ABSTRACT

In a globalized environment as the present, the question to ask is if the effects are possitive or negative. For this, in this document, we show a proposal that by Arbitrage Pricing Theory (APT), estimate prices arbitrage free interval, both gross value and net of tax. So, we check if the tax rules make arbitrage opportunities foreing to mechanism of markets, despite to bear in mind the liquidity risk. From these gross and net gap, we will estimate the standard and harmonize levels, and then, if market globalization goes with a suitable legal response.

KEYWORDS: tax arbitrage, standard, harmonize, frictionless markets, binomial, legal risk.

1. FOREWORD

The economic liberation involves the so called economic globalization, but nowadays when there are voices against this phenomenon, we want to check if that, by itself, is suitable or not. For that, we will use the homogenize and standard concepts, so, in a receipt free economic behaviour as European Union (EU), we will try to value the homogenized and standard levels as correct ways of globalization.

To lean this proposal, we will resort to financial markets, which are marked by many persons as the origin of the globalization, though in this case, we will use them as a checking way, that is, we will estimate the riskless prices through the Arbitrage Pricing Theory (APT), and immediately after, will study tax rules effects on these prices. Then our

purpose is to establish if the tax rules on the EU markets make arbitrage opportunities, since in this way, we will caculate the homoginize and standard levels, and in short, if the globalization is risk free or, on the opposite, is drived towards some other objective.
We will achieve discrete time estimations, using as methodology of contingency valuation the so called, binomial model, since as we will expose during this document, that model fits the wanted objectives.

The document presents three parts: on the first, we clarify the arbitrage concept under two perspectives, the one of the market and the tax before return. On the second, we study these arbitrage opportunities for EU countries. Finally, we display research conclusions.

2. CONCEPT OF ARBITRAGE

2.1. Arbitrage in the financial markets

To measure the arbitrage opportunities is, previously, necessary, to define this concept, and we will do that by the Arbitrage Princing Theory (APT). In this part, we will insert the problem we want to study, in the BLACK and SCHOLES (1973) hypothesis of contingency valuation, for, immediately, after, in discrete time, doing a methodolgy of neutral risk valuation that, under binomial model, allows to estimate the arbitrage opportunities in the markets.

2.1.1. Applicatcion of the Arbitrage Pricing Theory

The APT leans on two basic principles:

a) There aren´t arbitrage opportunities, this suppose that there are probabilities which make the expected value of present future price is the same that present value price.
b) If prior condition is true, then the markets are complete, this implicates the free arbitraje probabilities are uniques.

This will be exposed by following examples with two trading periods of assets:

1. If two basic conditions are effected, then the solution is unique, so there is an asset which value is 10 € and it can reach in t=1 the following possible values, 16 or 8 €, then the probabilities (q) of both values could be obtained as:

$$\left.\begin{array}{l} 10 = 16 \cdot q_1 + 8 \cdot q_2 \\ 1 = q_1 + q_2 \end{array}\right\} \begin{array}{l} q_1 = 0{,}25 \\ q_2 = 0{,}75 \end{array}$$

2. If the second condition isn´t effected, then there are infinite solutions. The asset which starting value is 10 €, can reach the following possible values, 16, 10 or 8 €, in this case the probabilities would be:

$$\left.\begin{array}{l} 10 = 16 \cdot q_1 + 8 \cdot q_2 + 10 \cdot q_3 \\ 1 = q_1 + q_2 + q_3 \end{array}\right\} \begin{array}{l} q_3 = \lambda \\ q_2 = 0{,}75 \cdot (1 - \lambda) \\ q_1 = 0{,}25 \cdot (1 - \lambda) \end{array}$$

3. If the first condition isn´t effected, then there isn´t solution. There are two assets with the following values:

Assets	Value in t=0	Values in t=1
S	10	(16, 10, 8)
P	4	(6, 4, 1)

In this way, the resultant equations will be:

$$\left.\begin{array}{r} 10 = 16 \cdot q_1 + 8 \cdot q_2 + 10 \cdot q_3 \\ 4 = 6 \cdot q_1 + 1 \cdot q_2 + 4 \cdot q_3 \\ 1 = q_1 + q_2 + q_3 \end{array}\right\}$$

All this shows that there are three probabilities:

- Two basic conditions are effected, then there is an only probability Q.
- The first codition is effected, but not the second, then there are infinity of probabilities Q.
- The first condition isn´t effect, neither the second condition, then there aren´t probabililities Q.