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**MACROECONOMIC INDICATORS AFFECTING
TURKEY’S EUROBOND SPREADS**

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FOREWORD

I would like to thank to my advisor Associate Professor A. Tülay YÜCEL for her valuable support during the whole process writing this thesis.

ABSTRACT

Master Thesis

Macroeconomic Indicators

Affecting Turkey's Eurobond Spreads

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This paper aims to present a proof that country specific risk factors namely some macroeconomic indicators of the country affect and shape sovereign spreads of eurobonds issued by the same country. Data is derived from Turkish Central Bank's and Banking Regulation and Supervision Agency of Turkey's data banks. In this study total debt, current account balance as a ratio of GNP, Emerging Market Bond Index, Consumer Price Index and Central Bank's Trust Index are taken as independent variables against dependent variable US Dolar denominated Turkish Eurobonds' spreads within quarters from 2000 up to end of 2005.

The analysis shows that; Except current account balance, all other independent variables have significant and theoretically expected coefficients within 10% confidence intervals.

Looking to the structure of the study; In the first chapter takes place general information about eurobonds and international bond markets. In the second chapter investigation focused on Turkey. And in the last Chapter there is the analysis connecting Turkey's eurobond spreads with country specific risk factor indicators.

Key Words: 1)Eurobond, 2)International Bond Markets, 3)International Financial Markets, 4)Financial Management

ÖZET

Yüksek Lisans Tezi

Türk Eurobond Spreadlerini Etkileyen Makroekonomik Göstergeler

Soylu PİŞKİN

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Bu çalışma ülkenin makroekonomik göstergelerinde görülebilen ülke riskinin ihraç ettiği eurobondların spreadlerini nasıl etkileyip şekillendirdiğini göstermeyi amaçlamıştır. Veriler hem Türkiye Cumhuriyet Merkez Bankası hem de Bankacılık Düzenleme ve Denetleme Kurulu’nun veri bankalarından alınmıştır. Bu çalışmada 2000 ve 2005 yılları arasında çeyrekler itibarı ile ülkenin toplam borç stoğu ve cari dengesinin gayrisafi milli hasılaya oranı, tüketici fiyat indeksi, Merkez Bankası reel kesim güven indeksi ve gelişmekte olan ülkelere ait tahvil indeksi bağımsız değişkenler olarak alınmış ve bağımlı değişken olan Türkiye Cumhuriyeti Hazinesinin USD cinsinden çıkarttığı eurobondların spreadleriyle regresyona tabi tutulmuştur.

Bu analizde, cari denge dışında tüm diğer bağımsız değişkenlerin katsayılarının teoride beklenenlerle uyumlu olduğu ve %10 güven aralığı ile kabul edilebilir olduğu gösterilmiştir.

Çalışmanın yapısına bakıldığında; İlk kısımda, euro tahviller ve uluslar arası tahvil piyasası ile ilgili genel bilgiler, ikinci kısımda Türkiye ile ilgili bilgiler ve son kısımda ise Türkiye’nin ülke riskini gösteren makroekonomik göstergelerini, çıkarttığı eurobond spreadleri ile ilişkilendiren bir yapının olduğu görülür.

Anahtar Kelimeler: 1)Euro tahvil, 2)Uluslar arası Tahvil Piyasaları, 3)Uluslar arası Finansal Piyasalar, 4)Finansal Yönetim

MACROECONOMIC INDICATORS AFFECTING TURKEY’S EUROBOND SPREADS

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Introduction

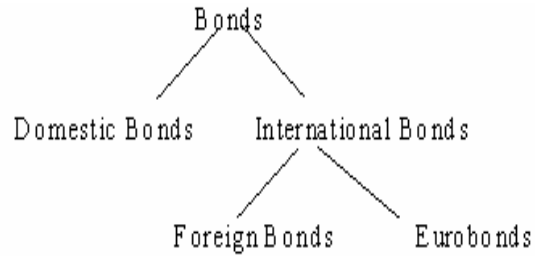
Looking for excess funds of someone else or looking for someone to lend excess funds is always at the heart of finance both in theory and practice. Investigators have created lots of ways to do it and financial institutions applied most of them except those which are impractical and costly. This is also the keystone of macroeconomics in terms of creating investments and establishing bigger economies with higher potential of employment. Nowadays through globalization of financial markets this process became a global one. Advances in communications and technology together with financial deregulation abroad have blurred the distinction between domestic and foreign financial markets. As the necessary electronic technology has been developed and the cost of transaction has plummeted, the world has become one vast, interconnected market. The globalization of financial markets has brought about an unprecedented degree of competition among key financial centers and financial institutions that has further reduced the cost of issuing new securities. Growing competition has also led to increasing deregulation of financial markets worldwide. The regulation is hastened by the process of regulatory standards and, hence, the lowest costs. In order to win back business, financial centers around the world are throwing off obsolete and costly regulations. Deregulation is little more than acknowledgement that the rules do not work.

As explained before, the principal functions of a financial market are to transfer current purchasing power from savers to borrowers in exchange for the promise of greater future purchasing power and to allocate those funds among the potential users on the basis of risk adjusted returns. The consequences of well functioning financial markets is that more and better projects get financed, and individuals are able to select their preferred time pattern of consumption. Not surprisingly, most of the major financial markets attract both investors and fund raisers from abroad. These markets are international financial markets where foreigners can both borrow and lend money. International financial markets can develop anywhere, provided that local regulations permit the market and that the potential users are attracted to it (Shapiro, 1993; 514).

Looking to this international system bonds could seem the leader financial instruments through years. Bonds from this perspective in general are one of the most common used and eldest instruments to lend some funds for some investments among people. More officially a bond is a contractual debt obligation issued by a government or corporation that will be repaid at a defined rate of interest, usually of a period of several years. So it is the basic symbols of indebttness in the financial markets for years. They are also presented as “all fixed and floating securities paying interest on regular basis except euronotes and certificates of deposits”. Comparing to other investment alternatives “bonds” in general classified as a “liquid” type of investment (Fisher, 1988; 31).

According to pre assumptions of a lot of sources (Bowe, 1988; Gallant, 1988; Fisher,1988), bonds are divided into two main groups in terms of origin of denomination type and issuing currency combined. They are simply domestic bonds and international bonds. Categorizing the “international bonds” again into two sub groups “foreign bonds” and “eurobonds” can be counted. Domestic bond issues are done with borrower’s home currency. They are issued for sale in the local market by local financial actors like government or domestic corporations. But most of the time there is nothing to stop foreign investors buying domestic bonds. On the other hand international bonds in general are those issued by actors in another currency than the currency of the home country. They are most of the time sold outside of the resident country of the borrower. They are mostly issued by private corporations or governments and known as long term investment instruments.

Figure 1: Types of Bonds



(Source: Akbank, Eurobond, Menkul Kıymet Yatırımları Hakkında Temel Bilgiler, 6)

International bond market is today an Over the Counter (OTC) market and trading take place in loosely connected individual markets that are closely tied to the corresponding domestic bond market (Ross,2004;864). But it was used in 17th Century in Netherland and in 18th Century in England especially to finance wars and to finance the monarch. Actually tight controls and sovereign structure had been present in this market until financial liberation took place with the help of development in information technologies. Later it became one of the powerful tools of governments to create funds throughout the world (Ross, Jaffe, Westerfield; 864).

Providing funds from this market or supplying funds to this market actually has two basic but powerful advantages. One of them is thanks to the huge size of the market it became possible creating cheaper funds for investors than the local market, or from the perspective of fund supplier, having wide range of investors to lend the money. The second advantage is valid both for investors and fund suppliers. This is risk allocation by investing or lending outside of country or in other words shrinking the risk by investing or supplying funds to places with less correlation with the home country.

As explained there are two main sub types of international bonds again traded in two sub markets in the international bond market. They are “foreign bonds” and “eurobonds” that will be explained in following paragraphs.

In brief, international bond market became both with foreign bond market and eurobond market one of the most generous financial markets that offer lots of options in terms of maturity, size, currency and risk aversion.

Despite of the whole attraction, international bond market requests both for investment and fund providing highly technical infrastructure and knowledge. The biggest reason of that is the differences among markets in terms of legislation, technical application and technical language used. Looking from another perspective, these differences offer arbitrage opportunities to investors and attract second market player who like price differences and try to utilize them.

The aim of the study is firstly giving theoretical information about Eurobonds as both a financing and investment tool and Eurobond market throughout the world. Later as an emerging economy, Turkey's eurobond issues and economic factors cause to exist the Eurobond market in Turkey are planned to be explained. And lastly with an analytical work, spreads as risk factor over Eurobonds issued by Turkey tried to be related to some macroeconomic factors created country risk.

From here on, firstly some detailed information is given about foreign bonds and eurobonds as sub markets of international bond market. Then importance and historical development of international bond market will be explained with a detail of Eurobond market. Providing information about advantages, structure of investors and issuers in this market, some legal concerns will be evaluated in US and UK. Later information about Eurobond market in Turkey will be explained with an extension about taxation. And lastly an analysis will be presented explaining the impact of some macroeconomic indicators on Turkish Eurobond spreads.

CHAPTER 1

INTERNATIONAL BOND MARKET AND ITS CHARACTERISTICS

Although still there are significant differences among countries in their methods and sources of finance, corporate practice appears to be converging. Most significantly, more firms are bypassing financial intermediaries, mainly commercial banks, and going directly to the financial markets for funds. The convergence of corporate financing practice largely reflects the globalization of financial markets, the inextricable linkage of financial markets worldwide. In line with this trend firms and later sovereign countries are finding that it pays to seek capital on a global basis, rather than restricting their search to any one nation or capital market (Shapiro, 1993).

In this chapter firstly sub markets of international bond market as foreign bond market and eurobond market will be explained. Later historical developments of these markets will be addressed. Then after types of eurobond issues, this market's advantages will be discussed both from the perspectives of investors and issuers. And lastly some tax considerations will be explained both in US and UK about eurobonds.

1.1. International Bond Market

1.1.1. Foreign Bonds

Foreign bonds are long term debt instruments issued by foreign borrowers (namely local governments, private or public firms) in the domestic bond market of another country, underwritten and sold exclusively by a syndicate of domestic banks in the lending country, and denominated in the currency of country of issue. (Bowe, 1988; 15) So they are issued in a currency different from the issuer's home currency but in currency whose domestic capital market is used.

In most countries investing in foreign bonds have some limitations. Especially corporate investors are not allowed to invest free proportions of their portfolios to foreign bonds. They are subject to some laws that limit the proportion invested in foreign bonds. Because they are issued according to the regulations of the country in which they are issued and in case of a default of borrower or any other legal problems they investors could not be able to begin a legal process in their home country.

Most of the time foreign bonds are known with their specific names like Samurai that are sold in Japan, Yankees that are sold in US, Bulldogs that are sold in England or Rembrandt bonds sold in Netherlands.

1.1.2. Eurobonds

Similarly, “eurobond” is a sub type of international bond category. It is defined as international debt obligation issued in one of the Eurocurrencies through an international syndicate of underwriting and selling houses which could be investment, commercial or consortium banks, or securities firms, or any other financial institution engaged in marketing and distributing external bond issues. They are principally sold in countries other than the country of the currency in that the bonds are denominated. In other words, they are bonds sold outside the country whose currency is used for denomination.

As being the fastest developing part of international bond market, two other basic features of eurobonds are being issued under the obligation of an international loan syndicate and offering simultaneously to sale in more than one country (Bowe, 1988; 13).

Each of the member organization in these syndication groups offer their share in their resident country. This second feature that being sold simultaneously in more than one country also brings another characteristic with itself. Such types of

issues are mostly mass issues. They have much more greater volumes than any other type of issue. Agents raising funds by issuing eurobonds are especially governments, multi national companies, local governments and international development banks.

Basic alternatives or rivals of eurobonds are considered as domestic bonds and foreign bonds (Seyidoglu, 1994; 700). But of course, there are some additional specific features that make eurobonds unique and naturally different from them.

First of all; eurobonds are bearer bonds. So the ownership of the bond is evidenced by the fact that you have the bond. This feature gives them the ability being more easily traded (i.e. more liquid) and the ability keeping the investor anonymous. It gives to the bondholder the opportunity to utilize interest income free of any tax purpose deduction. Secondly, eurobonds are similar in many respects to the public debt sold in domestic capital markets but with a small difference that they are almost entirely free of official regulation, but instead is self regulated by the Association International Bond Dealers (Shapiro,1993; 526). Also Gallant points these independence and anonymity features with these words “Eurobonds exist as centers of more or less unregulated financial activity, and thrive most in times of regulation and financial barriers. (Gallant, 1988; 10) In additon to disclosure freedom and free of procedures or regulation explained above, simultaneous issue feature in different countries is also known as another difference of eurobonds from foreign bonds.

Eurobond is a tax efficient way to raise funds and secracy has commanded a premium.” The financial barriers are mostly barriers applied by sovereign countries due to concerns about balance of payment. Although all public eurobonds are listed on a stock exchange, the eurobond market is essentially an over the counter market like foreign bond market. Similar to domestic bonds, eurobonds also pay interests with fixed and floating rates. In order to understand the scope of international bond market better, its importance and history must be investigated carefully with all sub markets it involves.

1.1.3. Importance and Historical Development of International Bond Market

Although today some writers like J. Orlin Grabbe argue that there is no such a unified market as “international bond market” and add that it should be considered as a set of loosely connected individual markets that are more closely tied to a corresponding domestic bond market (Grabbe, 1995; 268), there is a worldwide accepted assumption about the existence of this market in textbooks. According to this assumption international bond market has two major parts as foreign bond market and eurobond market as defined above.

Like all other markets the core of international bond market is also buyers and sellers. Sellers of these international bonds are borrowers who look for funds for their future investment projects and buyers are investors from a wide scope.

The major objective of most borrowers is to widen their potential market and thus broaden the areas from where they are able to raise funds. The importance of international bond market becomes visible at this point. Its size and flexibility ensure one of the widest distributions of securities available in the world. (Fisher, 1988; 2) Through this flexibility, lots of hybrid financing instruments like bonds, swaps, debt warrant issues become available within this market. Most probably this depth, alternative opportunities and flexibility make this market very important in financial markets and prompts borrowers with these advantages to come to the market year after year.

Again Fisher summarizes this flexibility issue with these words; “A major attraction is the wide range of financial instruments providing the combination of yield, maturity and safety best suited to their requirements. And added incentive has been the availability of multicurrency bonds which allow for foreign exchange diversification and investment where interest return may be augmented by currency appreciation” (Fisher, 1988; 2). Additionally Shapiro agree that with swap technique commonly used in eurobond market. He says “the major catalyst for growth in the eurobond market over the last few years has been the emergence of a technique known as the swap, a financial transaction in which two counterparties agree to exchange streams of payments over time. It is now estimated that 70% of eurobond

issues are “swap driven”. Swaps allow borrowers to raise money in one market and to swap one interest rate structure for another (for example from fixed to floating) or to go further and to swap principal and interest from one currency to another. These swaps allow borrowers to arbitrage their relative access to different currency markets; a borrower whose paper is much in demand in one currency can obtain a cost saving in another currency by raising money in the former and swapping the funds into the latter currency (Shapiro, 1993;528).

One of the other importance of international bond market is related with its macro characteristic. This market is important because it plays a crucial and major role in worldwide flow of capital. Such a feature brings also a political importance beside its macroeconomic importance to this market.

Looking to weight of Eurobonds in world bond market, it can be seen that a movement from 9% to 15% from mid 90's to 2002. Again according to same source yearly growth rates of Eurobond market were 21%, 15%, 15%, 11%, 19% and 10% beginning from 1997, up to report date. Indicating more clearly size of Eurobond market, USD 14 Trillion in 2002 can give an idea.

Dividing these Eurobonds according to their nominal values taking their nationalities into consideration, approximately 61.7% were US, 14.1 were Euroland, 98% was Japan and 10.6% was UK Eurobonds (Meryll Lynch; 2002).

In order to understand the development of international bond market and as the major part eurobond market, the historical development should be evaluated. Especially the Interest Equalization Tax became the cornerstone in existence of eurobonds market. In the recovery period of World War II for Europe there were strong controls and barriers against fund transfers especially in Europe. In this period US created a strong Dollar. According to sources (Fisher, 1988; Seyidoglu, 1994) this Dollar is known as reliable as gold at that time. In other words United States replaced England in terms of strength in international financial markets.

“Just as USD replaced the UK Pound Sterling as the principle international currency, New York asserted its primacy over London as the center for international

bonds. Foreign issues in New York were organized like domestic US securities offerings, with a US bondhouse or investment bank acting as lead manager and other US investment banks acting as co managers and underwriters. Often however a very major portion of these new issues, particularly those offered by Western European borrowers, were sold abroad” (Fisher, 1988; 6). This strong Dollar supply was also a good and cheap financing source for European fund seeker companies. These European companies made a lot of issues in New York Market in order to utilize from these financing source. ”and also New York Market was not only the most appropriate market to acquire funds but also it was the only market to acquire such funds from markets different than the fund seeker companies domestic markets until 60’s.” (Seyidoglu, 1994; 700) Another attraction of this market was the low transaction costs applied.

In addition to these, borrowers were attracted by openness of US market and the availability of capital and global acceptance of Dollar. But such a development resulted with Dollar outflows in high amounts from US and began the era for “Eurodollars”. This concept symbolizes the Dollars held by non US residents. These Dollars are accumulated in European banks and then let used mostly to countries in the form of syndicated loans later replaced by international bonds. As the Eurocurrency pool grew the deposits were lent out for longer periods. At first, these funds were lent as bank loans to government entities and multinational corporations to finance their investments. This was the first phase of what is now called syndicated loan market.

United States began to give at critical levels balance of payment deficits in early 60’s due to these outflow of Dollars. Outflow reached to \$ 1.2 billion in 1962 and \$ 1.5 billion in the first half of 1963 (Fisher,1988; 7). Although these outflows were money given outside as debt and for sure will come back as inflow, such back inflow amounts would be small in comparison to the continuing outward flow of international funds.

In order to prevent these high balance of payment deficits and “close New York Capital Market to borrowers from abroad” (Buckley, 2000; 559). Kennedy Government applied a tax on the foreign bond investments made by United States’

residents. Because this tax increased cost of borrowing of foreigners approximately 1%, has been called as “Interest Equalization Tax” in the history. “Actually the rate of interest equalization tax varied with maturity and was graduated from 2.75% for bonds of at least 3 years of remaining maturity, but less than 3.5 years to 15% for bonds of more than 28.5 years remaining to maturity. The 15% rate was applied to investments in common stock of foreign companies. In theory the percentages of tax applied to foreign bonds put the low interest rates prevailing in the US on an equal footing with the higher rates in Europe. It was estimated at the time that the tax raised the effective annual rate to foreign borrowers in the US market by 1 % bringing the ratio into line with borrowing costs overseas. Hence the name Interest Equalization Tax” (Fisher, 1988; 10). This tax as intended prevented US residents to buy foreign securities and naturally the capital outflow effectively. So European borrowers, especially American companies that are in need of funds in Europe, began to try new ways to acquire new funds from outside. Through this way the biggest international capital market found the opportunity to exist.

Fund seeker American companies in Europe began to sell their Dollar denominated bonds in Europe, contrary to US. They firstly sold these bonds in England and in Germany. Later also other non American companies and government agencies began to sale their Dollar denominated bonds in Europe. Although President Nixon in United States eliminated Interest Equalization Tax In US in 1974, because of their advantages this movement did not stop.

Later other strong currencies different than USD, took place in this movement and created the multi currency structure of eurobond market. The first recorded eurobond issue made in 1963 by a company dealt with aconcessionaire and operator of toll motorways in Italy. This \$ 15 million 5.5% financing of 15 years bond was guaranteed by IRI, the principal industrial and financial holding corporation of Italian State.

“A unique feature of this issue was its lead manager was a London based bank, while its co-management group was comprised of banks in Belgium, West Germany, Netherlands and Luxembourg.” (Fisher, 1988;11) Each bond was in the bearer form, worth \$250 , with an annual interest payment. “Autostrade met the

conditions necessary for the usual definition of a Eurobond: it was issued in a foreign currency for the borrower, it was syndicated internationally, for distribution outside the borrower's home country; the bonds were listed on a public exchange, in bearer form and with interest paid gross and free of any taxes." (Gallant, 1988; 12)

1.2. Types of Eurobond Issues

According to writers about eurobonds like J. Orlin Grabbe or Peter Gallant, eurobond markets can be divided and investigated in several ways. This categorization can be made in terms of currency of issue, instrument or issue conditions, type of issuer, geography, etc... But the major two categories among them are currency and issue condition or generic type.

Actually the structure of a eurobond issue will reflect the needs of the borrower, who has to temper his needs to reflect the expectations of the investors who will be buyers of the bonds; both parties have conflicting objectives and the resolution of these conflicts will depend on the state of the eurobond market at the time that the issue is made. But the issuer must try to structure an offering that will attract certain types of investors in the light of current market conditions, while reserving to himself certain safeguards if future developments make the issue unattractive to him as a borrower (Gallant, 1988; 129)

As presented above beside the requirements of borrowers, investors also base their choice on a number of specific characteristics of a bond, in selecting eurobond portfolio. They generally include currency denomination, maturity, type of income generated, credit quality, size of issue and liquidity. Currency in which a bond is denominated is an important consideration for both investors and borrowers in the eurobond market, because exchange rates are likely to vary over the life of the bond, and securities denominated in different currencies offer different rates of interest. Coming to maturity of a bond, it is another factor to which the investor gives careful consideration. There are two aspects to this question. The timing of financial

requirements and outlook for future movements in interest rate levels. Individual investors may acquire securities with funds which they intend to use for a specific purpose at future requirements, the investor can match the maturity of the investment to the time of the expected future outlay. If the investor is creating a reserve against unforeseen requirements, he will invest in instruments which may be easily sold in the secondary market. In both situations he must consider how he expects interest rates will move. As another factor; uncertainty will influence investor's decision about bond maturity. Bonds are relatively long term investments, with their rate of return fixed through to maturity at the time they are issued. No event, short of default, can alter this nominal interest return. Consequently, investors must have some confidence about the future development of the markets before investing in a bond.

Coming to type of income; an investor's return from a bond has two components. The interest coupon and the capital gain or loss and the rate at which this is payable for different types of income. Although the two returns are basically the same, one may be worth more than the other to an investor depending on his personal position. The key element here is usually the liability to tax of the investor and the rate at which this is payable for different types of income. Investors should therefore consider the type of income associated with any potential investment in the light of their own situation.

Credit quality is another key determinant of the relative terms of a bond. An investor's assessment of a borrower's ability to meet all required payments in a timely manner, influences among other things, the rate of return he demands.

Of course another and may be one of the most important factor is liquidity. The liquidity or the ease with which it can be purchased or sold without materially affecting the market price, is a major priority for investors who may wish to use invested money or adjust their portfolios prior to maturity. The liquidity of a security is related to several factors including the age and amount outstanding in an issue as well as its currency of denomination. In general, the larger the issue, the greater its liquidity. Institutional investors who normally trade in large blocks of securities, often restrict their investments to those issues which will allow them to trade their holdings without affecting the price. Liquidity is also related to the currency of an

issue. The small number of participants in relatively minor currency sectors may mean that these transactions tend to affect price. (Fisher, 1988; 39).

Finally, as explained in the first paragraph, dividing them according to generic type or namely issue conditions become the most common categorization technique taking above mentioned factors both for investors and borrowers into consideration. Eurobonds appear in a numbers of basic forms in terms of issue conditions like ordinary bonds also have. Basic ones are straight eurobonds, floating rate eurobonds, Zero coupon eurobonds, Convertible eurobonds, warrants and synthetics....Below takes place an explanation about types of them.

1.2.1. Fixed Rate Eurobonds

Straight eurobonds are conventional type eurobonds that pay a fixed interest rate or bear fixed coupon rate at a periodic intervals, usually annually. The reason for this annual payment contrary to 6 month domestic bond payment is explained as “simple reaction to the higher costs of disbursing interest payments to investors around the world” (Grabbe,1995; 274). Additionally fixed rate eurobonds are an attractive exposure management tool since known long term currency inflows can be offset with known long term outflows in the same currency.(Shapiro,1993; 533)

They are usually issued at par or at a slight discount to par. Their maturities are stretched from 3 up to 40 years. Valuation of Eurobonds are technically not different from ordinary bond valuation techniques. Their value is calculated like all other financial assets simply as the present value of cash flows the asset is expected to produce. For a standard fixed coupon payment Eurobond, the present value is calculated as;

$$V_b = \sum_{t=1}^N \frac{INT}{(1 + kd)^t} + \frac{M}{(1 + kd)^N}$$

where; k_d is eurobond's market interest rate. This is also used as the discount rate that helps to find the present value.

If there would be a semi annual payment, it would be divided into two and gets $\frac{k_d}{2}$.

N is the number of periods before the Eurobond matures. Again in case of a semi annual payment, it becomes 2.

INT is money amount of interest payment for each year. It alone represents the yearly amount and calculated as "coupon rate $\times$ par value". In case of a semi annual payment INT should also be divided into 2 in the formula. M is the par or maturity value of the Eurobond.

The value of a Eurobond can also be expressed as yield concept to compare it with similar investment alternatives. The most straightforward measure is to calculate the current yield expressed as a percentage.

$$CurrentYield = \frac{InterestPayment}{MarketPrice} \times 100$$

But contrary to its straightforward structure, it unfortunately does not take time value of money in consideration. It also does not care the whole income acquired through the life of the bond. Additionally it does not take any capital gains or losses into account.

Other yield measure is "Yield to maturity". In addition to current yield's specifications, YTM takes also the life span of Eurobond into comparison. It is generally same with k_d and its value can be derived from present value formula by picking up k_d .

Or, another way is;

$$YTM = \left[\frac{CouponRate + \left[\frac{M - Market Price}{N} \right]}{Market Price} \right] \times 100$$

Two Eurobonds with same current yield can be compared by applying the YTM formula to each of them. But again YTM consideration also does not take time value of money into consideration. There are also some shortcut formulas to convert semi annual yields to annual yields;

$$AnnualYield = \left[\left(1 + \frac{SemiannualYield}{200} \right)^2 - 1 \right] \times 100$$

And quarterly yields to annual yields;

$$AnnualYield = \left[\left(1 + \frac{QuarterlyYield}{400} \right)^4 - 1 \right] \times 100$$

Or an annual yield to semi annual yields;

$$SemiannualYield = \left[\left(1 + \frac{AnnualYield}{100} \right)^{\frac{1}{2}} - 1 \right] \times 200$$

Or an annual yield to quarter yields;

$$QuarterlyYield = \left[\left(1 + \frac{AnnualYield}{100} \right)^{\frac{1}{4}} - 1 \right] \times 400$$

Turning to floating rate Eurobond types, we come across with a different feature.

1.2.2. Floating Rate Eurobonds

In these types of bonds the coupon rate is based on a margin over a reference rate, usually an interbank rate or any LIBOR or etc... These coupons are paid mostly quarterly and half yearly basis. Their final maturities range between 5 and 15 years, but some maturities stretch out further.

They are usually issued at par in bearer form. Coupons naturally do not show an interest rate or any amount payable, they refer only the number of interest periods. As expressed the interest rate is made up of a reference rate plus a spread. Normally a minimum interest rate is specified. Any ordinary coupon payment for a floating rate Eurobond can be calculated as;

$$CouponAmount = \frac{\text{InterestRateof FloatingRateNotes} \times \text{PrincipalAmount} \times \text{Days in Period}}{360(\text{Days in year})}$$

The value of a floating rate note is dependent on the quality of the borrower and movements in short term interest rates. A simple equation to represent the price of a floating rate note for an investor switching from one investment to another is;

$$\text{Selling Price} = \frac{(\text{Current Coupon} - \text{New Coupon})}{12} \times \text{Months} + \text{Purchase Price (Usually, par)}$$

There are some common structures of floating rate Eurobonds. They are;

- Yield curve notes or reverse floaters have payments that vary with interest rates; as the reference rate increases so does the coupon, and vice versa as the reference rate declines.
- Some issues are normal floating rate notes while the reference rate is at or below a certain level, but change into reverse floaters when the benchmark is above that level.
- In some issues the first coupon has been set at a higher rate than the reference rate.
- Frequency of rate setting and coupon payment can be mismatched, with for example coupons reset on a monthly basis with a six monthly payment of the coupon.
- Most floaters have a floor, a minimum rate that would apply if the reference rate falls below a certain level.
- With capped floaters, which are much rarer than floaters with floors, coupons can not exceed a pre agreed level as long as interest rates are above that level.
- The floor of the cap may only apply for part of the life of the issue.

- Some floaters have a collar, both a floor and a cap
- Mini max floaters have very narrow collars and are not much different from a straight fixed rate bond.
- Some issues have margins that increase or step up over the life of the issue. Alternatively bonds have been issued with step down features.
- Floating rate notes have been issued with warrants, giving the holder the option to purchase fixed rate bond of the issuer with a later date. Similarly floating rate note issues are convertible into fixed rate bonds. Floating rate notes with equity warrants attached have also been issued.
- Some floating rate notes convert into fixed rate bonds for a period before final maturity.
- Some convert into a different floater in a different currency.
- Another variation allows the holder to change between different issues of the same borrower.
- A drop lock issue converts into a fixed rate bond for the remainder of life of the issue if the reference rate falls to a certain level. (Gallant, 1988; 62-63)

1.2.3. Convertible Eurobonds

They are Eurobonds that enable the holder to convert the bond into another security or asset with pre agreed conditions. Because this conversion option should have a value, their coupons are lower than a comparable straight bond.

Its usual form carries the right to convert them into equity of borrower at a premium varies between 10% and 25% over the price of equity at the time convertible Eurobond was issued.

Naturally the value of a convertible Eurobond is a function of the price of the equity that can be converted into. If the price of equity falls or increases, then the price of Eurobond falls or increases in proportion at same levels.

There is a concept derived from this conversion process. It is the “conversion ratio”.

$$\text{ConversionRatio} = \frac{\text{FaceValueofBond}}{\text{Conversion Price}}$$

By multiplying this conversion ratio by market price, the conversion value is calculated. If the market value is higher than the conversion, then the convertible is trading at a premium, if not then in discount.

1.2.4. Eurobonds with Warrants

Eurobonds with warrants are like a call option on an asset. They alternatively provide the holder the right but not the obligation under agreed conditions to buy some other asset.

It is in bearer form like all other Eurobonds. With these features a warrant limits loss and permits the holder profits if the investment rises in value.

1.2.5. Synthetic Eurobonds

They are Eurobonds created by combination of a cash instrument usually a fixed rate bond, with a transformation product such as a swap.

This produces a new instrument with quite different characteristics from the component parts. The synthetic eurobond is packaged version of an asset swap, where a fixed rate eurobond and an interest rate swap are purchased simultaneously to affect a floating rate note. This arbitrages the value of the eurobond market, where

a lack of liquidity could reduce the value of the bond, so that a high yielding fixed rate instrument can be converted into a floating rate note with much better yields than one issued by a similar issuer in the floating rate note market. Usually a bond with a bullet maturity is used giving longer certainty of income compared to the floating rate note market where most floaters are callable by the issuers. The asset swap leaves the investor with three cash flows, a swap that will be expensive to liquidate, credit considerations on the swap as well as the bond; particularly these are with two different parties; and some complex accounting issues, as the bond and the swap need different treatment. The investor has to collect the coupon on the fixed rate bond, pay the fixed rate payment into the swap and collect the floating rate payment out of the swap (Gallant, 1988, 73-74).

Turning to reasons of attractiveness and popularity of eurobonds following points become visible.

1.3 The Attractiveness of Eurobonds, Eurobond Market and The Breakdown of Investors and Issuers

Eurobond was born in an environment with restrictions and lots of regularities. So with some its specific features both for borrowers and investors it has become one of the attractive funding and investment tool in international financial markets. “The greater restriction the greater need for freedom. Eurobonds were invented when there were great restrictions on the movement of money as well as high taxation on the issuing of securities and investment income.” (Gallant, 1988; 1)

1.3.1. Advantages from the perspective of investors

One of the biggest advantages of eurobonds for investors is its tax advantage. They are free of withholding tax at source. It means the recipient of Eurobond interest just pays an income tax in case he declares his income from this instrument.

This feature nowadays is also valid for most foreign bond issues and become redundant as a basis for differentiating external bond markets. (Bowe, 1988; 18) But especially at the beginning of eurobond market this feature was a competitive feature.

Also Fisher pointed this tax advantage by these words after counting some other advantages brought with size and variability of the eurobond market. “This advantage is enhanced by the fact that, as a rule, international bonds pay interest free of all tax at source.” (Fisher, 1988; 2)

As an example by taking zero coupon eurobonds into consideration, “ the attraction of a zero coupon bond is that the appreciation in value that the instrument undergoes as its maturity approaches is not taxable, or only taxable when the bond is liquidated, and then at rates operative for capital gains rather than ordinary income tax.” (Bowe, 1988; 24) Another feature for eurobonds empower this tax advantage is that eurobonds are bearer bonds and it is easy being able not to pay taxes with bearer form eurobonds. This property especially attracts institutional investors.

Secondly eurobonds offer the anonymity of ownership. This feature is also the core of tax advantage. Because eurobonds are bearer bonds, someone who has the bond in hand, is also the owner of this eurobond. “As eurobonds are bearer instruments, there is no direct means of identifying the ultimate holders of these securities. The banks and other institutions which sell eurobonds are naturally discreet about the identity of their clients. Nevertheless, it is possible to identify the major categories of investors both through discussions with banks and institutions and through examining the characteristics which distinguish eurobonds from other instruments.” (Fisher, 1988; 31)

Thirdly, eurobond market is a big market to have choices about the size and variations of borrowing or investing. “Especially for investors, eurobonds offer opportunity to invest funds for the long term.” (Gallant, 1988; 51) It also represents rich and deep second market in eurobonds. Historically there has been a lack of depth in the eurobond secondary market. However, the growing number of institutions carrying large portfolios of eurobonds for trading purposes has increased the depth

and sophistication of this market, making it second only to the US domestic bond market in liquidity. Earlier, the liquidity of eurobonds has not mattered because investors were usually willing to purchase and lock such issues away. But because of heightened volatility in bond and currency markets, investors increasingly want assurance that they can sell eurobonds before maturity at bid ask spreads comparable to those in other capital markets. One problem is that there is no central trading floor where dealers post prices. Hence, buyers sometimes have difficulty getting price quotes on eurobonds. However many commercial banks, investment banks and securities trading firms act as market makers in a wide range of issues by quoting two way prices (buy and sell) and being prepared to deal at those prices. Another factor adding liquidity to the market is the presence of bond brokers. They act as middlemen, taking no positions themselves but transacting orders when a counterparty is found to match a buy or sell instruction. Brokers deal only with market makers and never with the ultimate investor (Shapiro, 1993; 529).

“Next to tax advantage, anonymity and depth (ie. Liquidity), they may also provide attractive opportunities to those who have only a limited choice of investment media in their nations of residence. They are also frequently available in relatively small denominations (e.g., \$ 1000 per bond) which makes them suitable for retail investment.

Also the range of currencies available in the eurobond market allows investors to diversify foreign exchange holdings. Finally there is the possibility of capital appreciation, particularly through instruments such as convertible and warrant bonds. Given these characteristics, it is easy to understand why individuals or institutions have come to dominate the market. (Fisher, 1988, 31)

There are also advantages come from multidimensionality of eurobonds. An advantage for banks and any other finance institutions having especially floating type eurobonds is that, These institutions generally lend at floating rates of interest, and it therefore makes sense to acquire funds on the same basis in order to match assets and liabilities.

Looking to a specific one “convertible eurobonds”, there are some specific reasons to find convertible eurobonds attractive. Beside its tax advantage explained above, the convertible eurobond exhibits the properties of a common stock investment with built in insurance in a falling market. If the stock price falls or fails to reach the exercise price, the investor still receives the fixed coupon on the bond, which may still be above the dividend yield of the common stock. Additionally, in the case of asset convertible eurobonds, it is also possible to convert the eurobond into other real assets like oil and gold.

In the case of currency convertible eurobonds investors are allowed to receive their principal and / or interest payment in an alternative currency. In this respect they possess similar properties to an ordinary bond issue with a forward contract (Bowe, 1988; 26).

Another form of eurobonds that offer advantages to issuer and investor is eurowarrants. They are theoretically dated call options. They are convertible into equity and other types of bonds. With all of their properties they also offer advantages especially for investors, but also for issuers. First of all they give the right to purchase the stock of the issuer at a pre specified price over a given period, normally five years. Secondly, they possess two assets that can be traded separately, as the warrant can be exercised without having to redeem the bond to which it is attached.

Thirdly, they are not as exposed as if they had simply invested in equity. Even if the intrinsic value of the warrant falls to zero, given the assets have a life time of five to seven years, a correction in the market could appreciate the underlying stock price, and the warrant value would rise with it.

Fourthly, a eurowarrant possesses high gearing. It is defined as the ratio of the cost of warrant to the cost of stock that the warrant entitles its holder to purchase. Next, as over 70 % of all warrant issues are launched by Japanese corporations. So, it is provided cheap access to the Tokyo Stock Market. Moreover, as most issues are backed by guarantees from Japanese city banks, that were all AAA rated.

And lastly they have the advantage over the convertibles that conversion can not be forced by having the bond called.

To sum up, advantages of Eurobonds from the perspective of investors; Eurobonds are issued in such a form that interest can be paid free of income or withholding taxes of the borrowing countries. Also the bonds are issued in bearer form and hold outside the investors country, enabling the investor to evade domestic income tax. Additionally issuers of Eurobonds have mostly an excellent reputation for creditworthiness. Most of the borrowers, governments, international organizations or large multinational companies have first class reputation. So, the market is a very secure one. Lastly this market is an active market both as primary and secondary market. Eurobonds are traded over the counter both locally and internationally by financial institutions that are ready to buy or sell Eurobonds for their own accounts or on behalf of their clients. So it is a very liquid market. (Buckley, 2000; 566)

1.3.2. Advantages from the Perspective of Issuers

Beside the advantages for investors, Eurobond market still carry advantages for Eurobond issuers. First of all government regulation makes domestic bond issues much more time consuming to the market as months. In contrast Eurobond issues float in a matter of weeks. In addition to that; since legal requirements are lower and no prospectus is needed to be printed Eurobond issuing is less expensive than issuing domestic bonds (Menguturk, 1995; 259). Also Bowe approaches this cost matter from a different perspective giving Eurobonds with warrants as an example.

Firstly the coupon rate on eurobonds with warrants has historically been very low. Secondly the issuing company will receive some cash for newly issued shares, in contrast to convertibles where the company just receives outstanding fixed rate securities. This arises from the gearing feature of warrants; the value of warrant is

always less than the price at which the corporation guarantees to issue new stock to the warrant holder (Bowe, 1988; 30).

In brief, next to tax advantage, and investment size and variability advantages to investors, this market provides such a great variability and size that offers high diversification opportunities in long term financing for borrowers.

Also some types of them bring another advantages. Especially convertible ones' advantages outweigh others. From the perspective of issuer the coupon attached to a convertible eurobond is lower than that which would be required on comparable straight debt bonds because of the possibility that the investor may benefit from an appreciation in the stock price above the exercise price.

Secondly, the issuance of convertible eurobonds is one mechanism whereby corporations may internationalize the ownership of their stock. Next, convertible eurobond issues are more easily marketable than straight issues, especially among inflation conscious institutional investors. Moreover many institutions that are forbidden from holding equity directly may use equity convertible issues to play these markets. They are able to adhere to their investment guidelines by trading out of the issue prior the conversion.

And lastly corporations can usually increase the amount of an issue when it has a convertible option. Moreover some corporations whose size or gearing is such that they would have great difficulty in making a straight bond issue may still be able to raise funds in the eurobond market by means of a suitable structured convertible.

Additionally again for borrowers this market is still a mark of prestige in international community and great flexibility provided by available types of issues. And lastly especially through the interest of institutional borrowers and investors it is a deep, liquid and safe market that always offer buying and selling opportunities to both parties. (Fisher, 1988; 32)

In conclusion Eurobond market is a deep market with the capacity to absorb large and frequent issues. Secondly, because of flexibility and freedom, issuing techniques make it possible to bypass restrictions such as requirements of official

authorization, queuing arrangements, formal disclosure, exchange listing obligations and so forth, which govern the issue of securities by domestic and foreign borrowers in individual national markets. Additionally cost of issue of Eurobonds at an average less than 2.5% of the face value of issue, is relatively low. And lastly it is possible with Eurobonds providing long term funding requirements. Maturities may reach to 30 years. (Buckley, 2000; 566)

1.3.3. Breakdown and Features of Borrowers and Issuers

Because eurobonds are bearer instruments it is not so easy to determine exactly identity of investors. As Bowe declared in his book it has major two reasons: “Despite some laudable attempts at unveiling the mystery any attempt to formulate the profile of the typical eurobond investor must incorporate a large element of speculation. This is a result of two factors. First, the professional discretion of the participated banks, which prevents houses from disclosing their customers’ affairs, is combined with a basic desire for self- preservation and a need to protect their client base against the predatory intentions of their competitors. Second there is a natural anonymity given to investors as a result of the market’s institutional arrangements” (Bowe, 1988; 55).

It is just possible to categorize these investors in major groups according to some specifications of Eurobonds in general. First of all, an investment made in international market is always more complex than made in domestic market. Thus; “If no other reason than the need to understand the different market practices and conventions, fees, commissions, government regulations and settlement procedures, that will apply.” (Gallant, 1988; 180)

So these people should be technically mature first of all to overcome these complex structure. Then they can enjoy tax advantage, anonymity of ownership and other advantages of eurobonds. And they could also be in a position to be attracted

from different opportunities due to limited choice of investment media in their national residence.

Additionally it can be said that they are also people take part in the retail investment activities, because as previously indicated eurobonds are also available in relatively small denominations like \$ 1000 per bond. In other words small investors could also be eurobond investors.

A eurobond investor is also a man who accept some additional risks beside advantages and options available counted above. As said, “A eurobond buyer is by definition an international, probably cross border investor, who has to be prepared to accept a greater number of risks than someone who invests only in his local market.

The main risks are; economic risks that represents the possibility of an unexpected economic event like an unexpected rate of inflation, political risk that is related with politics of bond issuer country or also his own country, credit risk that means the ability of borrower not to pay the principal and interest on the bond, currency risk that represents any unexpected unfavorable exchange rate movement between currencies of related parties and market risk which is the relationship between the price of the bond and movements in prices in the market.”(Gallant, 1988;180) These risks and more will be explained in following chapters in detail.

1.3.4. How Eurobonds are Issued

Coming to the process how a Eurobond is issued, it takes a more simple procedure compared to domestic bond issues. But it should not mean that this procedure is free from regulations of any organization. Eurobonds are issued and sold through underwriting syndicates. Participants of these syndicates are investment banks and the merchant bank subsidiaries of commercial banks. This procedure usually takes several stages.

First of all the fund raiser namely a company, a government, a bank or an organization invites an investment bank to become the lead manager of the eurobond issue. Later the lead manager would invite an additional group of banks to assist in negotiating terms with the borrower in assessing the market, in organizing and

managing the issue. This group of banks including the lead manager is called the managing group. After negotiation the borrower sells its bonds to managing group. Managing banks in turn sell the bonds to other banks, who are divided into underwriters and sellers. The underwriting and selling banks in turn sell the bonds to dealers and final investors. Underwriting banks are distinguished from ordinary sellers in that they are committed to buy the bonds at a preagreed price even if the bonds can not be sold at a higher price on the market. The managing banks themselves also act as underwriters and sellers. The principal paying agent on eurobond issue is the bank that has the responsibility for receiving interest and principal payments from the borrower and disbursing them to end investors in any legal action arising from defaults (Menguturk, 1995; 259).

Coming to the fee side about Eurobonds, borrower pays the lead manager a fee that is usually split into two parts, a management and underwriting fee shared by the managers and underwriters, and a selling concession, a percentage of the value of the security.

All fees are negotiable and vary depending on the quality of name of the borrower, as well as market conditions; The poorer the conditions then the weaker will be the borrower's ability to keep fees down. The management fee includes a *praecipium* (technical name of a commission in Euromarket) for the lead manager, to compensate him for the organization of the issue, management of the syndicate and the preparation of documentation.

The selling concession can be used to provide a discount to other professionals in the market, to induce them to sell the bonds to their customers. The difference therefore between the classical, open priced deal and the pre priced or bought deals are usually the number of participants.

In the classical form the risks were shared over a much wider group of participants. The value of fees are only realized when the bonds are sold to the underwriters' clients. The underwriter will be trying to sell the bonds at as high a price as possible. The lead manager has a lower break even price than the other members of the syndicate. He therefore has a pricing advantage if he is prepared to forgo his fees in return for the sale of the bonds; in practice the lead manager will need the fees if he has to support or stabilize the price of the issue in the primary market.

Stabilization takes place during the three or four weeks after allotment of the bonds to the syndicate; at their own cost the lead, co lead and co managers take long or short positions in the issue to keep the price trading in a steady range.

Normally the lead manager retains a pricing advantage with the lower break even price than the co managers, but all members of the syndicate are better off in the classical structure than in the bought deal due to increased commitments and risks that are now being undertaken by each participant.

To be realized all the procedure healthy a timetable is required. When the lead manager has been awarded the mandate, the lead manager will draw up a timetable, based on three main events as the announcement day, the period of time for discussion between lead manager and borrower is often compressed to a few hours. A general timetable is presented below for demonstration purpose. It gives details of duties and events from perspectives of lead manager, syndicate and other parties. The speed of the process to some extent depends on how well the borrower is known by potential investors. A well known borrower may not need a full prospectus, and the syndicate members would be able to gauge demand quickly. Investors may need a lot of persuasion before they will buy bonds issued by a less well known borrower, who may need to prepare special information or hold meetings with the larger investors. (Gallant,1993; 139)

Table 1: Timetable for a New Eurobond Issue

Timetable for a New Eurobond Issue				
Day	Event	Lead Manager	Syndicate	Other
-10		Borrower discusses terms with the lead manager. Documentation drafted. Seeks any regulatory approvals needed.		Paying agent, trustee and listing agent selected.
1	Announcement Day. Start of the Subscription Period.	Invites managers circulating a preliminary prospectus and underwriting agreements. Press announcements released.	Receive offer to join the syndicate the Selling group formed.	Selling begins and grey market starts. Stock exchange listing applied for.
4		May offer the syndicate protection by guaranteeing a minimum allotment.	Accept offer.	
12	End of the subscription period.	Final terms agreed including pricing.		Reconfirm acceptance of final terms.
13		Manager's agreement and Subscription agreement signed between syndicate and borrower		
14	Offering Day	Advises final terms, syndicate allotments and stabilisation payment instructions. Circulates final prospectus. Finalises listing of the issue.		Advise clients of final terms.
25	Closing Day	All members of the syndicate forward payment for their subscription.		Primary market closes, listing on stock exchange obtained.
27		Documentation finalized		Trust deed signed
90				Bearer bonds can be collected from paying agent.

(Source: Gallant, 1993; 140)

1.4. Some Legal Concerns about Eurobonds

Borrowers and investors in eurobonds are subject to some laws and regulations in US and UK relating to;

- withholding tax on interest payments;
- instrument duties;
- income tax;
- disclosure and prospectus requirements; and
- sales restrictions.

The important legal considerations for the professional participants and for the eurobond instruments, relate

- to the possibility that the bonds are eventually distributed to residents of the US.;
- to London as the main financial center for the sale and trading of bonds.

The effect of the first consideration is to make the market subject to terms of the US Securities Act of 1933 and Federal income tax regulations. The effect of second is to invoke certain aspects of English law.

There are two features which have become fundamental characteristics of all eurobond issues;

- the securities issued are bearer bonds rather than registered bonds,

- interest and principal payments on eurobonds are not subject at source in the country where the issuer is the resident for tax purposes.

As these factors play a major role in determining the attractiveness of various debt financing strategies, it is important to consider the pertinent tax advantages eurobond issues hold for borrowers and investors.

Turning to tax considerations in general eurobond issues, payments to interest and principal on eurobonds are not subject to any withholding tax at source in the country where the borrower is deemed resident for tax purposes has been of paramount importance to the attractiveness of the eurobond market as an institutional mechanism for raising debt capital. The tax advantages to an investor from the absence of withholding tax combined with the bearer form of eurobond issues are substantial.

Absence of withholding taxes also confers benefits upon the issuer of the bond offering. For an issue subject to withholding tax requirements the borrower, in order to make the terms of the issue competitive with others in the market, would be required to increase the amount of reimbursement to the foreign investor to cover the cost of the withholding tax. Now related UK and US legislations can be investigated after these broad considerations.

1.4.1 UK Legislation

Eurobonds issued by UK corporations: tax on issuer

Under UK law, if interest on a eurobond issue is paid by a UK resident company (or paying agent) it must withhold the payment for income tax at the base rate and account for it to the inland revenue (Section 54, Taxes act 1970). There are several considerations to keep in mind in this context.

- The withholding tax obligation arises only with interest paid annually, not “short” interest.
- The withholding tax requirement does not apply to interest that is;

Payable in the UK on an advance from a bank carrying on a bonafide working activity in the UK or; Paid by such a bank in the ordinary course of that business.

- Where a double tax treaty applies to exempt a non UK resident from UK tax, the withholding obligation may be circumvented.

It would seem that the relevant withholding taxes can create problems for UK resident companies wishing to raise debt finance through the issuance of eurobonds. To some extent the difficulties are overcome by the provisions of Section 34 of the 1984 Finance Act, which stipulates that there will be no withholding tax on a “quoted eurobond” where,

- the individual who makes the payment is not resident in the UK; or, if this not apply,
- the person who is the beneficial owner of the quoted eurobond and entitled to the interest is not resident in the UK, or the quoted eurobond is held in a clearing system recognized by the Board of Inland Revenue. Both Euroclear and CEDEL are designated clearing systems.

A quoted eurobond is simply a security in bearer form, paying interest, issued by a corporation and listed on a recognized stock exchange, which for purposes of the act, include London and Luxembourg. For practical purposes, bonds are designated as bearer when they are dealt with on a book entry system, provided that an interest bearing global note is issued.

UK issuers of eurobonds, in normal circumstances, will maintain a main paying agent in the UK and are obliged to do so if the eurobonds are listed on the London Stock Exchange. They will also maintain sub paying agents outside the UK. Payments from issuer to paying agent and sub paying agent are generally paid gross. Most eurobond offerings include terms that provide for grossing up payments in certain circumstances in the event of a withholding tax problem ensuing.

Withholding Tax Payments by UK Paying Agents

UK Resident Eurobond Issues

UK paying agents are normally obliged to deduct income tax at base rate on payments of interest on securities issued by UK resident companies. This provision encompasses interest disbursement to non UK resident as well as those made to UK residents. However interest payments on such securities may be made without tax deductions where the security is a quoted eurobond for the purposes of section 35 of the Finance Act 1984, and where the conditions outlined above are satisfied. Interest is also not deductible if it is “short” interest (i.e. the security has a maturity of less than one year) or the paying agent has been authorized to pay without deducting tax pursuant to a claim made by the recipient under an applicable double tax treaty.

Non UK Resident Eurobond Issues

Normal practice requires a UK paying agent to account to the inland revenue for an amount equal to basic rate income tax on foreign dividends. (i.e. dividends and interest paid in respect of the shares and securities of a company not resident in the UK.), if payment is to be made to a UK resident. No deduction of tax, however, is required with respect to such dividends where;

- the payments arise from shares or securities held in a “recognized clearing system”, such as Euroclear and CEDEL; or
- the person owning the securities is not resident in the UK.

Moreover, even if these conditions do not apply, the inland revenue in the UK normally allows payment of foreign dividends by UK paying agents without deductions of tax where, broadly;

- subject to certain conditions, payment is made directly to an address outside the UK; or
- the recipient has claimed an exemption from UK taxation under an applicable double tax treaty; or
- the principal paying agent in the UK transfers funds which are to be used for the payment of foreign dividends or interest to a sub paying agent in the UK or abroad.

Turning to US Tax legislation about eurobonds it can be observed that it had been built on some regulatory foundations from mid 80's.

1.4.2. US Legislation

Turning to US side about taxation of eurobonds, it can be seen a much more simple and very liberal market compared to British one. Until 1984 when there was an actively applied withholding tax for interest paid to foreigners, this system has not being functioned due to several exemptions. In other words, there is no withholding tax for interest income acquired from Eurobonds for a non resident alien.

Turning to US citizens, the picture of course changes. A US citizen is in normal conditions subject to withholding tax. This occurs because the income of a non resident alien can not effectively connected with conduct of a US trade or business. So it is not proper to tax such an income that was not born with direct relationship with US economic cycle.

As indicated before, this system is created intentionally to attract foreign funds into US. In fact looking to general legislation there is a general 30% withholding tax for a non resident alien's interest income. But the general rule concerning the taxation of interest income is not applied for several types of interests that can be counted as exemptions and chosen by the US Congress. They are portfolio interest income and income acquired from US bank deposits. These two types of income creates a huge part and are free from any withholding tax for non US resident foreigners.

Actually these exemptions make US an informal tax haven that allow non residents to lend massive amounts of capital to US persons without paying any US taxes on the resulting interest income.

Here especially portfolio interest exemption covers interest income acquired from eurobond market. This exemption enable US corporations to participate directly into eurobond market as an attractive actor. In case of absence of this exemption situation of US firms would be very difficult to raise funds in this market.

CHAPTER 2

EUROBOND MARKET IN TURKEY

Within this chapter firstly eurobond market in Turkey will be explained given a picture to describe its position in emerging market economies. Basically size of eurobond market in Turkey, and reasons of issuing eurobonds with connection with economic crisis and external debt requirements. Later tax dimension of eurobonds will be evaluated. But firstly risks will be explained to clarify the safety concept in interest paying securities. Because it is an important concept to understand the advantages and disadvantages or in other words difficulties or opportunities from the perspective of both borrowers and investors especially in Turkey.

Within this concept safety means the pay back probability of capital invested into this instrument. Then comes other environmental risks such as change in some macroeconomic indicators like interest rates or exchange rates in this country. The payback probability is another name of credibility of issuer. Credibility depends on high numbers of factors but firstly the willingness, financial strength and debt history of issuer can be counted as important ones. Coming to environmental risks, they could be also as important as the first factor “credibility” of issuer. Thus conjuncture risk is one of the basic risks for global markets, especially for Turkey. Because Turkey with its dynamique economic environment, has always very sharp and unestimated movements in its macroeconomic indicators. Naturally it causes to rise conjunctural risk in Turkey. Secondly comes inflation risk. Inflation risk arises due to depreciation of investment currency. So a loss could be realized if purchasing power of this currency falls. Both the capital and the interest income can be subject to this risk. Of course in a country like Turkey this risk also must be counted important.

Other ones are the country risk and transfer risk together. To face these risks the issuer must not be in short to meet its obligations. Although the issuer could be financially healthy, the resident country of the issuer may have problems in transfers

of funds. And such a problem may cause a risk for investor to acquire both the capital and interest gains in time. These problems could be both economical and political. In such an extreme, it could be also a risk to be paid your money with a no more convertible currency. Country ratings published by organizations may be the main guides to overcome such a risk.

Coming to currency risk, it represents the loss probability in securities issued in a foreign exchange in case changes in FX rate. And Turkey can be included into the risky category with high rates devaluations and economic crisis in its history.

Another one is interest rate risk as one of the basic risks arising from the nature of securities paying interest. As known interest rate in the market can vary from time to time due to unpredictable structure of market for the future. As interest rates change, the value of securities also change inverse to interest rates. This is known as interest rate risk and should be taken into consideration for emerging structured economies as Turkey. Because functions in such countries may be much more higher in interest rates than those in mature markets.

Turning to liquidity risk, it pictures the ability to convert the security into money as soon as possible. The main risk arises here because of the time gap between the decision and having an actual liquidity position. Because during that time value of the portfolio can change considerably due to strong fluctuations both in exchange rate and interest rate.

Investor and issuer must also take taxation risk into consideration. An unpredictable fiscal system can create unpredictable taxes over the portfolio. So the net value of securities, as the tax deducted one, may change dramatically.

In order to measure these risks globally and publish these results or grades, some companies became very famous thorough the world. As known Standard & Poors and Moody's are two leader ones in grading financial actors and also financial instruments as bonds. Below takes place similar grading tables of Standard & Poors and Moody's by giving explanations of the grades. Actually these grades are

important to acquire standardization in grading globally. This global standard is the keystone of success for those two companies.

Although according to some writers as Gallant (Gallant, 1993; 107), rating is not a recommendation to buy or sell a particular security, and they can not take into account the price or market conditions that may affect the value of security, in directly presents the country risk in sovereign bonds or the corporate risk of a company. In other words today is rating the most reliable and preferred criterion according to investors.

Table 2: Rating Symbols of S&P and Moody's.

Rating Symbols of Standard Poor's and Moody's		
	S&P	Moody's
Very good credibility		
Highest quality and lowest risk	Aaa	AAA
	Aa1	AA+
	Aa2	AA
	Aa3	AA-
Good Credibility		
Good quality with very good investment features but there are some risks related with changing market conditions	A1	A+
	A2	A+
	A3	A-
Medium quality with missing safety against changing economic factors.	Baa1	BBB+
	Baa2	BBB
	Baa3	BBB-
Speculative Credibility		
Speculative Credibility requires some middle density safety	Ba1	BB+
	Ba2	BB
	Ba3	BB-
Default probability with low expectation as long term investment tool.	B1	B+
	B2	B
	B3	B-
Junk Class		
Lowest quality with high interest rate and highest risk	Caa	CCC
	Ca	CC
	C	C

(Source: Akbank T.A.S. Almanya Teşkilatı,2003;6)

After the above presented general information table Turkey's country ratings could be helpful.

Table:3 Turkey's Rating History

MOODY'S			S&P			FITCH			JCR		
Date	Rating		Date	Rating		Date	Rating		Date	Rating	
27.06.2006	BB-	stable	14.12.2005	Ba3	stable	06.12.2005	BB-	positive	10.03.2005	BB-	positive
23.01.2006	BB-	positive	11.02.2005	B1	positive	13.01.2005	BB-	stable	12.03.2004	B+	positive
17.08.2004	BB-	stable	31.12.2003	B1	stable	25.08.2004	B+	positive	31.12.2003	B+	positive
08.03.2004	B+	positive	10.07.2002	B1	stable	09.02.2004	B+	stable	12.07.2002	B+	positive
31.12.2003	B+	stable	15.01.2002	B1	stable	31.12.2003	B	positive	01.03.2002	B+	stable
07.11.2002	B-	stable	06.04.2001	B1	negative	25.03.2003	B-	stable	18.07.2001	B+	negative
09.07.2002	B-	negative	21.02.2001	B1	stable	05.02.2002	B	negative	20.04.2001	BB-	negative
26.06.2002	B-	stable	21.12.2000	B1	positive	02.08.2001	B	negative	07.03.2001	BB	stable
29.01.2002	B-	positive	24.07.2000	B1	positive	02.04.2001	B+	negative	28.01.2000	BB+	stable
30.11.2001	B-	stable	30.11.1999	B1	positive	22.02.2001	BB-	negative			
11.07.2001	B-	negative				27.04.2000	BB-	stable			
27.04.2001	B-	stable				10.04.2000	B+	positive			
16.04.2001	B-	negative									
23.02.2001	B	negative									
21.02.2001	B+	negative									
05.12.2000	B+	stable									
25.04.2000	B+	positive									
10.12.1999	B	positive									
21.01.1999	B	stable									

(Source: Undersecretariat of Treasury of Turkey, www.hazine.gov.tr)

Above is country ratings of Turkey for foreign exchange borrowings in 2000's. In addition to Moody's and S&P there are still two other companies' ratings about Turkey. Although symbols differ from company to company it is possible from the above table to get an idea about Turkey and eurobonds issued by Turkey. As seen, Turkey has in general increase in ratings from speculative credibility to good credibility from beginning of 2000's up to year 2006.

Giving these basic risks about financial instruments and grading tables, Turkey could be understood better. So now in the following part, statistical data will be given about Turkey before Tax considerations will be explained later.

2.1. Volume of Eurobond Market in Turkey

Similar to many other developing countries at the time Turkey opened up its financial account in 1989, with the hope of attracting foreign funds to finance the borrowing requirement of public sector, that would reduce the prevailing high interest rate and decrease crowding out in private investment. However 90's were plagued by frequent capital reversals, high rate inflation, high real interest rate and volatile real GDP growth rate.

Within that time Turkey experienced two balance of payment crisis in 1994 and 2001. Later continued fiscal discipline and the pick up in capital inflows based on the market perception that Turkey has become a convergence economy and lower inflation rates have helped bring down bond yields.(Alper, Cigerli; 2005) Also together with liberalization of financial account Turkey began to attract foreign funds and initialized eurobonds issues in 10 May 1988 with a Deutsche Mark denominated Serie.

Later an international bond market was established and these eurobonds began to be traded there beginning from 24 February 1997 (Istanbul Stock Exchange 2006 Yearly Report).

Turkey's eurobond market developed a lot from that time. Giving a global perspective about today's Turkish Eurobonds compared with emerging markets' ones; Erste Bank Germany's 2006 report could be beneficial;

According to that report, Turkish Eurobonds are in "a world apart" category differing from other fully developed and emerging categories with characteristics of having a large domestic market, traditionally more limited access for foreign investors and convertibility compared to other groups. (Leobacher, 2006;17) Additionally Turkish Eurobonds also have much higher returns and also naturally spreads different from countries like Poland, Slovak Republic, Czech Republic, Croatia, Hungary, Russia, Romania with similar macroeconomic characteristics. It represents that there is still lack of trust about Turkey's financial credibility even if the country shows similar macroeconomic performances as its class mates.

To point out the position of Turkey better from the perspective of Eurobonds, the size of emerging markets' eurobond volumes can be compared,

To present volume of eurobond market in developing countries in which Turkey also takes place, EMTA's (Emerging Market Debt Industry's Trading Association) 2005's third quarter report can act as a guide.

According to that report just in 2nd and 3rd quarters of 2005, emerging markets' eurobond trading volume reached to USD 638 Billion and USD 635 Billion respectively. It is also reported that eurobonds counted for a 48% share of reported emerging market debt trading. Within the same time period, namely 3rd quarter the year 2005, Turkey's eurobond trade volume is the second one with USD 58 Billion next to Brazilian Eurobonds with USD 263 Billion, Russia Eurobonds with USD 57 Billion, Venezuela with USD 45 Billion and Mexico with USD 35 Billion. (EMTA, 2005; 42).

Also from a domestic perspective, Turkish Eurobonds are thought approximately having a nominal value of \$ 27 Billions as of mid 2004. Additionally \$ 12.6 Billions from this amount, or in other words 46,7% of that amount have been owned by Turkish citizens showing that what a great interest domestic investors have for these Eurobonds in Turkey. Categorizing this amount from another perspective, \$ 3.18 Billion belong to non banking sector and \$ 2.5 Billion of that \$ 3.18 Billion amount belong to investors with a real personality. In other words they are not corporations.

Evaluating this eurobond stock according to currency in which they were issued US Dollars come in the first place. Then with their weights Euro, Japanese Yen, Swiss Franc are counted respectively. (BDDK,2004;56)

Basically the need of using this financial instrument emerges from financing requirement mostly occurred due to financial crisis Turkey faced several times within its history. To understand this requirement, it is better to investigate crisis Turkey experienced.

Turkey's experiences with economic crisis could be extended with the life of Turkish Republic beginning from establishment of the republic up to 21th Century. According to the economic report written by Ankara Chamber of Trade, Turkey faced 15 economic crisis from Great Depression in 1929 till today. The heaviest ones from these were of course ones happened in 90's and in 2001. Turkish economy shrinked 6.1% in 1994, 6.1 % in 1999 and 9.5 % in 2001. Although the beginning or the causes of these crisis could be different, they all brought shrinking in the economy and dependence to foreign funds. At the end, Turkey always have become the victim of increasing interest rates and provided funds become enough just to finance interests of previous ones.

Giving an example 94 Crisis was a short lasted but a deep crisis. The trigger of the crisis was unstability in European Money Market. The current account deficit increased from \$ 1 Billion up to \$ 6.4 Billion. Foreign debt stock got \$ 12 Billion more than pre crisis period. As a result total capital outflow became \$ 4.2 Billion. Inflation reached to very high levels. Wholesale Price Index became 121% and Producer's Price Index became 106%. Additionally more dramatic changes were observed in interest rates of government bonds with 400% and unemployment rate with 20%.

Similarly in 1999 both crisis spending in Asia and Russia triggered the economy for a crisis. It is calculated that the capital outflow reached to \$ 6.1 Billion just within this year. As an inflationary indicator, Producer's Price Index became 63% but the most dramatic one becomes real interest rates with 32%. Accordingly, the government at that time signed a stand by contract with IMF and unintentionally let began an economic process that would bring the country to the most serious economic depression throughout its history.

In 2001 current account deficit became \$ 9.8 Billion, Due to fixed exchange rate system short term debts reached to \$ 28.9 Billion and total external debt reached to \$ 114.3 Billion. Because of the back called external loans a panic outflow began and interest rates saw unreasonably high levels. In this crisis most dramatic effect was in exchange rate. TL/\$ rate was 670,000 in November 2000 and got 1,670,000 in April 2001.

As seen above and in article of Erinc Yeldan dated 24 May 2006, Turkey experienced all the time crisis due to bad current account balance as a result of overvalued domestic currency and increased imports. All the time these current account deficits were financed by external debt. So, the external debt stock climbed from \$ 113.6 Billion to \$ 170 Billion from 2001 to mid 2006.

As seen Eurobond issues actually were the financing tools of deficits Turkey got due to economic crisis in its economy. Looking at funds used to finance deficits due to crisis show a common characteristic that is being external debts, because of some economic reasons.

As known one of the major reasons of ever lasting inflation in Turkey is expected as high fiscal deficits. Interest payments of huge domestic debt stock used to close these deficits have caused to widen budget deficits and together with other structural disorders played an important role to make high inflation continuous.

Therefore, the stabilization programs planned or used by Turkey was built with an aim to break this inflationary cycle. As a result, a substitution of domestic debt stock with external debt is aimed. So the international capital markets became one of the important finance tools for Turkish Economy.

Table 4: Outstanding External Debt Profile and Outstanding Bond Stock of Turkey

OUTSTANDING EXTERNAL DEBT PROFILE in USD Millions											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
TOTAL	79,396	84,234	96,264	103,125	118,503	113,592	129,701	144,260	160,789	168,808	206,470
SHORT TERM	17,072	17,691	20,774	22,921	28,301	16,403	16,424	23,013	31,890	37,103	41,960
LONG TERM	62,314	66,543	75,490	80,204	90,202	97,189	113,277	121,247	128,909	131,705	164,480

OUTSTANDING BOND STOCK OF TURKEY (in USD Millions)											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
GROSS EXTERNAL BOND STOCK	13,187	13,826	14,104	16,915	21,828	21,031	23,595	27,112	30,079	31,560	36,347
EUROBONDS	7,216	8,803	9,525	10,804	12,206	12,096	12,655	13,417	13,929	11,760	12,863

(Source: www.hazine.gov.tr)

This substitution process from domestic sources to external ones can also be seen in article of Mahfi Egilmez about the crisis in November 2000. In the article the new IMF stand by economic program for Turkey about to enter into a hyperinflation process in 2000 is explained. Accordingly this program has three foundations. The first one was providing fiscal discipline in both in budget and out budget public expenditures. The second one was a crawling peg type fixed exchange rate regime. And the last one was structural reforms to be done. Within the scope of first matter primary surplus is expected to increase and domestic debt stock and related interest expenses are expected to decrease by expanding tax incomes. To support this process, external debts would substitute domestic ones. In addition to things explained above, crisis – external debt relation is actually a double dimensional relationship. It means that accumulation of foreign debt is both a reason for a crisis and a result of it. In other words, external debt stock from one point of view triggers crisis as a risk factor, on the other hand this stock constantly have been raising items that cause accumulation in this stock. (Prof Dr. Gulden Kazgan 25Sept. 2002, 1923 den beri Turkiye de krizler nedenleri, etkileri ve ekonomi politikolari sempozyumu)

As a result, foreign debt has always been present both as reason and result within the concept of crisis Turkey has faced. So eurobonds issued by Turkey should be considered within this concept. As seen from the table presented above, outstanding external debt profile both in short and long run expresses a slight but permanent increase between this 10 years time interval.

In total, sharpest increases meet with crisis periods experienced in Turkey. For example, especially increases between 1999 – 2000, 2001 – 2002 and 2005 – 2006 seem as extreme ones with 14% or higher.

Again in this outstanding external debt table, it can be recognized that long term debt stock is always higher than short term debt stock. Although total debt stock is not low, this feature makes debt profile more compatible and strong against short term financing problems.

Investigating the table from the perspective of nominal values, total outstanding external debt stock had increased from USD Billions 79 to 206. In detail, short term debt increased from USD Billions 17 to 41,9 and long term debt reached to USD Billions 164,48 from USD Billions 62.

Accordingly, investigating yearly basis Long Term / Short Term debt ratio, it always changes between 3,5 to 7 independent from crisis periods and shows a balanced pattern.

Next, in other table presenting outstanding bond stock of Turkey, it can be seen that gross external bond stock increased from USD Billions 13 to USD Billions 36,5 within 1996 – 2006 period.

Looking to eurobond weight within total outstanding bond stock, it seems approximately 50% till 2004 and began a slight decrease up to 30% until 2006.

2.2. Tax Considerations of Eurobond Market in Turkey

Observing eurobond taxation in Turkey 3 different types of Eurobonds appear in terms of their issuing periods. They are eurobonds issued before 26/07/2001, between 26/07/2001 and 31/12/2005 and eurobonds issued after 01/01/2006. Taking volume into consideration issuing period between 26/07/2001 and 31/12/2005 covers the biggest part.

Income acquired in 2006 from Eurobonds issued between 26/07/2001 and 31/12/2005 can be theoretically divided into 2 as interest income and capital gain. Accordingly, below is presented information about eurobonds issued by Turkish Treasury. Looking at interest income received in 2006 from eurobonds issued between 26/07/2001 and 31/12/2005, YTL 191,089.20 YTL is exempt from taxation. Additionally if the balance after exemption becomes below YTL 18,000 no declaration is needed. If the balance exceeds YTL 18,000, then the whole amount (not just the exceeding part) is declared.

For YTL 18,000 limit total of other taxable income if any, like other interest income from other securities, dividends or rent income from real estates, should be taken into consideration. The investor can freely determine for which income exemption would

be applied in case acquiring both interest income and capital gain from Eurobonds issued between above mentioned dates.

Giving an example; YTL 210,000 is acquired in 2006 as interest income from Eurobond issued in 2004.

Accordingly decision to give a declaration or not is given as follows;

- For interest of eurobond issued after 26.07.2001;
 - a) YTL 210,000; YTL equivalent of eurobond interest income valued with Central Bank's Foreign Exchange Purchase rate.
 - b) YTL 191,089.20; Balance subject to exemption
 - c) YTL 18,910.80; Net interest income (a-b)

Now, because the total of Eurobond's interest income exceeds YTL 18,000; declaration limit, it must be declared fully as YTL 18,910.08.

In 2007 this exemption limit about Eurobonds issued between 26/07/2001 and 31/12/2005 reached YTL 205,994.16. But this time this limit is applied for the total of interest income and capital gain. When the balance after exemption is above YTL 19,000, the whole part exceeding the exemption must be declared. In case acquiring both interest income and capital gain from these eurobonds, investor can determine this exemption to apply either for interest income or capital gain.

Looking from the perspective of capital gain acquired in 2006 from eurobonds issued between 26/07/2001 and 31/12/2005 the separation of capital gain and interest income again exists. Accordingly just the capital gain acquired in 2006 from eurobonds issued between 26/07/2001 and 31/12/2005 is exempt from taxation up to limit YTL 191,089.20. A declaration is required just for the exceeding part.

Giving an example; Below is capital gain acquired from securities by selling them in 2006.

- YTL 300,000; Capital gain from Eurobond (issued between 26/07/2001 and 31/12/2005) by purchasing it for YTL 300,000 in January 2006 and selling it for YTL 600,000 in October 2006

Accordingly making a decision to declare them or not is made as follows;

- For capital gain from eurobond;
 - a) It was sold for YTL 600,000.
 - b) It was bought for YTL 300,000.
 - c) Inflation adjusted amount of purchase price is YTL 334,590.
 - d) Inflation adjusted profit is YTL 265,410.
 - e) Exemption (Income Tax Law Temporary Article 59) is YTL 191,089.20
 - f) Because $191,089.20 < 265,410$, capital gain from the sale of eurobond must be declared.

Again from the perspective of capital gain acquired in 2007, same conditions explained above is valid. Total of both capital gain and interest income acquired in 2007 is exempt from taxation up to limit of YTL 205,994.16. And in case exceeding the limit, the investor can determine where to apply the exemption.

All the things explained above is valid for eurobonds issued between 26/07/2001 and 31/12/2005.

Paying attention to younger eurobonds, specifically them, issued after 01/01/2006, interest income acquired both in 2006 and 2007 from these eurobonds is not subject to any income tax deduction. Thus, all YTL equivalent must be declared and taxed. Again for same type eurobonds, the whole capital gain must be declared and taxed.

All information above is about taxation of eurobonds issued by Turkish Government. Taking eurobonds issued by foreign organizations into consideration,

Interest income acquired by foreign organizations' eurobonds is fully declared in case it exceeds YTL 875 for financial year 2007.

And capital gain acquired in 2006 from these eurobonds again is exempt from taxation up to YTL 14,000 limit. Turning to 2007 gains, interest income from these foreign eurobonds issued before 01/01/2006 are subject to full declaration in case exceeding YTL 900 limit. On the other hand there is no capital gain exemption for capital gains acquired in 2007 from eurobonds issued after 01/01/2006. So they almost be fully declared and taxed (Deloitte, 2007;50)

As a summary of this chapter, Turkey opened up its financial account in 1989 with the hope of attracting new funds from foreign markets to close its fiscal deficits. But in all this process lived some crisis and increased its debt stock. Because of some inflationary concerns this debt acquiring process became from external sources and eurobonds got a big instrument within this financing attempt. As given above Turkey has a big share especially in its league of emerging economies in terms of eurobond issue.

Turning to tax considerations about eurobonds in Turkey, It can be observed three different types of eurobonds in terms of taxation. They are eurobonds issued before 26th July 2001, eurobonds issued between 26th July 2001 and 31st December 2005 and those issued after 1st January 2006. And in common there is an exemption limit for all these three periods' eurobonds.

CHAPTER 3

AN EMPIRICAL ANALYSIS ON US. DOLAR DENOMINATED EUROBONDS ISSUED BY REPUBLIC OF TURKEY

Eurobond market is one of the most generous market that offer a lot of options in terms of maturity, size, currency and other perspectives both for investors and issuers. Looking deeply though the market, especially return and price movements become key stones in decision process for investors.

So a study to determine the structure of return mechanism, could be beneficial for investors and further investigations in this area. Of course, as almost in all financial markets final returns of eurobond markets are shaped in market mechanism. But this demand- supply based market mechanism just shape the final forms of returns.

The basic structure is determined by other factors. One of the basic and overwhelmed determinant used by decision makers in this area is “country risk” .

Country risk is the type of the risk that exists just because of sovereign factors of focused country. Although it is defined as a single factor, actually country risk is a broad concept that covers much more determinants in it or in other words, country risk is the function of some other core determinants.

These core determinants are some macroeconomic variables as expected. Although in some politically risky regions of the world some political factors affecting stability or existence of the political regime could be a factor, but it becomes an extraordinary factor for a financial analysis.

Looking deeply into these macroeconomic factors especially some of them become more important according to prior studies and investigations. Ones of them are debt level of the country, budget balance, current account balance,

appreciation or depreciation of local currency against foreign currencies and some indices that presents the general well being of economy.

But how all these macroeconomic variables could be reflected as a single variable as a number? Here comes the concept of “spread”. Spread is basically the difference between two yields in economic terms. According to prior studies all risk measured from macroeconomic factors must be reflected in spread.

In brief country risk is taken as “spread” in this paper. And the explanation power of the macroeconomic variables is tested over “spread” by analysing them in different maturity spans.

3.1. Literature Review

Turning to literature review part, there can be seen some studies about the relation of spread and other macroeconomic variables. But taking the potential and variability of eurobond market and eurobond market instruments, this number is not so much. Especially in Turkey there are almost no studies about it because of the recent life span of eurobond concept. In other words Eurobond market is comparatively a young market in Turkey.

Some researchers used cross sectional techniques, some used time series analysis. But the main aim in all papers taken into consideration is finding a relationship between spreads of debt instruments and some economic indicators that can cause risk in the country or debtor organization.

Bernoth, von Hagen and Schuknecht (2003) investigated theoretically and empirically existence and development of bond yield differentials among EU Eurobonds issued between 1991 and 2002. German government bonds are taken as benchmark and spread in other countries eurobonds and German Government bonds are regressed against GDP, deficit level and debt stock of the issuer country. To acquire a standardization Debt/GDP, Deficit/ GDP and Debt Service Payment/ Total

Revenue are used as independent variables. As a result, all of these variables have significant positive relation with yield spreads. A discrete- time two – asset model with applications of a mean variance analysis is used. It is an analysis that uses both cross sectional and time series characteristics together. Data consist of government eurobonds of 15 EU countries issued between 1991 and 2002 and denominated in DM and after 98 converted into EURO. Totally used 185 Eurobonds issued with these characteristics within this time period.

Then Batten, Fetherston and Hoontrakul (2004) investigated the yield spread of sovereign bonds issued in international markets by major Asia Pacific issuers and various benchmark US treasury bonds namely with 2,5,10 and 30 years maturities. Credit Spreads are negatively related with US benchmark interest rates, positively related with upward sloping yield curve, negatively related with stock market index and positively related with exchange rate. Data covers the period from 30 December 1999 to 28 November 2002. It makes total 749 fixed rate 6 months paper observations. This is additionally a time series analysis and a GARCH specification of Collin Dufresne, Goldstein and Martin (2001) model upon two factors is used.

In a time series analysis Finnerty, Schneeweis and Hegde (1980) investigated eurobond yields and found that they follow a random walk namely an independent movement from previous periods. Results also indicate that US risk free yields remain as the dominant determinant of eurobond yields. In their paper used month end data from January 1968 and June 1977 within a time series framework.

Then Gabbi and Sironi (2005) made a research. Their data covers the eurobond issues completed by almost 600 major corporations from 15 countries for 1991- 2000 period. It makes total 5482 eurobonds. Issuance spread in primary market are regressed against some independent variables and they became significant in the analysis. They are ratings of corporate bonds, bond's expected tax treatment and expected liquidity of secondary market in which this bond is traded. In all analysis OLS estimation technique is used.

Amira (2004) examined factors affecting yield spreads on sovereign eurobonds at issuance. Data contains sovereign fixed rate eurobond issues in primary market between 1991 October and 2000 October. Quarterly data is used. In final data set there are 534 observations. For each country is used at least 3 issues. As independent variable issue specific and country specific measures are used. Inflation, government fiscal balance, current account balance and GDP per capita are from country specific measures and inflation and budget deficit seems significant and as expected according to the regression analysis. Although here data both with time series and cross sectional properties is used, here used an OLS estimation technique with its properties.

In Manzon (2005) Credit spread is modeled on ISMA sterling Eurobond Index. Data includes 2193 observations from December 31, 1991 to May 26, 1999 daily observations. According to results credit spread is negatively related with dividend yield on FTSE, negatively related with short term 3 months T bill returns, positively related with 15 years UK Government papers. At the same time again credit spread is observed having negative relationship with term structure and positive relationship with Dollar and Marc exchange rates.

Looking at Wagner, Hogan, Batten (2005) it can be seen an investigation about daily variations in credit spreads on investment grade DM denominated zero coupon eurobonds during 94 – 98 period with 1165 observations. They are 5, 10 and 30 years maturity bonds. Empirical results from a Longstaff and Schwartz two factor regression, which is a cross sectional analysis, indicate that; there is a negative correlation between changes in risk free interest rates and spreads. Additionally daily variations in spreads are highly persistent and significantly negatively related to the term structure level.

Turning to Hogan and In (2002) the spread for Australian Dollar denominated Eurobonds are valued by using a multivariate EGARCH model. Here found relationship between spreads versus stock market returns and interest rates. Data consists of daily credit spreads for period 2 January 1995 to 31 August 1998 of 954 AAA rated Australian Dollar denominated Eurobonds with maturities of 2,5 7 and 10 years and equivalent maturity of Australian government bonds. Results state that

Australian yield spreads vary negatively with changes in interest rates and with changes in stock markets returns.

In another paper, Batten, Hogan, and Jacoby (2005) daily yields of Australian \$ denominated non callable Eurobonds with different maturities are chosen (2,5,7,10 years). From daily data of Australian Dollar non callable eurobonds found changes in credit spreads are negatively related both changes in return on all Ordinaries Stock Index and changes in Government bond yield. Daily actual and relative credit spreads from January 1995 to May 1998 is chosen. As independent variable daily Australian All Ordinaries Index (as a proxy for return on asset factor) is chosen. In addition to this index, Australian Government Bond Rate as a proxy for interest rate factor is chosen as an independent variable. In addition to ordinary least square regression model, a generalized autoregressive conditional heteroskedasticity (GARCH 1,1) is used.

In Batten, Ellis and Hogan (daily yields of Australian Dollar Eurobonds with AAA, AA and A (S&P) ratings and with 2,5,7,8 and 10 years from January 1995 to August 1998 is used. It makes total 950 observations. Independent variables are daily returns of market index (Australian All Ordinaries Index), Slope of Yield Curve and Trade weighted Australian Dollar exchange rate. According to the GARCH analysis results that take also autocorrelation and heteroskedasticity into consideration, All Ordinaries Index, rating and interest rates have a negative and maturity has a positive relationship with spread.

Melnik and Nissim (2003) basically analyses issue costs and initial pricing of bonds in the international market. By doing this they investigated 3 basic determinant component of issue costs as underwriter fee, underwriter spread and underpricing. Data covers the period from September 13, 1996 to October 1997. During that period 1077 straight Dollar denominated bonds issued. From them 334 are sampled. They were semi annual fixed coupon paid eurobonds and 12 % were sovereign governments' 3% international agencies' like World Bank and 85 % were private corporations' eurobonds. For each issue collected quantitative variables as underwriter fee, coupon, maturity, credit rating, issue size and number of managers. Normal cross sectional data with OLS estimated. So it is not a time series analysis.

From another perspective Lonning (1999) addressed the existence and size of a risk premium in the eurobond market. The yield differences between German Government bonds and bonds issued in DM by several European Countries are measured. The results are regressed against some macroeconomic variables supposed to be determinants of the risk default on government debt. As a result some macroeconomic variables seem to be good predictors of yield differentials. These variables are net government debt, gross government debt, budget balance, current account balance, rating of the country and GDP growth rate. From these all seem significant predictors for spread except gross debt and GDP growth rate. Just the sign of current account variable becomes plus unexpectedly (may be due to correlation between rating and current account). Technically, this analysis is not a time series analysis. This is a cross sectional data with 11 countries. 5 and 10 years 13 DM denominated eurobonds' values with their yearly averages of daily prices are taken. Separately their values for years 1994, 95 and 96 are taken. So totally 39 bonds take place in the analysis.

Favero, Giavazzi, Spaventa (1997) evaluated the determinants of interest rate differentials namely spread between government bonds and high yielder countries' bonds. As risk free rate a "reference yield spread" concept is taken into consideration it is the yield of German Government Bonds with 10 years maturity. In conclusion it has been found that possibility of exchange rate depreciation of this country is important factor by determining the spread with a positive relation especially in the long run. Second factor is different tax treatments on income. And thirdly comes the default risk. This is a time series analysis done with daily data from January 1992 up to December 1995.

Datta and Patel (1994) pointed the main aim is to determine the effect of bank – firm relationship over yields of initial public offerings at that time. Data is a comprehensive sample of all initial public straight debt offers made by US corporations between 1971 and 1994. It makes 233 initial public offerings, from that number 98 proper ones are chosen. The relationship between yield and debt, size of issue, bond indenture covenants, rating, maturity, age of firm and size of firm relations are controlled. From them, debt, size of issue and maturity have positive

significant relation, and the rest variables have negative significant relation. This paper is a corporate level paper, not a sovereign country level paper. In regression OLS with cross sectional properties is preferred.

In Bayoumi, Goldstein, Woglom (1990) the question is asked whether yields increase as the debt level increases. Nominal Debt/GNP is taken into consideration as independent variable. Sample period is 1981 – 1990. in total there is 380 observations with 38 states. Each percentage point increase in Nominal Debt/GNP ratio increases promised yield by 23 basis points. Raise in taxes 1% costs 13 basis points, Rise of unemployment 1% costs 9 basis points in yield spreads. Results are consistent with market discipline hypothesis. Again a time series cross sectional mixed technique is used.

A test takes place whether there is a relation between risk assessments about countries and spreads over their bonds issued in Feder and Ross (1982). Beside risk, also maturity period and grace period (in which interest but not amortization is paid). Data covers June – July 1979 period. Correlation between spread and risk assessment is measured as 70%. This is a data consist of 78 observations for total 34 countries. A non linear least square estimation procedure is used.

Finnerty, Schneeweis and Hegde (1980) used to investigate eurobond yields and found that they follow a random walk namely an independent movement from previous periods. Results also indicate that US risk free yields remain as the dominant determinant of eurobond yields. In this paper is used month end data from January 1968 and June 1977.

Flandreau, le Cacheux, and Zumer (1998) used panel of European countries to examine the link between indebttness and cost of borrowing by regressing spreads of government bond yields over a risk free bond on the debt/GDP ratios. It is done by using OLS estimation techniques by using 15 European countries data between 1880-1913. In all regressions Debt/GDP found statistically significant and positively correlated with spread.

An investigation is done between spread relation with rating, interest volatility, size and call specification of the bond itself by Allen, Lamy and Thompson (1990). Data includes bonds of corporations. It covers the period between March 1977 and December 1983. Writers also divided this period into two sub periods. First period includes 176 issues and the second period includes 88 issues. According to results spread is indirectly related with rating, interest volatility and size. This analysis is also not a time series analysis and used OLS specifications.

Helwege and Turner (1999) examined credit yield curves of risky bonds in their paper Slope of the Yield Curve for Speculative Grade Issuers, holding quality of bonds constant by analyzing multiple bonds of same company equal in priority structure. They are all equal except maturity. Sample includes 64 offerings of 163 bonds. According to the result term structure is positively related with spread in BB and B rated bonds. OLS estimation technique is used.

Additionally Alper and Cigerli (2005) addressed relative importance of country specific fundamentals called “pull factors” compared to global liquidity conditions in explaining movements in Turkish Sovereign Spreads. From these pull factors, Current account balance and stock market index seem meaningful results over spread.

And Murphy (2003) made an investigation about structure of risk premiums in eurobond market. Eurobond yields over T Bills are examined. They are non callable bonds from the same issuer. The final sample includes 238 Eurodollar bonds, 171 Eurofranc Bonds, 134 Europound Bonds with 8505 observations. Although there is evidence of a rising term structure of credit yield spreads for high grade bonds (and low for low grades), this structure is found to vary significantly across currency, time and issuer. Empirical evidence found that credit risk spreads varied across currencies for bonds with same ratings. In different currencies but from same issuers indicated that significant differences in yield spreads exist for bonds with same default risk. Here is used non parametric Kruskal Walls H statistic.

And lastly He and K. Ng (1994) searched the relation between some macroeconomic indicators and some stock indices. In this paper some macro economic variables are

thought as proxies for underlying economic risks affecting stock returns. Here used monthly index returns of stock exchange between June 1958 and December 1989. According to results, monthly growth rate has a negative, unexpected inflation, change in expected inflation and difference between monthly return on long term government bond and one month treasury bill have positive relationship with stock market index.

3.2. Data

In this study an average spread (or return difference) between 5 – 10 and 30 years USD denominated Turkish Treasury Eurobonds and US Government papers with same maturity is taken as dependent variable.

They are USD denominated eurobonds issued by Turkish Government with 5 – 10 and 30 years maturities. These average spreads are cited from annual reports of Banking Regulation and Supervision Agency (BDDK) in years between 2000 and 2005 and again confirmed in reports of Turkish Treasury.

These spreads actually represent not the values of a single eurobond. Contrary, these numbers give an average of all eurobonds with same maturity, same issuer and same currency.

This analysis could be done also with more data for other countries, but due to young history of Turkish Eurobonds, unfortunately it had been restricted with six years, beginning from January 2000 up to December 2005. So there are total 24 observations.

Turning to independent variables, Total Debt / Gross National Product (GNP), Current Account Balance / GNP, EMBI, TUFE and TRUST Index are taken into

consideration. They are acquired from data banks of Turkish Central Bank and Turkish Treasury.

They all are quarterly data. Because GNP exists in the analysis and it is a quarterly announced data. So it is appropriate to take all variables in quarterly basis to provide time consistency. They all are provided in appendix part.

Giving a more detailed information about these variables, GNP is the gross national product of Turkey within these quarters of years. It is used here as the denominator of two independent variables, namely total debt and current account balance, to make them more comparative and meaningful.

Total debt is the sum of both domestic and foreign debt stock of Turkey within these time interval.

Current account balance on the other hand, one of the most popular counted risk variables for Turkey. It represents basically the balance of current account. A negative number means a deficit and a positive number gives a current account surplus.

TUFE is another independent variable used in the analysis. It is the basic consumer price index used in Turkey and represents inflation.

TRUST Index is an index calculated by surveys done by Central Bank. It gives responses of economic agencies about economical situation in Turkey and plays an important role for future plans and decisions of Central Bank.

Lastly EMBI, JP Morgan's Global Emerging Markets Bond Index (EMBI Global) tracks total returns for US dollar-denominated debt issued by 32 nations including also Turkey by approximately 7 % volume share. (Bond Basics; Oct. 2005; "Emerging Markets May Offer Opportunity to Enhance Returns")

3.3. Model

$$\text{Spread} = \beta_1 + \beta_2 \text{TD/GNP} + \beta_3 \text{CA/GNP} + \beta_4 \text{EMBI} + \beta_5 \text{TUFE} + \beta_6 \text{TRUST}$$

This model presents that spread occurs as a result of some macroeconomic indicators like Total Debt (TD), Current Account Balance (CA), Emerging Market Bond Index (EMBI), Consumer Price Index (TUFE) and Trust Index of Central Bank of Turkey (TRUST).

Basic reason to use these macroeconomic variables is that in core works in this area (like in papers of Geoffrey and Woglom in 1992) spread is used as the sign of risk. And because these macroeconomic variables one of the basic risk indicators for a country, they theoretically should give explanation of spread as the indicator of risk. This explanation above can be theoretically expressed and understood from the supply side of funds.

In any case the lender is concerned with the expected return of an investment that depends on the promised interest rate and the probability of default. In other words, the likelihood that the borrower will default on its commitments.

From the lender side the expected return should be equal to all investments at the margin. That means in a risk free market, one Dollar invested in public bond for a specific period, should give the same expected repayment at the due date as a risk free investment over same period.

So;

$$1+E = (1+y)(1-p) = 1+r$$

where “E” is the expected return on the bond, “y” is the promised return, “p” is the probability of default and “r” is the risk free rate that the lender receives nothing in case of default.

By taking the theoretical equation as;

$$(1 + y)(1 - p) = 1 + r$$

and rearranging this equation gives;

$$1 - p + y - py = 1 + r$$

$$y(1 - p) = p + r$$

$$y = (p + r) / (1 - p)$$

$$y - r = ((p + r) / (1 - p)) - r$$

$$y - r = (p + r - r + pr) / (1 - p)$$

$$y - r = (p(1 + r)) / (1 - p)$$

As seen in equation above ($y - r$) is the spread. In other words extra return over risk free rate. Theoretically it depends on p i.e. Probability of default. (Morris

Goldstein, Geoffrey Woglom, 92, “Market Based Fiscal Discipline in Monetary Unions”)

Here as p increases, spread follows it and as p decreases spread decreases as well. That means any factor increases probability of default or in other words, any factor increases the risk must be returned as spread.

Accordingly in the analysis TD and TUFE are expected having parallel relationship with spread as risk factor in macroeconomics. On the other hand CA, EMBI and TRUST variables are expected to have inverse sign with spread. They are what is expected from economic theory.

Turning to the technique of regression; Although characteristics of data have time series characteristics, ordinary least square cross sectional estimation technique is used with 24 observations covering 5 years period for 3 types of data set. These 3 types of data set are different time spans; namely 5 years, 10 years and 30 years; of eurobond spreads versus some macroeconomic variables as risk factors. By making this analysis, E views Econometric Package is used.

The reason why time series analysis has not been used is that investigation period for data is very short for time series analysis due to recent history of eurobonds in Turkey. By nature, the data is a time series data and autocorrelation is always a problem in time series data sets.

“Newey West” Option in E Views provides consistency for both autocorrelation and heteroskedasticity. Newey West Correction Technique is an extension of White Correction Method that simultaneously corrects for heteroskedasticity and serial correlation (autocorrelation) in OLS regression analysis.

Another problem could be Multicollinearity in OLS estimations. In some cases multiple regression results can seem paradoxical. Even though overall p value is very low, all individual p values are high. This means that the model fits the data well, even though none of the x variables has a statistically significant impact on

predicting y . Although it seems meaningless, it could be possible when two x variables are highly correlated.

So they both convey essentially the same information. In this case neither may contribute to the model after the other one is included. But together they contribute a lot. If you removed both variables from the model, the fit would be much worse. So the overall model fits the data well, but neither x variable makes a significant contribution when it is added to the model last. When it happens, the x variables are collinear and the results show multicollinearity. (www.graphad.com&hmotulsky)

In such a case of course, multicollinearity is a problem if it is tried to understand how various x variables impact y . One problem is that individual p values could be misleading. The second one is that confidence intervals for the regression coefficient could be very wide.

By checking our values in regressions, all p values and general R^2 values seem reasonable. They do not support any multicollinearity problem. Secondly the correlation matrix among variables also prove that there is not a strong linear relationship among these variables. In other words there is no value close to 1. Lastly the econometric package E Views warns if such a problem exists by a message “Near Singular Matrix”. In this work such a message is also not seen.

3.4. Results

In tables below are provided regression results of Turkey's some macroeconomic variables over Turkey's USD denominated eurobonds' spreads respectively for eurobonds with maturities 5, 10 and 30 years as explained in previous parts. They are basically results acquired from EViews Econometric Package.

Table 5: Regression Results for Eurobonds with 5 – 10 and 30 Years Maturities

Regression Results for Eurobonds with 5 Years Maturities				
Dependent Variable: SPR				
Variables	Coefficient	Standard Error	t Statistics	Probability
C	-96,372	191,214	-0,504	0,62
TD	342,042	117,956	2,899	0,01
CA	-1743,722	910,01	-1,916	0,071
EMBI	0,895	0,092	9,734	0
TUFE	0,0271	0,007	3,76	0,0014
TRUST	-5,9778	1,083	-5,518	0

Regression Results for Eurobonds with 10 Years Maturities				
Dependent Variable: SPR				
Variables	Coefficient	Standard Error	t Statistics	Probability
C	-657,145	929,725	-0,707	0,489
TD	475,352	487,328	0,975	0,342
CA	-6070,57	4842,576	-1,253	0,226
EMBI	1,976	0,4859	4,065	0,001
TUFE	0,088	0,0322	2,762	0,013
TRUST	-13510	3,408	-3,964	0,001

Regression Results for Eurobonds with 30 Years Maturities				
Dependent Variable: SPR				
Variables	Coefficient	Standard Error	t Statistics	Probability
C	-364,675	179,636	-2,03	0,057
TD	449,552	137,877	3,26	0,004
CA	-867,832	952,654	-0,911	0,374
EMBI	0,865	0,149	5,806	0
TUFE	0,041	0,011	3,782	0,001
TRUST	-4,189	1,279	-3,275	0,004

Looking to results of regressions, except CA/GNP ratio that represents Current Account Balance to GNP for related quarters, all variables have meaningful results within confidence intervals 10%. Additionally all variables with meaningful coefficients have theoretically expected signs.

According to theoretical part explained before, any factor makes a contribution to country risk should make additions to spread between returns of this country's eurobond and risk free investment with other same features.

Looking to TD/GNP ratio, represents the proportion of total debt (domestic debt + foreign debt) to GNP of related quarter, any increase in this ratio theoretically should increase the risk factor and expected to raise the spread. Again investigating the literature, it can be seen that Bayoumi, Goldstein, Woglom (1990), Lonning (1996), Flandreau, le Cacheux and Zumer (1998), Bernoth, von Hagen and Schuknecht (2003) agree with that theoretical results in their works.

Accordingly, looking to coefficients, for all 3 different due periods, it is observed positive signs presenting positive relationship like the literature do. Investigating coefficients in detail, they are 342, 475, 450 for 5, 10 and 30 years maturities eurobonds respectively. It means that any one point increase in TD/GNP ratio causes 342, 475 and 450 basis points increases in spread respectively for 5, 10 and 30 years.

TUFE is another variable in this study. It is the consumer price index used in Turkey. TUFE is also expected theoretically having positive relation with spread. Also Lonning (1996) and Amira (2004) found same results like the theory.

Accordingly results of regressions represent positive relationship with spread for all three different due span. Coefficients are 0.027152, 0.088, and 0.041 respectively for 5 – 10 and 30 years eurobond spreads meaning that a 1 point increase in TUFE results 0.027152, 0.088 and 0.041 basis points in spreads respectively.

Turning to TRUST Index, theoretically a negative relationship is forecasted. Because TRUST is an index declares the results of a survey done by Central Bank about general economic environment and expectetion in Turkey.

Looking to regression results, they seem as expected within the theory. Coefficients are -5.977838, -13.51 and -4.189 respectively for 5, 10 and 30 years eurobond spreads. Also He, K. Ng (1994), Batten, Hogan (2000), Batten, Hogan and Jacoby (2005) and Alper and Cigerli (2005) share the same result.

Lastly EMBI has also meaningful results. It represents an average return index for emerging market countries. So, it is also expected to have positive relationship with spread. Its coefficients are 0.985, 1.9757, 0.865 for 5, 10 and 30 years respectively meaning that one point increase in Emerging Market Bond Index causes these raises in spread. Similar results can also be observed in Batten, Hogan (2000), Manzoni (2002), Batten, Fetherston and Hoontrakul (2004) and Batten, Hogan and Jacoby (2005).

Conclusion

Finally international bond market is one of the biggest markets in financial markets and Eurobonds and foreign bonds are subgroups within international bond markets. As the main subject Eurobonds are international debt obligations issue in one of the Eurocurrencies through underwriters. They basically are sold abroad with a currency different than domestic ones. They are known as attractive debt instruments because in terms of variability and in currency or term structure, tax considerations, secrecy or anonymity they offer a lot of options both investors and issuers. Foundation of Eurobond market was established in recovery period of Second World War in US. In this period US replaced London financial markets and US Companies working in Europe could be able to increase their funds via issuers in New York market utilizing openness and low transaction costs in this market. This process continued until US began to give high amounts of balance of payment deficits due to high outflows. Kennedy Government applied an interest equalization tax made cost of borrowing

approximately 1% expensive from US Market. So especially American Companies present in Europe could not finance their activities through this way. Fund seeker US Companies in Europe began to sell their Dollar denominated bonds in Europe contrary to US. They became first Eurobond issues. Eurobonds also can be divided into sub groups like bonds in terms of their currency issued and issue types. For example fixed rate Eurobonds, floating rate Eurobonds, Zero coupon Eurobonds, Eurobonds with warrants and synthetic Eurobonds can be counted as most known ones.

Coming to advantages of Eurobonds firstly being free of withholding tax at source is the main advantage for lots of countries. Secondly because they are bearer bonds, anonymity of ownership got another feature for people hold secrecy as important. Thirdly it is a big market with lots of opportunities and variabilities in terms of currency and maturity. So the chance to diversify risk of fundings or investments become another advantage.

Turning to Turkish Eurobond Market, Turkey opened up its financial account in 1989 to attract foreign funds and finance fiscal deficits occurred because of crisis in Turkey. From that day Turkey issued Eurobonds in different currencies ranging from USD to Japanese Yen. Taking the subject within emerging markets perspective Turkey became one of the leading countries in terms of Eurobond issuance. This attractiveness of Eurobonds in Turkey can also be explained with tax exemption applied for all Eurobonds issued in Turkey. Investigating Eurobond taxation in Turkey three types of eurobonds appear in terms of their issuing periods. They are eurobonds issued before 26. 07. 2001, between 26. 07. 2001 and 31.12.2005 and after 01.01.2006.

In empirical analysis part about USD denominated Turkish Eurobonds, the effect of country risk is basically determined on USD denominated Turkish eurobond spreads. Country risk is a complex issue that could be explained in macroeconomic variables of issuer country. On the other side reflection of that risk can be observed in “spread” concept that is measured in return of eurobonds over government bonds in whose country they are issued. In other words in a regression analysis spread is chosen as dependent variable and Total Debt / GDP, Current Account / GDP, TUFİ as

Inflation Index, EMBI as Emerging Market Bond Index and Central Bank's TRUST Index is chosen as independent variables.

Looking to results of regression, except Current Account / GDP ratio all variables have meaningful results within 10% confidence interval. Total Debt / GDP ratio as in Bayoumi, Golgstein, Woglom; Lonning, Flandreau, le Cacheux and Zumer, Bernoth von Hegen and Shuknecht have positive relation with spread. TUFE has also a positive relation with spread as in Lonning and Amira.

Turning to TRUST Index a negative relation is found as in theory and in He, Ng; Batten and Hogan (2000), Batten Hogan and Jacoby; Alper and Cigerli.

Lastly EMBI has negative relation as expected in economic theory as Batten, Fetherston Hoontrakul; Batten, Hegen, Warren, Jacoby; and Alper and Cigerli found.

Appendix

1) Values Used in Regression Analysis beginning from 2000:1 up to 2005:4

Eurobond Spreads in bsp			current acc. Balance/	total debt /		tufe	Central Bank
5 years	10 years	30 years	gnp	gnp	EMBI+	1994=100	Trust Index
405	419	427	-0,0627	1,0280	765	2.749	108,80
520	389	415	-0,0703	1,0086	730	2.895	105,60
405	502	378	-0,0514	0,9542	652	3.117	100,80
608	865	639	-0,0528	0,9269	790	3.416	79,90
798	1034	780	-0,0200	1,3563	728	3.781	61,60
802	865	1020	0,0158	1,7038	734	4.519	80,10
948	977	1025	0,0345	1,7798	885	5.044	76,70
605	714	670	0,0278	1,6229	798	5.756	88,80
515	600	635	-0,0174	1,3875	610	6.242	103,60
638	776	850	-0,0215	1,4553	716	6.445	101,10
809	987	950	-0,0036	1,4095	908	6.913	100,80
635	654	780	-0,0079	1,3222	792	7.469	102,30
861	1932	875	-0,0766	1,3358	720	8.078	91,20
699	1160	770	-0,0552	1,1780	544	8.363	108,10
522	624	630	-0,0244	1,0952	487	8.503	106,10
294	366	425	-0,0316	1,1152	452	8.840	107,70
310	301	400	-0,0883	1,0835	437	9.033	108,00
496	493	632	-0,0842	1,1347	515	9.109	107,40
289	315	423	-0,0515	1,1197	432	9.268	108,20
208	246	365	-0,0491	1,0335	381	9.663	106,30
363	395	420	-0,0901	1,0359	352	9.821	104,00
356	359	442	-0,0872	1,0051	369	10.080	101,10
299	313	408	-0,0605	0,9942	297	10.309	104,70
293	298	349	-0,0642	0,9766	254	10.681	102,40

2) Regression Results for Eurobonds with 5 Years Maturities

Dependent Variable: SPR

Method: Least Squares

Date: 01/04/04 Time: 04:40

Sample: 2000:1 2005:4

Included observations: 24

Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-96.37282	191.2138	-0.504005	0.6204
TD	342.0419	117.9563	2.899734	0.0096
CA	-1743.722	910.0106	-1.916156	0.0714
EMBI	0.895000	0.091948	9.733716	0.0000
TUFE	0.027152	0.007221	3.760405	0.0014
TRUST	-5.977838	1.083165	-5.518864	0.0000
R-squared	0.853691	Mean dependent var	528.2500	
Adjusted R-squared	0.813050	S.D. dependent var	212.3543	
S.E. of regression	91.81713	Akaike info criterion	12.08979	
Sum squared resid	151746.9	Schwarz criterion	12.38431	
Log likelihood	-139.0775	F-statistic	21.00553	
Durbin-Watson stat	1.318310	Prob(F-statistic)	0.000001	

3) Regression Results for Eurobonds with 10 Years Maturities

Dependent Variable: SPR

Method: Least Squares

Date: 01/05/04 Time: 05:42

Sample: 2000:1 2005:4

Included observations: 24

Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-657.1446	929.7248	-0.706816	0.4887
TD	475.3524	487.3280	0.975426	0.0342
CA	-6070.570	4842.576	-1.253583	0.2260
EMBI	1.975747	0.485924	4.065958	0.0007
TUFE	0.088924	0.032193	2.762249	0.0128
TRUST	-13.51054	3.408264	-3.964054	0.0009
R-squared	0.646129	Mean dependent var	649.2875	
Adjusted R-squared	0.547832	S.D. dependent var	385.6730	
S.E. of regression	259.3399	Akaike info criterion	14.16647	
Sum squared resid	1210629.	Schwarz criterion	14.46099	
Log likelihood	-163.9977	F-statistic	6.573199	
Durbin-Watson stat	1.100932	Prob(F-statistic)	0.001209	

4) Regression Results for Eurobonds with 30 Years Maturities



Dependent Variable: SPR

Method: Least Squares

Date: 01/05/04 Time: 17:58

Sample: 2000:1 2005:4

Included observations: 24

Newey-West HAC Standard Errors & Covariance (lag truncation=2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-364.6745	179.6362	-2.030072	0.0574
TD	449.5521	137.8770	3.260530	0.0043
CA	-867.8321	952.6537	-0.910963	0.3744
EMBI	0.865887	0.149125	5.806465	0.0000
TUFE	0.041269	0.010911	3.782306	0.0014
TRUST	-4.189357	1.279033	-3.275409	0.0042
R-squared	0.848279	Mean dependent var	612.8333	
Adjusted R-squared	0.806134	S.D. dependent var	223.1020	
S.E. of regression	98.23237	Akaike info criterion	12.22487	
Sum squared resid	173692.8	Schwarz criterion	12.51938	
Log likelihood	-140.6984	F-statistic	20.12769	
Durbin-Watson stat	1.656056	Prob(F-statistic)	0.000001	



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