) Authors made analysis of total returns for stocks and bonds in two extremes: (1) stock market 2009 bottom and; (2) stock market peak 2007. Bond performance was observed by implementing hypothetical strategy of successive rolling of new 10-year issues of German bonds starting in May 2009 when stocks reached its bottom [max yield for stocks, bottom to current]. Equities performance was observed by DAX [30] index

[which includes dividends][2]. One of the simplest possible investment strategies for ongoing *Winter Saeculum* consists of buying 10 year government bonds and rolling on new issues.

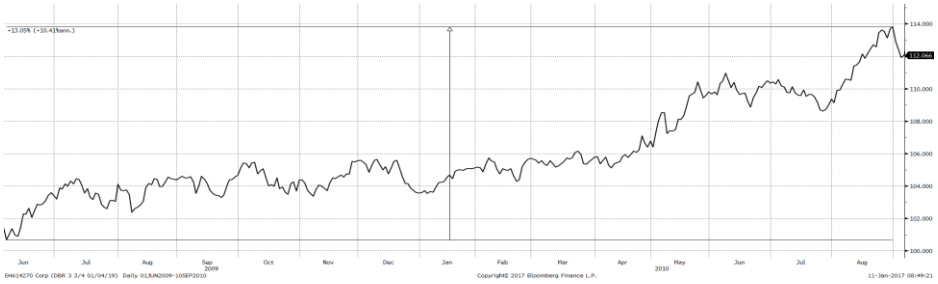

Figure 7. Germany govt bond, 2019 maturity, June 2009–August 2010
Source: Bloomberg professional

Figure 8. Germany govt bond, 2020 maturity, July 2010–December 2011
Source: Bloomberg professional

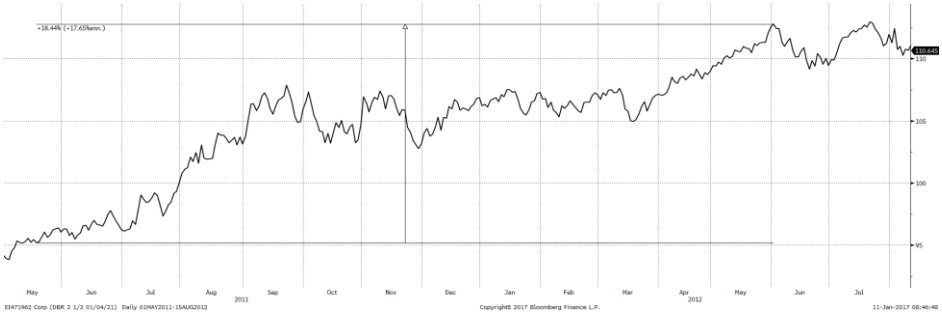

Figure 9. Germany govt bond, 2021 maturity, May 2011–July 2012
Source: Bloomberg professional

[2] The DAX takes account of dividend income and notionally reinvests any dividend income in additional shares of the company concerned in the same proportion as their weighting index, http://glossary.reuters.com/index.php?title=DAX_30

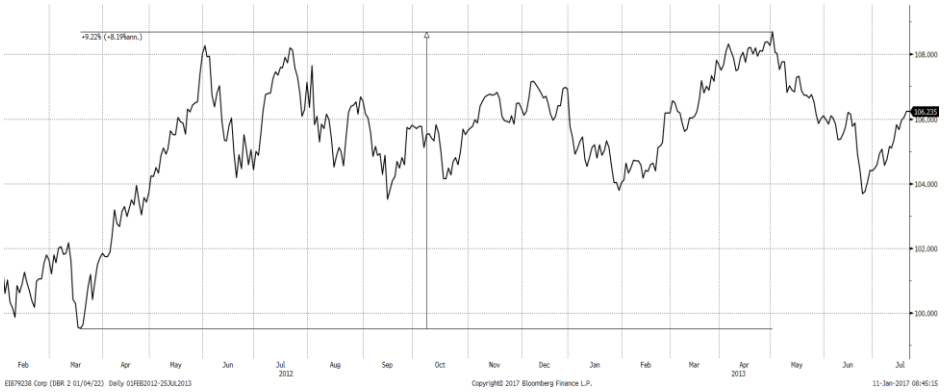

Figure 10. Germany govt bond, 2022 maturity, February 2012–July 2013
Source: Bloomberg professional

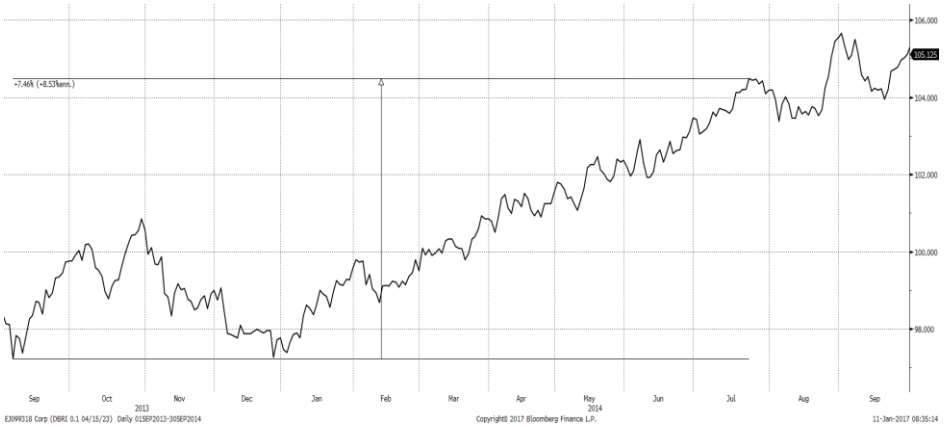

Figure 11. Germany govt bond, 2023 maturity, September 2013–September 2014
Source: Bloomberg professional

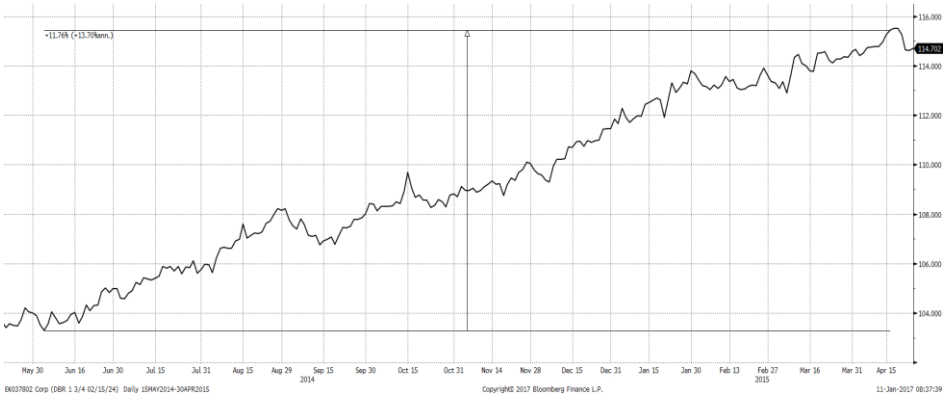

Figure 12. Germany govt bond, 2024 maturity, May 2014–April 2015
Source: Bloomberg professional

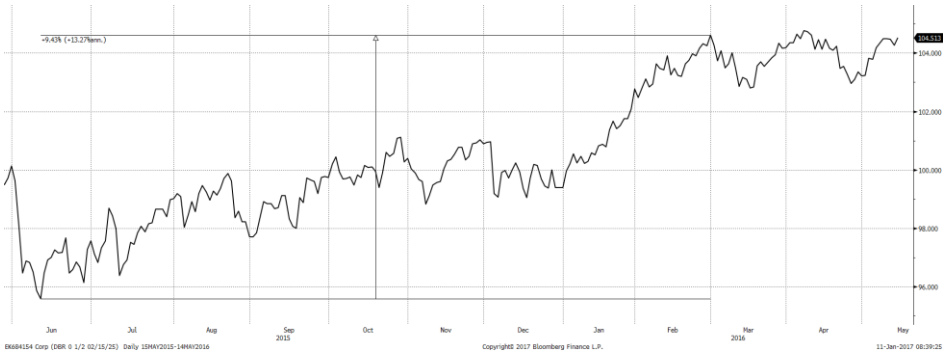

Figure 13. Germany govt bond, 2025 maturity, June 2015–May 2016
Source: Bloomberg professional

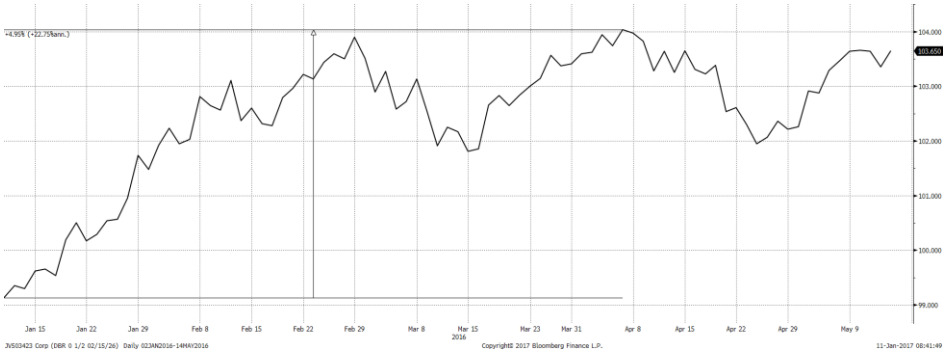

Figure 14. Germany govt bond, 2026 maturity, January 2016–May 2016
Source: Bloomberg professional

From presented German government bond price movements it is obvious that each of the eight 10 year bonds yielded approx. 10% on average, with total nominal return [coupons compounded at weighted average coupon payment on equally weighted 2019–2026 maturities] for period of approximately 146,12%[3]. In the same period from 2009 March low to February 2016 DAX index returned 138,7%. Although this is probably not what most market participants gained, it clearly illustrates the opportunity this strategy offered without the need for frequent portfolio rebalancing. In case coupon payments are added, this bond rolling strategy outperformed strong cyclical stock market performance. Back testing another extreme, equities previous highs in 2000 and 2007 results are pointing to — as expected — radical bond outperformance compared to equities. Annual return on equities [dividends reinvested] is 0,5% as Figure 5 shows us mentioned 13,73% on average for bonds. This suggests that during *Winter Saeculum* favorable asset allocation is overweighing government bonds.

[3] If there was no new 10 year bond issue on the date when already bought bonds were supposed to be rolled i.e. their 1 year holding period has expired, outstanding bonds with maturity a close as possible to 10 years where considered.

2.2. Croatian *Winter Saeculum*

Croatian Saeculums could be decomposed to three characteristic periods in the past 20 years. Due to lack of long term data, findings must be taken with considerable caution. Period prior to 1999 had characteristics of *Summer* [declining] *Saeculum* followed by *Autumn* [rising] *Saeculum* ending in capital assets bubble bust in late 2007. New current *Winter Saeculum* was born when?:

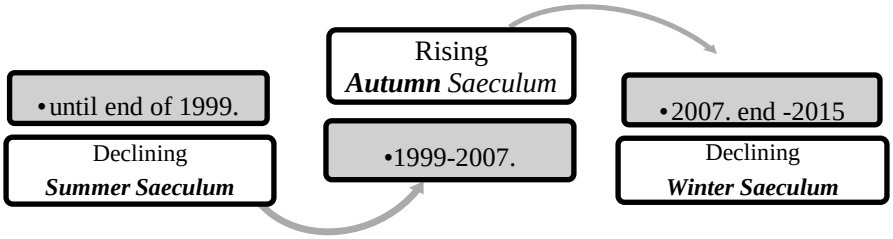

Figure 15. Possible Croatian Saeculum decomposition

These periods have in common characteristic patterns of key economic figures development. Declining *Saeculums* experienced divergence in inflation level and trends from history averages, decline in gross capital formation, stagnation and decline of aggregate credit with tightened lending standards and stagnation or decline in real GDP growth.

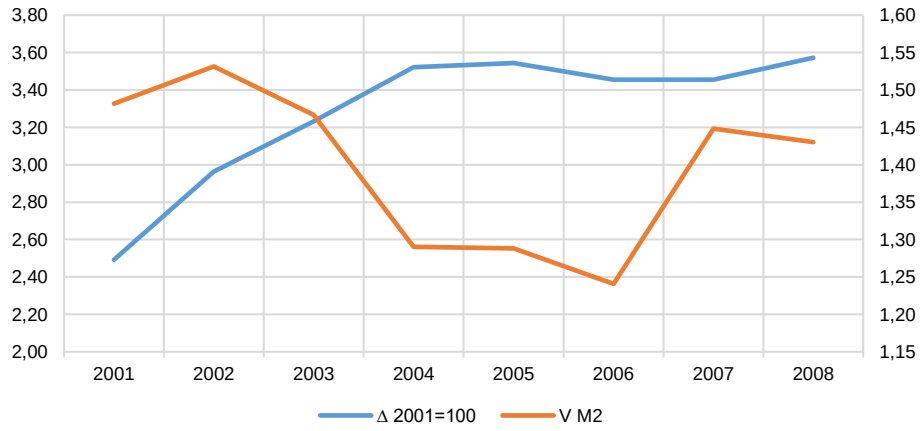

Figure 16. M2 velocity and Nonfinancial [loans] [2001 = 100]
Source: Croatian national bank, Statistical publications

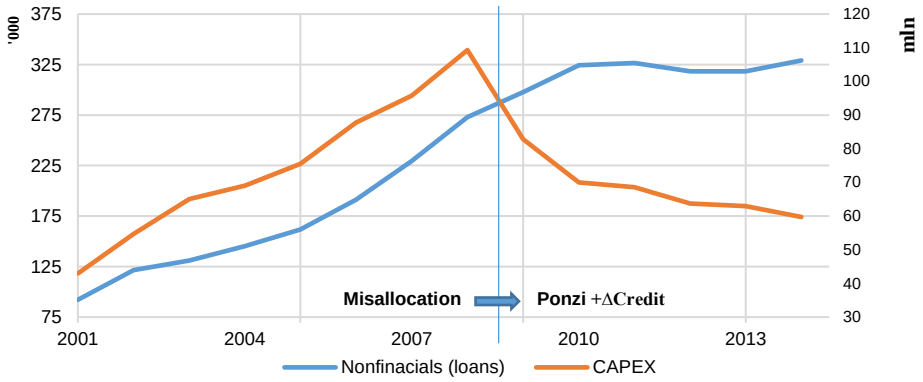

Figure 17. Capital misallocation
Source: Croatian national bank, Statistical publications

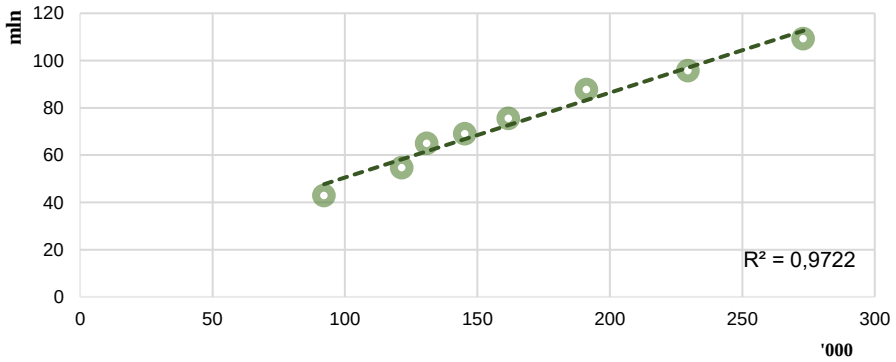

Figure 18. Credit vs Gross Capital formation 2001–2008
Source: Croatian national bank, Statistical publications

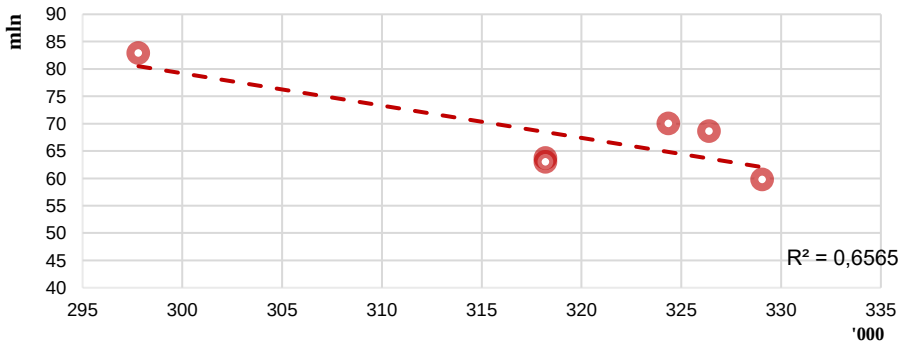

Figure 19. Credit vs Gross capital formation 2009–2014
Source: Croatian national bank, Statistical publications

From a historical perspective different asset markets delivered both real and nominal returns that can be put in frame of a particular *Saeculum*. In *Summer Saeculum* period of 1999–2007 due to elevated level of inflation and moderate trend in real estate prices bonds together with equities performed poorly. *Winter Saeculum* delivered superior returns for bonds due to deflationary forces and contrary to major losses in equity and real estate prices. *Autumn* rising *Saeculum* delivered above average returns for capital asset classes [equity and real estate] fuelling bubble that finally imploded. More on bubbles find in Sullivan (2009).

Difference between the stock markets and bond market performance is even greater for developing markets. Figure 20 shows Croatia ZSE [Zagreb Stock Exchange] CROBIS bond index[4] that tracks ten bullet bonds with fixed interest rates. Since 2009 stock market bottom CROBIS index returned 26.3% in nominal terms until May 2016 [see Figure 20]. Given CROBIS consists only of government bonds it can be considered as adequate measure of bond market performance in Croatia for the purposes of this paper. Total nominal return for government bond market in Croatia is measured by CROBIS performance from 2009 when stock market reached its bottom rather than with 10 year government bond yield rollover [as for German example described]. This is because of the fact that Croatia does not have 10 year new bond issues each year. In period under analysis coupon payments are compounded geometrically in order to approximate total nominal return of hypothetical strategy. The weighted average coupon payment is 5.71% which yields 49% in the period from March 2009 till May 2016. If coupons have had been reinvested at weighted average coupon payment total nominal return is approximately 88% in observed period. As opposed to CROBIS index Croatian equity index CROBEX[5] — had a rather catastrophic performance in the same 2009–2016 period.

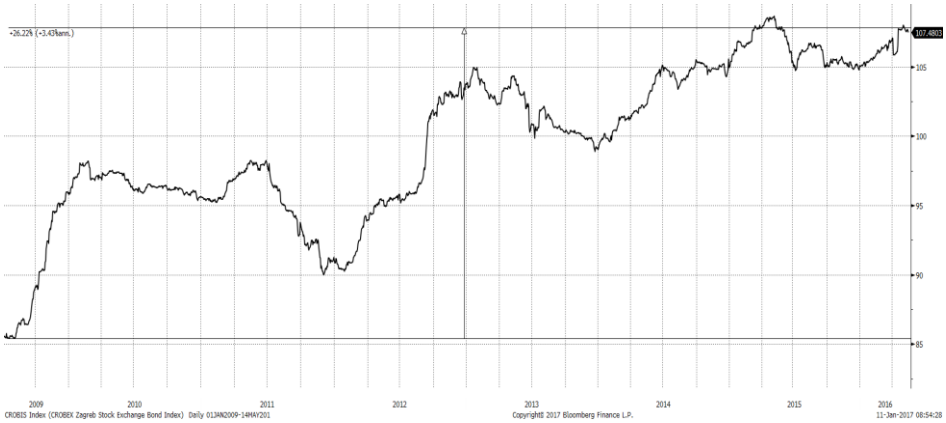

Figure 20. CROBIS [Zagreb Stock Exchange bond index], 2009–2016
Source: Zagreb stock exchange, www.zse.hr

[4] Each of index component minimum worth is 75mln € in nominal terms with maturity of at least 18 months and is revised four times a year.

[5] official share index of Zagreb stock exchange measured using free float market capitalization with limits to individual weighing

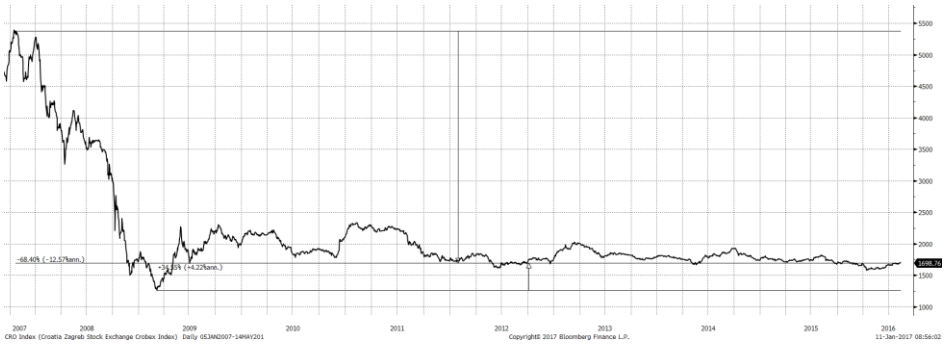

Figure 21. CROBEX [Zagreb Stock Exchange equity index], 2007–2016
Source: Zagreb stock exchange, www.zse.hr

Since 2007 peak to May 2016, CROBEX market declined 68.4% in nominal terms yielding -12.6% annual nominal return [see Figure 21]. Even if dividend payments are included the performance CROBEX return is still negative both in nominal and real terms. Although CROBEX index recovered nominally 34% from the bottom levels it was not even close to the 88% nominal return of CROBIS indexed portfolio for same period. That makes the difference even bigger than in the developed markets.

CONCLUSION

From portfolio perspective over long run traditional diversification will usually be good enough. More on diversification find in De Witt (1998). Nevertheless historical evidence shows that both real and nominal returns on different asset classes are likely to materially diverge in relation with ongoing *Saeculum*. *Saeculums* are born in process of imploding of various asset class bubbles that are formed during prolonged periods of time. In short, use of term *Secular* describes a particular valuation environment over a prolonged period. If valuations as well as selected macro variables are considered as a tool for thinking about cycles then cycles become much obvious and easily understandable. Therefore, over the long run some asset classes do better than others in terms of risk reward profile without the need for frequent portfolio rebalancing and timing of specific investment positioning within a particular asset class market. Overall level and trend in inflation, interest rates and other presented metrics can be used to determine a stage the current Saeculum is in. Current Winter Saeculum continues until major trends start to mean revert. From historical perspective we can expect mean reversion process to start as current *Saeculum* matures. From a standpoint of institutional investor here in Croatia, evidence shows institutions with portfolios overweighed on government bonds did rather well in ongoing *Winter Saeculum*. Quite contrary, there was a lot of noise in public about heavy asset allocation in Croatian government bonds from pension funds and credit institutions. More on noise in public and effects find in Neill (1963) and Reinhart and Rogoff (2009). These critics on average focus solely on credit worthiness of Croatia determined by rating agencies. Evidently, from a *Secular* perspective both pension funds and credit institutions on average — as well as other institutions which held significant local government bond market exposure — held outperforming asset class. However,

ongoing forward some structural upward pressure on local government bond yields could be expected. This is due to full implementation of EU 575/2013 Act in part of capital charge requirements related to issuer's credit worthiness, as this puts pressure on capital adequacy ratios [for credit institutions to insurers which hold Croatian government current Ba2, BB negative outlook rated bonds requiring 100% capital charge]. Therefor there is a possibility of additional supply of bonds from these institutions. This is a major issue due bonds are major portfolio component of most institutional investors in Croatia. Mean reversion of yields could take place if additional supply of bonds overcome still stable trend of inflows in Croatian bonds. Supply and demand forces will obviously be heavily determined by Croatia credit worthiness and outlook.

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