Exploring Dividend Stability for Travel and Leisure Companies in the United Kingdom

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ABSTRACT

Dividend payment is one of several ways through which a company can distribute its value with the shareholders. Understanding how companies decide on their dividend policy has always been an issue of interest for researchers. Dividend Stability is found to be one of the most researched concepts in finance. Research shows that most companies try to have a stable dividend policy, arguing how such policy can affect company value and how it can help to avoid sending negative signals to the market and also its shareholders. To distribute dividends, companies may use dividend smoothing, meaning that they pay their targeted dividend payout ratio over time to shield it against any abrupt and unexpected financial hardships.

This study provides a window through which you can see how UK-based travel and leisure companies decide on their current year's dividend payments. It examines 21 companies listed on the London Stock Exchange during the period between 2005 and 2015 to find out whether companies in the travel and leisure sector follow dividend stability. It also aims at finding whether these companies' managements smooth their dividend payments. This purpose is fulfilled by using different regression models and selecting the most appropriate one, through adopting statistical tests. The results show that these companies follow a stable dividend policy. Current earnings and last year's dividends are found to be two major determining factors of the current year's dividend. Furthermore, these companies have a low target dividend payout ratio of 0.09 which can be an indicator of future growth opportunities. Even though this dividend payout ratio is quite low, it is still smoothed over time.

Keywords: Dividend Payout Policy, Dividend Smoothing, Lintner Model

ÖZ

Temettü ödemeleri, bir şirketin hissedarlarına nakit dağıtabilmesinin çeşitli yollarından biridir. Şirketlerin temettü politikalarına nasıl karar verdiklerini anlamak, araştırmacılar için daima bir ilgi konusu olmuştur. İstikrarlı temettü politikası, finans alanında en çok araştırılan konulardan birisidir. Araştırmacılar istikrarlı temettü politikasının şirket değerini nasıl etkilediğini araştırarak, şirket yöneticilerinin hissedarlara olumsuz sinyaller göndermekten kaçındıklarını göstermişlerdir. Şirketler istikrarlı temettü dağıtarak, ani ve beklenmedik temettü politikası değişikliğinden kaçınmaktadırlar.

Bu çalışma, İngiltere merkezli seyahat ve eğlence şirketlerinin temettü ödemelerine nasıl karar verdiklerini ışık tutmayı hedeflemiştir. Özellikle, seyahat ve eğlence sektöründeki şirketlerin istikrarlı bir temettü politikası izleyip izlemediğini ampirik olarak araştırılmıştır. 2005 ve 2015 yılları arasındaki dönemde Londra Menkul Kıymetler Borsası'nda işlem gören 21 şirket incelenmiştir. Sonuçlar, bu şirketlerin istikrarlı bir temettü politikası izlediğini göstermektedir. Mevcut kazanç ve geçen yılın temettüsü, dağıtılacak olan temettüyü belirleyen en iki önemli değişkendir. Hedef temettü oranının 0.09 olduğu tespit edilmiştir. Bu oranın mevcut temettü dağıtım oralarına göre düşük olması, büyüme fırsatlarının bir göstergesidir. Ancak, hedef dağıtım oranına şirketler istikralı bir şekilde ulaşmayı tercih etmektedirler.

Anahtar kelimeler: Temettü Dağıtım Oranı, Temettü İstikrarı, Lintner Modeli

To My Family

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I hereby would like to appreciate anyone who supported me to make this happen. Those who believed in me and never let me down when I needed help.

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Chapter 1

INTRODUCTION

1.1 Background

Since Lintner's (1956) survey and empirical models, company's last year dividend and its current earnings have been the two major factors having an impact on the current year's dividend. A huge body of research has been conducted to determine how companies decide on their dividend payout policy. One of the most prominent studies carried out in this area was Modigliani and Miller's work which resulted in their "Dividend Irrelevance Theory" (Modigliani and Miller, 1961). As the name suggests, this theory assumes that dividend policy has no relevance to a company's value. However, Dividend Irrelevance Theory was severely questioned due to its unrealistic assumptions. They assumed "perfect markets" with no taxes, information asymmetry, a fixed investment policy, and no transaction costs, etc.

There have been several dividend policy models suggested, which mostly supported dividend relevance, implying that dividend policy does have an impact on a company's value. For instance, Walter's (1963) model which considers a firm's internal cost of capital and rate of return are two elements that impact the dividend policy leading to an increase in the value of the firm.

Dividend stability (stickiness) and dividend smoothing put forward by Lintner have been the most widely used empirical finding to understand the determining factors of

dividend policy. Miller and Rock (1985) find that stockholders do not welcome any cut in dividend payments which result in dividend stability. Brav, Graham, Harvey, and Michaely (2005) state that most managers see dividend stability as important as investment levels. Skinner (2008) reports that companies that always pay dividend, try to maintain this pattern, resulting in the notion that stability signals the history as well as the future of the company. There are also other studies making attempts to explain such dividend stickiness and they point out factors such as "information signaling", "agency theory", "free cash flow theory", and etc., to be the causes of dividend stability and smoothing (John and Williams, 1985; Miller and Rock, 1985; Jensen, 1986). Such theories have been found to be insignificant by some other studies (Yoon and Starks, 1995; DeAngelo, DeAngelo, and Skinner, 1996; Benartzi, Michaely and Thaler, 1997). Therefore, dividend policy and its determining factors do remain a "puzzle" to the date, especially considering the tax disadvantage of paying cash dividends (Black, 1976).

1.2 Objectives

In this study, the focus is on how travel and leisure companies operating in the UK and how they decide upon their dividend policy. Particularly, Lintner's model (1956) is adopted as the basic model for this study in order to find out whether UK companies operating in the travel and leisure sector follow stable dividend policies. In addition, an attempt is made to empirically estimate the adjustment rate and the target dividend payout ratio of the companies under study. The aim is to test Lintner's Model for a specific sector in a specific country to see if the last year's dividend payment and the current earnings can explain the current year's dividend payment, and if possible, to have an estimation model that can forecast the dividend payment pattern for this sector.

There are few studies conducted on specific sectors of industries regarding how companies (their managements) see dividend policy and whether they follow a dividend stability policy. Therefore, the aim of this study is to fill this gap by conducting a study on the UK companies in the travel and leisure sector during the period between 2005 and 2015.

1.3 Data and Methodology

The data used in this study are collected using the Thomson Reuters Worldscope and Datastream. Based on the ICB (Industry Classification Benchmark) categorization, the travel and leisure sector is selected as the sector under study. In this sector, 21 public companies are found which are all listed and traded on London Stock Exchange. The period focused on in this study is between 2005 and 2015. The starting point is 2005 due to the fact that ICB started to be adopted in this year. Therefore, we come up with 210 observations which are used as "unbalanced" panel data for the study.

The data is subsequently analyzed using *Eviews 9* as the econometrics software package, and the descriptive statistics, the estimation results and the relevant test results are provided. Based on the Lintner's model, the relevant regression analysis is adopted in order to find out whether companies follow the dividend stability that Lintner proposes. To this aim, three different estimation models, the panel Ordinary Least Square (OLS) Model, the Fixed Effects Model, and the Random Effects Model, are tested to determine the most appropriate model of estimation for the study. Afterwards, the results of the estimations are analyzed and interpreted.

1.4 The Thesis Structure

This thesis is structured as follows. The literature on divided policy is reviewed in chapter 2. It basically deals with different aspects related to Dividend payout policy. Firstly, we seek to realize with different studies have shown to be the effect of dividend policy on company's value. Secondly, we try to analyze various studies conducted to find the determining factors of dividend policy. Thirdly, Lintner's survey is scrutinized and the notion of "dividend stability" is seen through the eyes of Lintner. Finally, different empirical studies relevant to dividend study are reviewed. Chapter 3 presents the empirical analysis and findings of the current study. It includes how the data used in this study are collected; what Lintner's Model contains and what elements it has; a presentation of descriptive statistics; a presentation of estimation methodologies and results; and the empirical interpretations. Finally, in chapter 4, we briefly present the conclusions we come to and how significant these findings are.

Chapter 2

STABILITY IN THE DIVIDEND POLICY

2.1 Dividend Policy and Company Value

One of the most prominent theories in the area of dividend policy, which provoked a lot of research later on, is the theory proposed by Franco Modigliani and Merton Miller (hereafter M&M). Their first theory, which has been cited by many finance-related papers and books, is called "Capital Structure Irrelevance Theory". Based on their paper (M&M, 1958), they show that under some specific assumptions, the mixture of debt and equity that a company holds does not influence its value. In other words, the capital structure of a firm does not add any value to the shareholders' wealth. Financing decisions do not matter and the value of a firm is rooted in the investment decisions that they make. Based on this theory, firms should be indifferent towards how they finance their investment projects (through equity, debt or retained earnings). Based on their paper in 1958, they published another paper published in 1961 focusing on the dividend policy. Once again, in perfect capital markets, they show that company value is not affected by the dividend policy. This is known as "Dividend Irrelevance Theory." In other words, company value is not affected by whether company pays any dividend or pay out cash via cash dividends or share repurchase.

Dividend irrelevance theory assumes that the following conditions exist in the market:

1. There is no personal or corporate income taxes,
2. There is a constant interest rate in the market,

3. There are no stock flotation or transaction costs,
4. Financial leverage has no effect on the cost of capital,
5. Managers and investors can have the same information about firm's future for free (also known as “symmetry of information”),
6. Distribution of income between dividend and retained earnings has no effect on firm's cost of equity,
7. Firm's capital budgeting is not affected by dividend policy.
8. Investors behave rationally, preferring to be richer. They also do not put any preference on the way their wealth increases, be it through dividend or capital gains,
9. Investors have certainty with regard to the future prospects of an investment program or profit of corporations.
10. Based on this certainty, only one type of security (common stock) is issued by all corporations.

The “Dividend Irrelevance Theory” has been controversial and many scholars have challenged it based on the fact that they do not take for granted such assumptions as supposed by M&M. Therefore, the conclusions M&M drew are under question. However, by having these strong assumptions about the capital markets, M&M indirectly show what can matter. For instance, what happens if there are taxes at the company and personal level and so on.

Baker, Farrelly, and Edelman (1985) find out that corporation managers mostly believe that dividend policy has an effect on a firm's value and there is indeed an optimal dividend payout level. In addition, when managers were asked about the importance

of dividend policy, most of them responded that they believe dividend policy affects the firm value (Baker and Powell, 1999). There has been a great deal of research conducted in this area, from which some are mentioned here.

One of the most commonly discussed issue in challenging M&M theory is the existence of taxes. Many studies question the overly simplistic assumptions of M&M's theory. Feenberg (1981) reports that there are high sums of taxes on dividend payments, which is against what M&M supposed (a no-tax environment). According to Baker and Powell (1999), the tax-preference theory states that investors might prefer retaining their money rather than dividend payments due to the issue of "tax". Farrar, Farrar and Selwyn (1967) express that if there are higher taxes on personal income in comparison with taxes on capital gain, companies should avoid dividend payments. What they need to consider, instead, is to repurchase share, this way they can avoid double taxation. Eije and Megginson (2008) report a growth in the amount of share repurchases in Canada and Europe. Fama and French (2001) also document a drop in dividend payments. These studies contradict the dividend irrelevance theory which claims firms are indifferent in selecting their dividend policy as it does not affect the overall value of the firm.

Another major criticism towards the M&M theory which supposes a symmetric information availability for everyone in the market. In other words, different studies have shown that the amount of information accessible to the managers (insiders) is higher than outsiders such as stockholders. Myers and Majluf (1984) suggest that dividends can "signal" to the market the fact that managers have more valuable information than stockholders. This is called "information asymmetry" and is in

contrast with M&M's assumptions which assumes that everyone has the same information regarding the present and future situation of a firm. According to Baker and Powell (1999), information asymmetry implies that firm managers have inside information that makes them advantageous compared to the investors from outside the company. Managers might use a variation in dividend payouts as signaling device to communicate this inside data and so decrease "information asymmetry". Investors can use the news they obtain regarding dividend as information to evaluate a company. This signaling effect of dividend payments is also supported by a study by Asquith and Mullins (1983) who report that the stock prices can increase by three percent when a firm announces that they are going to commence paying dividends. Therefore, paying dividends has an effect on the value of the firm, which is against claims put forward by M&M (1961).

In contrast, there are also some studies that show that the signaling effect of dividend payments is insignificant, such as DeAngelo, DeAngelo, and Skinner (1996) and Chen, Firth, and Gao (2002). Easterbrook (1994) finds that increases in dividend payments might be confusing signals if the market cannot spot the difference between firms which are growing and those which are simply firms which are not making investments (disinvesting firms). In other words, by paying cash dividends, managers are getting rid of any excess cash in the company rather than keeping the cash in the company having a low return or investing in negative net present value projects.

Agency costs have also been an issue which has been frequently used by scholars to challenge M&M's theory. Agency costs occur when management and shareholder's benefits are not in line with each other. In other words, managers might make decisions

based on their personal interests which is not in accordance with the shareholders'. Managers try to take decisions which are less risky and more conservative trying to secure their jobs but shareholders might prefer more profitable but riskier investments. Jensen (1986), for instance, states that managers have a tendency to keep too much cash, which is used unwisely in some cases and leads to 'the free cash flow problem'. Easterbrook (1984) mentions that managers should raise money in order to pay dividends to the shareholders, which takes them to the bankers who, in turn, monitor their decisions and activities closely. He also states that some managers do not take the risk of choosing risky projects with higher returns, as they are too much worried about losing their jobs if the investment goes wrong (i.e., the underinvestment problem). This is in contrast with M&M theory since the source of financing the investments (internal or external), can have an impact on the value of the firm. Moh'd, Perry, and Rimbey (1995) find that managers make decisions to reach "financial policy tradeoffs", one of which is to pay dividends in order to have agency costs under control.

The other notion of the "Dividend Irrelevance Theory" which is challenged is the claim that there is no impact of different 'clienteles' (specific type of investors) on the value of the firm. This concept has been investigated in different studies. For instance, Shefrin and Statman (1984) state that there is a psychological impact on the shareholder's desire for receiving cash dividends. In other words, some clienteles' demand cash dividends more than others do. For instance, pension funds, as a clientele, invest in regular dividend paying companies. Based on specific conditions of some clienteles their preference for cash dividends may be higher (John and Williams, 1985). These conditions include their age, lifestyle, employment and marital status.

Baker and Wurgler (2004) propose that managers are more willing to pay higher dividends when they find out that their clientele will put higher prices on the shares. Therefore, one can see the impact that clienteles might have on the amount of dividend payouts as managers sometimes try to satisfy a specific type of clientele.

Recently, there have been some studies that also challenge M&M's theory, mainly DeAngelo and DeAngelo (2006) who openly criticize M&M's Irrelevance Theory of being of little importance. In a later paper, DeAngelo and DeAngelo (2007) propose that instead of focusing on dividend irrelevance, scholars should take "optimal payout policy" into consideration. They regret the amount of research that had been conducted about the Dividend Irrelevance Theory. However, whether dividend policy is a determining element in the total value of a firm has always been a controversy among scholars.

2.2 Firm-specific Factors and Dividend Policy

Due to the fact that markets are imperfect and arguments against the M&M's 'Dividend Irrelevance Theory', there has always existed the question of what determines a firm's dividend policy. Do managers decide on the amount of dividends or whether dividends should be paid? In line with this quest, a large body of research has been conducted on how 'firm characteristics' (firm-specific factors) can have an impact on a firm's dividend payout policy

In this section, it is attempted to investigate the factors which are the most significant and are also more frequently mentioned by researchers in the literature. The factors which are worth mentioning are firm size, growth opportunities, profitability, and firm maturity.

2.2.1 Firm Size

According to the past literature, one of the determinants of dividend policy is said to be 'firm size'. Many studies have shown that when the firm size is bigger, managers are inclined to pay more dividends or pay dividends more frequently in comparison with firms with smaller sizes. Fama and French (2001) conduct a study on 27 portfolios listed on NYSE, AMEX, and NASDAQ in a period of 15 years (1963-1998) and find that there is a positive correlation between firm size and probability of dividend payouts. Ho (2002) states that firm size positively affects the dividend payments for Australian firms. Baker, Saadi, Dutta, and Devinder Gandhi (2007) also report that Canadian firms which pay dividends are significantly larger companies. Al-Kuwari (2009) studies non-financial firms in the Middle East, specifically the ones listed on GCC (Gulf Cooperation Council) stock exchanges in a four-year period of 1999 to 2003 and finds that dividend payments are positively correlated with firm size. Al-Malkawi (2007) finds consistent results by analyzing the impact of firm size on their dividend policy. He investigates firms listed on Amman Stock Exchange (Jordan) in the period between 1989 and 2000, and reports that firm size has a significant and positive effect on the firm's dividend policy. Al-Malkawi (2008) conducts a broader study on companies in Jordan. This time, he uses panel data of 15 years (1989-2003) for 1137 observations and concludes that firm size again has a positive impact on managers' decisions on dividend payments.

Furthermore, many studies show that large firms are likely to have a higher chance of raising capital at rather lower cost since they can enter capital markets more easily in comparison with small firms. Thus, they don't need to rely on internal funding and therefore can pay higher dividends to their shareholders (Eddy and Seifert, 1988; Redding, 1997; Holder, Langrehr and Hexter, 1998).

However, there are cases whose results are not in favor of the notion that size and dividend payments are positively correlated. Ben Naceur, Gaied, and Belanes (2006) finds a negative association between the size of Tunisian firms and their dividend policy after studying 48 firms in a period of 7 years, from 1996 to 2002. Parsian and Koloukhi (2013) study 102 companies listed on Tehran Stock Exchange (TSE) between 2005 and 2010, and report no significant impact of size of such companies on their dividend payout ratio.

2.2.2 Profitability

Another element which researchers have spent a lot of time on is profitability of firms. It is argued that firms with higher ability to obtain profit have more stable earnings, which enables firm to pay higher and more stable dividends. Lintner (1956) uses earnings as an indicator of changes in dividend payments. Ahmed and Javid (2008) also investigate 320 dividend payout policy of firms which were listed on Karachi Stock Exchange during 2001 to 2006 and report that profitable firms distribute higher sums of dividends among their stockholders. Fama and French (2001) find that after 1978 there are many firms with low profitability that do not pay dividends at all. In another paper in 2002, Fama and French find a positive correlation between profitability and dividend payments. De Angelo, De Angelo, and Stulz (2006) state that industrial firms are more likely to pay dividend when the ratio of their retained earnings to their total equity is high and profitability is a major determinant of retained earnings. Amidu and Abor (2006) try to identify determining factors of dividend policy in Ghana. They conclude that in cases where firms are profitable, dividend payments are higher. Alkawari (2009) also reports that one of the significant factors influencing the payout policy of firms listed on GCC country stock exchanges is profitability. Afza and Mirza (2010) find a positive relationship between profitability and dividend

policy. They find a positive relation of operating cash flow and dividend payments as well. Malik, Gul, Khan, Rehman, and Khan (2013) conducts a research on Pakistani firms. The results show that, "profitability, liquidity, earning per share and size of the firm positively affect the probability of paying dividend" (p.42). There are also many other studies which introduce profitability as a determinant of dividend payout policy (e.g., Adaoglu, 2000, DeAngelo, DeAngelo, and Skinner, 2004, Denis and Osobov, 2008). However, profitability can only be a partial explanation of dividend payout policy (Mitton, 2004).

2.2.3 Growth Opportunities

Investment opportunities can also play a vital role in the amount or the frequency of dividend payouts. However, there is a negative correlation between growth (investment) opportunities and dividend payouts. Fama and French (2001) state that there is a greater likelihood of growth opportunities for the firms which have never paid any dividends. Such firms seem to be less profitable than those which pay dividends. Such matter makes firms doubtful of paying dividend at all as they might be accused of not using growth chances and profitability when possible.

Furthermore, there are some other explanations for the relation between growth opportunities and dividend payments. For instance, a firm tries to use internal sources to provide investment projects with enough financial resources in case of growth opportunities and projects which are sufficiently large. Such a case decreases dividends or dividends are paid less frequently so that it can be less dependent on external resources which are more expensive. In contrast, firms that have a slower growth and fewer opportunities for investing usually pay bigger amounts of dividends. It is to avoid executives from overusing company's money for investment, also known

as the free cash flow problem. This is actually one way to reduce agency costs (Jensen, 1986; Lang and Litzenberger, 1989; Al-Malkawi, 2007). Specifically, Al-Malkawi (2007, p.60) predicts "firms with high growth and investment opportunities tend to retain their income to finance those investments, thus paying less or no dividends." Therefore, a huge body of research has indicated that dividends payments are higher in firms that have slow growth opportunities rather than those having higher growth opportunities since such firms have lower free cash flows (Jensen, Solberg, and Zom, 1992; Dempsey and Laber, 1992; Alli, Khan, and Ramirez, 1993; Moh'd et al., 1995; Holder et al., 1998; DeAngelo et al., 2006; Alkawari, 2009).

2.2.4 Firm Maturity

In order to appreciate the notion of firm maturity, 'the life cycle theory of the firm' should be explained. Mueller (1972) suggested a theory that a firm has a life cycle which can be formulated into different stages. Such theory is vital for the idea of 'firm life cycle theory of dividends'. In short, according to the life cycle theory proposed by Mueller (1972), firms show an S-shaped pattern of growth, meaning that there is a slow growth at start-up period which is followed by a period of rapid growth and finally leads to maturity and subsequently, slackness or slow growth. Therefore, managers tend to have different dividend payments depending on the stage in their life cycle.

Fama and French (2001) are claimed to be the pioneers of the life cycle theory of dividends. They study the patterns and factors determining payout policy for publicly traded US firms during the 1926–1999 period. They show that life cycle elements have a significant influence on cash dividend payment decisions. They find that dividend paying firms are those who are at the mature stages of their life cycle. In other words,

they are firms that are large and highly profitable with retained earnings enough for their capital investments.

DeAngelo et al. (2006) examine the life cycle theory of dividends by studying the relationship between dividend payment tendency and the mix of earned and spent capital. They assert that this ratio is a rather accurate representative for a firm's life cycle stage because it takes into consideration how much a firm depends on internally generated and external capital. They find that a firm is more likely to pay dividend when its they are financing it by internally generated earnings rather than external, which is a characteristic of mature firms (a positive relation between dividend payments and firm maturity). Denis and Osobov (2008) also find a positive association between firm maturity and dividend payments.

2.3 Lintner's (1956) Survey and Dividend Stability

One of the most prominent studies ever conducted to focus on dividend policy of companies was a study undertaken by John Lintner (1956). Initially, he did a detailed literature study on dividend policy and found out that there were fifteen variables affecting management's decision on dividends, such as size of the firm, earnings stability, liquidity position, market capitalization, use of stock dividends and etc.

Subsequently, he aimed at a sample of 600 companies, which were basically strong industrial companies. Among the sampled companies, he selected 28 companies for further interviews based on the fifteen variables he had already chosen. The time period he focused on was from 1947 to 1953. The interviewees were mostly the top executives of the companies, such as CEOs, CFOs, treasurers and so on. These people

were asked questions regarding what factors shaped their policies on dividend payments, especially in cases of a *change* in such payments.

Based on the answers, most managers considered the existing level of dividends and current earnings as a base for the future changes. Lintner found out that there was a tendency towards the stability of dividends and also in case of a change, there was a cautiousness for not making sudden, big increases in dividend levels. Furthermore, managers were mostly convinced that the shareholders considered stable dividend rates important, and the market preferred stability and gradual growth.

Lintner realized cuts in dividends were not desirable for the managers. In addition, managers did not consider any increase in the amount of dividend payments unless they reached a level of certainty for increased future earnings. In other words, if there were doubts about the increase in the future earnings, executives would not undergo the risk of increasing dividends.

Another notion worth mentioning here is a *long-term* "target payout ratio" which is dividends per share divided by earnings per share. Such notion was used by the managers in this study to determine an ideal payout rate which they intended to reach eventually. Based on what Lintner found, such payout targets varied between 20 to 80 percent of the earnings from which a 50 percent rate was the most typical. In addition, two thirds of the companies under study had a pre-set long-term policy regarding how they pay their dividends.

Besides, there needed to be a determined pace at which companies moved towards their target payout rates. The so-called “adjustment factor” or “speed of adjustment” were somewhere between one sixth to one half. This is to avoid shareholders’ adverse response to abrupt changes in the dividend. For instance, an adjustment factor of one sixth would mean that the company reached the target payout rate in six years. Of course, managers would modify their long-tern target payout ratio and adjustment factor over time.

Companies would consider “a partial adjustment model” if they encountered a sudden decline or increase in the amounts they earned. Companies “smooth” their dividend payments, meaning that an abrupt decrease in earnings might not necessarily lead to a decrease in dividend payments. However, managers felt that it is logical for dividends to reflect the continued decreased in earnings, so that stockholders would appreciate why there happened to be decreases in the dividend payments and accept it (Lintner, 1956).

Linter also finds that the differences of long-term target payout ratios and adjustment factors in different companies are due to numerous factors rooted in companies’ methods of operations, aims, and exclusive and unique experience. In other words, companies make dividend policy decisions which are in accordance to the history of experience in this regard, which might once be considered as an *ad hoc* decision but it gradually leads to a rational and formulated dividend policy. Furthermore, based on Lintner’s findings, investment opportunities have rather little influence on companies’ decision making on dividend.

2.4 International Empirical Evidence on Dividend Stability and Smoothing

Lintner's (1956) study has inspired several studies to test the degree of stability and dividend smoothing that managements tend to follow. Such studies have been conducted for different markets of different size all over the world. Brittain (1964, 1966) and Turnovsky (1967) reconfirmed Lintner's findings and their validity. Similar to Lintner's results, Turnovsky (1967) finds that investment opportunities play an insignificant role in companies' dividend policy decisions. Fama and Babiak (1968) reconstruct the Lintner model, adopting a more comprehensive procedure and find their results to be in line with Lintner's notion of stable dividend stability utilized by firms. They find that Lintner's model has a better predictive power than any other alternative proposed up to the date. Fama (1974) conducts a similar research again, using a bigger sample. He also concludes that firms follow dividend stability policy. McDonald, Jacquillat, and Nussenbaum (1975) test the Lintner hypothesis in the French market and obtained results which were in accordance with Lintner. Baker et al. (1985) find that dividend stability is pursued by managers and share price is also affected by dividend policies of the companies, which is indeed against Miller and Modigliani's argument in favor of irrelevance of dividend policy and share price (Miller and Modigliani, 1961). DeAngelo, DeAngelo, and Skinner (1992) analyze the relationship between dividend and company performances and find weak earnings performance and even losses are not considered determining factors of dividend payout changes. Behm and Zimmermann (1993) examine the model for Germany, following Lintner and related the earnings of firms to their dividend policy. However, they state that such policies are not based on a long-term payout ratio suggested by Lintner. Mahapatra and Sahu (1993) conduct a study on 90 companies in the time

frame from 1977-1978 to 1988-1989 and find out that past dividends are the sole determining factor for dividend decisions and cash flows are not a significant factor in this regard.

Leithner and Zimmermann (1993) also study dividend policies of four European markets. The countries included the United Kingdom, West Germany, France, and Switzerland. They found that, in Switzerland, firms determine a specific and explicit dividend policy which is based on the stability of dividends per share. In all the countries under study, managers try to smooth the time path of dividends. Ben Naceur et al. (2006) carry out a study on the determining factors of dividend policy of 48 companies listed on Tunisian Stock Exchange in the period between 1996 and 2002. They focus on how such companies smooth their dividend payment over time and find that Tunisian companies consider both dividends paid in the previous year and the earnings of the current year. However, they find a higher weight put on current earnings. Brav et al. (2005) also find that in the US, dividend stability is supported and beside the investment decisions, keeping the dividend level is of high importance. Boudoukh, Michaely, Richardson and Roberts (2007) find that dividend smoothing is more highlighted in public firms compared to private firms, since agency problems and asymmetry of information in the latter is seen more.

Analyzing British firms, Boudoukh et al. (2007) state that dividend smoothing is more prominent in public firms than private firms due to the fact that in the latter type information asymmetry and agency issues are more highlighted. Leary and Michaely (2009) also report an increase in dividend smoothing over the past 5 decades mentioning the importance of smoothing for today's management.

There are also studies conducted in Asian countries. For example, based on Kato and Loewenstein's (1995) study on Japanese firms, a stable payout ratio was observed during the 1980s. In addition, Ariff and Johnson (1994) inspect dividend policy in Singapore. They conclude that the tendency in that country towards zero dividend changes was more common in comparison with developed countries. He reports that Singapore firms attempted to keep the dividend payments unchanged for a minimum time period of three years. Dewenter and Warther (1998), in a comparison between Japan and the United States, report that for Japanese companies, adjusting their dividends to earnings changes occur more quickly than those in the United States. In addition, Japanese management is more willing to cut or omit dividend payout than those in American firms. Kumar (2003) investigates Indian companies between 1994 and 2000 based on the Lintner's model and finds a positive relationship between dividend payout policy with earnings and past dividend. Pandey (2003) study 248 Malaysian companies listed on Kuala Lampur Stock Exchange (KLSE) Main Board and finds an association between industry and payout ratio. He also finds out that there is a less stable dividend policy followed by the Malaysian companies. Another study on an Asian country was conducted by Al-Yahyaee, Pham, and Walter (2010). They test the dividend smoothing behavior of Omani firms in a unique environment where companies pay out 100% of their profits as dividend and the companies are highly levered. They conclude that Omani companies follow a policy of smoothing dividends. However, they report that this stability of dividends is in contrast with the predictions suggested by high amount of bank leverage, absence of taxes, and various tax payments in Oman.

Chateau (1979) and Shevlin (1982) use the Lintner Model in big Canadian and Australian corporations respectively. They also found out that in these developed countries, corporations follow stable dividend policy. Adjaoud (1986) also report that Canadian firms try to maintain the stability of dividend payouts and are not willing to cut the payout level. It is also reported that Canadian firms smooth the dividend payment levels based on what they expect to be their future earnings.

Glen, Karmokolias, Miller, and Shah (1995) focus on developing countries and state that corporations in such countries have target payout ratios but do not follow stable dividend policies. However, most studies were conducted on North American firms, especially American corporations. Adaoglu (2000) conduct a research using Lintner's Model to find out whether Turkish companies listed on ISE (Istanbul Stock Exchange) follow a stable dividend policy. He compares two different time periods of 1985-1994 and 1995-1997. These two periods are different in terms of the dividend payout regulations in Turkey, since in the former period, companies are required by the law to pay at least 50% of their earnings as cash dividend, whereas in the latter period this regulation is removed. Adaoglu reports that in both periods, ISE companies follow an unstable dividend policy. Ben Naceur et al. (2006) apply the Lintner's Model to survey firms in Tunisia and find that Tunisian firms rely on both current earnings and past dividends. They state that dividends tend to be more sensitive to current earnings than prior dividends and any change in the earnings of the firm is directly reflected in the level of dividends. They find that smoothing exists in the dividend policy of these firms but they differ in financial and non-financial firms.

Regarding the partial dividend adjustment model proposed by Lintner (1956), Brav et al. (2005) survey 384 financial executives and state that managers still try to maintain dividend stability. They report that companies even ignore some investment opportunities and projects in order to avoid future dividend cuts. However, they find that the link between dividends and earnings has weakened in comparison with the past. In addition, Leary and Michaely (2011) report that the adjustment pace has declined in recent years comparing to the past. Furthermore, Guttman, Kadan, and Kandel (2010) make an attempt to improve the Lintner's model by introducing "a partially pooling dividend policy".

More recently, Al-Ajmi and Abo Hussain (2011) conduct a study on 54 Saudi-listed firms and report that those firms have more flexible dividend policies and where needed they cut or skip dividends when their profits fall and in the case of losses they even pay no dividends. Later, Rahman and Al Mamun (2015) select 40 companies listed in Dhaka Stock Exchange, and validate Lintner's model and dividend smoothing in Bangladesh. Ozo, Arun, Kostov, and Uzonwanne (2015) express that even though there are discrepancies in the environments of emerging and developed markets, managers in these two different types of markets mostly have similar views about dividend policy.

Therefore, even after over 60 years since Lintner's model (1956) was proposed, it is still one of the most solid models in terms of its predictive power and it is a basic ground to study the determining elements of dividend behavior and policy of different companies in various industries. As Benatzari et al. (1997, p.1032) put it, "Lintner's

model of dividend remains the best description of the dividend setting process available".

Chapter 3

EMPIRICAL ANALYSIS

3.1 Data collection

The data used in this study are collected from the Thomson Reuters Worldscope and Datastream. The time period under study is between 2005 and 2015, as the ICB (Industry Classification Benchmark) started to be used in 2005. Twenty-one public companies which operate in the travel and leisure sector were identified. According to ICB, the travel and leisure sector, a subcategory of Consumer Services Industry, includes different subsectors, namely Airlines, Gambling, Hotels, Recreational Services, Restaurants and Bars, in addition to Travel and Tourism (http://www.ftserussell.com/financial-data/industry-classification-benchmark-icb).

The selected companies are all listed and traded on the Main Market of London Stock Exchange. The companies not listed on the London Stock Exchange are excluded from the current study due to the fact that they are typically small scale companies. Such companies, which are listed on exchange markets such as Alternative Investment Market (AIM - a submarket of the London Stock Exchange), ICAP Securities and Derivatives Exchange, are basically not major companies in terms of size and market value in the travel and leisure sector. (See Appendix A)

Following that, a final set of 210 observations were generated using panel data for the above-mentioned companies in the period of 2005-2015. This figure is the result of

the fact that the panel data is 'unbalanced', which leads to different numbers of observations for each company. This differences occur for various reasons. For instance, some companies have not been listed on the London Stock Exchange since 2005, as they have been established at a later time, or they were not considered a major company in terms of size and market value. Furthermore, in this study, those companies are selected that have, at least, two dividend payments. Finally, the data were screened for any discrepancy and a further reference was made to the financial statements of the companies in their official websites to make the necessary revisions.

3.2 Estimation Model: Lintner's Model and its Elements

As mentioned in Section 2.3, Lintner (1956) reports that managers believe shareholders prefer to receive stable dividend payments. He also states that managers try to set the dividend levels in order to avoid having to reverse dividend increases. Consequently, they seek to consider a gradual increase in payout ratio when earnings increase. Based on these findings, he developed an empirical model to explain the dividend decision policy, which is the model used in our study:

$$D^{*}_{i,t} = r_i P_{i,t} \quad \textbf{(1)}$$

$$D_{i,t} - D_{i,(t-1)} = a_i + c_i\left(D^{*}_{i,t} - D_{i,(t-1)}\right) + u_{i,t} \quad \textbf{(2)}$$

i: company i;
$D^{*}_{i,t}$: the targeted level of dividends at time t;
$D_{i,t}$: the actual dividends paid at time t;
r_i: the targeted dividend payout ratio (Dividends/Net Income);
$P_{i,t}$: net income in fiscal year t;
a_i: a positive number related to the dividend growth;
c_i: a positive adjustment factor ($0 \leq c_i \leq 1$);
$u_{i,t}$: errors.

The difference between the targeted and the actual dividend payments determines the change in the cash dividends. The long term target dividend payout ratio depends on the "expected earnings" or "normal earnings". A positive "a_i" shows that the companies are not willing to decrease the dividends and how they would prefer a gradual growth in dividends. Coefficient "c_i" indicates the stability in changes in dividend. Positive "c_i" is the adjustment factor to the targeted payout ratio and indicates how the managers react to changes in the earnings level when they are deciding on dividends. A higher coefficient "c_i" shows less smoothing in dividend payments. Therefore, a value of 1 shows that there is no dividend smoothing and the value of 0 means that the company adopts the policy of maximum smoothing.

Lintner combines equation (1) and (2) to test the following model:

$$D_{i,t} = a_{i,t} + bP_{i,t} + dD_{i,(t-1)} + u_{i,t} \quad \textbf{(3)}$$

where b = cr and d = (1-c).

In this study, the most appropriate econometric model (Equation 3) for Lintner's dividend policy model is found and accordingly all the coefficients mentioned above are estimated. This is to find out if the UK Companies specialized in the leisure and travel industry follow a stable dividend policy.

3.3 Descriptive Statistics

As it can be seen in Figure 1 and Table 1, there was a decrease in the average cash dividend payouts for the 21 targeted companies from 2005 to 2007, when there was a decline of 7% reaching to 0.35 in the latter year. Afterwards, the mean payout ratio increased for two years in a row, reaching to 0.45. There was a sudden fall in the mean payout ratio, resulting in the average payout ratio of 0.32 in 2011, the lowest figure in

the period under study. Subsequently, there was an almost upward trend in the period after 2011 with the exception of the year 2014, when the average payout ratio remained stable (0.40). This upward trend led to the highest average payout ratio of the period under study, signifying 0.47 as the average dividend payout ratio of the companies listed on the London Stock Exchange in 2015.

Figure 1. Dividend payout ratio average trend for 21 travel and leisure companies listed on the London Stock Exchange during 2005-2015

Figure 2 shows the pattern of the medians of the cash dividend payout ratios for the same period. As the graph illustrates, there was a slight increase in the median cash dividend payout ratio from 2005 to 2006, followed by a sudden decrease to 0.35 in 2007. This decrease can be due to the global financial crisis that started in 2007. However, the median payout ratio peaked in 2008 to 0.47 (the highest median of the period under study). But subsequently, there was a steady decline in the median figures for the next three years, reaching 0.34 (the lowest median of the period under study). This is mainly due to the slowdown in the global economic growth following the global

financial crisis. Then, the median remained stable for the next two years, which was followed by an increase to 0.40 in 2014 and stabilizing till the next year (2015).

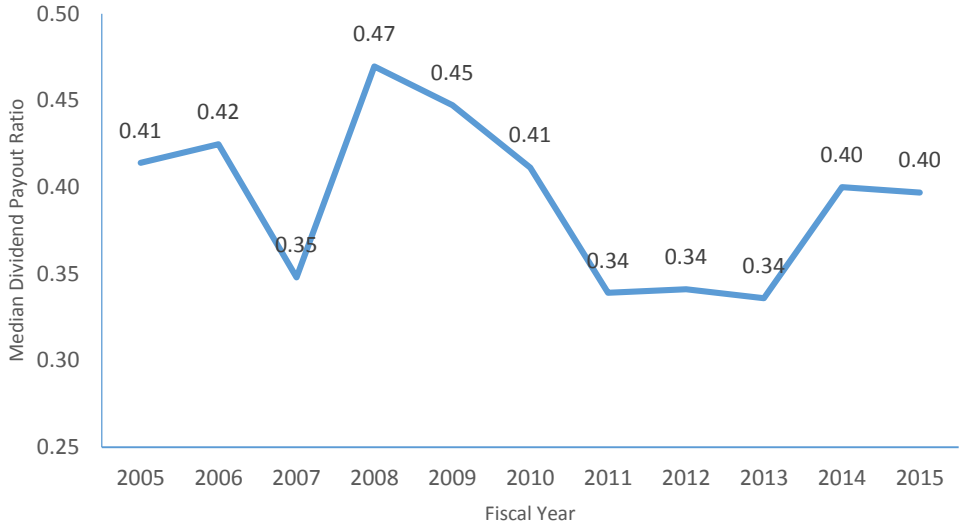

Figure 2. Dividend payout ratio median trend for 21 travel and leisure companies listed on the London Stock Exchange during 2005-2015

Table 1 indicates the mean, median, and standard deviation statistics for cash dividend payout ratio for each year separately from 2005 to 2015. Overall, the standard deviations for this period ranges from 0.230 to 0.510. As far as standard deviation of each year is concerned, the cash dividend payout ratio of 2015 (the last year in our investigation) has the highest standard deviation as well as the highest mean in this period (Mean = 0.47, SD = 0.510). This is to say that even though the average payout ratio for the targeted 21 companies has the greatest number, these data (dividend payout ratios for the companies in 2015) are spread out over a wider range than any other years. In contrast, the standard deviation for 2007 is 0.230 which is the lowest in this period. In other words, as it can be seen in Table 1, mean and median values are

same (Mean = 0.35, Median = 0.35, SD = 0.230). The average mean, median, and standard deviation for the period under study is 0.39, 0.40, and 0.329 respectively.

Table 1. Sample dividend payout ratio statistics for 21 travel and leisure companies listed on the London Stock Exchange (2005-2015)

Dividend payout ratio			
Year	**Mean**	**Median**	**S.D**
2005	0.42	0.41	0.276
2006	0.40	0.42	0.253
2007	0.35	0.35	0.230
2008	0.42	0.47	0.244
2009	0.45	0.45	0.463
2010	0.35	0.41	0.268
2011	0.32	0.34	0.290
2012	0.36	0.34	0.277
2013	0.40	0.34	0.329
2014	0.40	0.40	0.315
2015	0.47	0.40	0.510
Overall	0.39	0.40	0.329

As shown in Table 2, an analysis is conducted to find out the relationship between the companies' cash dividend payment policy and the changes in their earnings. Sign '+' implies an increase in the earnings per share (EPS) while '-' means there has been a decrease in the earnings per share of the companies.

As Table 2 represents, in case of '+' changes in earnings per share, which is 59.79% of the total companies, over 68% of these companies increased their dividend payments and around 9% kept at the same level (Total = 68.14% + 8.84% = 76.98%).

Such a high total value is expected based on Lintner's findings showing that the majority of companies increase their dividend payments or keep at the same level as their earnings increases. Less than 9% of the companies kept the same dividend payment policy and only a little below 5% of such companies decreased their dividend payments, which is not considered a big proportion. In addition, less than 1% omitted their cash dividend payments whereas in less than 18% of the cases, companies continued their omissions. This indicates that companies that continued dividend omissions are faced with financial problems. It means that they continued to pay no dividend even though there was an increase in their annual earnings.

Table 2**.** Changes in earnings and dividends

		Cases where companies				
Change in Earnings	Percentage of cases	Did not change dividends	Increased dividends	Decreased dividends	Omitted dividends	Continued omission
+	59.79%	8.85%	68.14%	4.42%	0.88%	17.70%
-	40.21%	5.26%	48.68%	13.16%	9.21%	23.68%

In contrast, in cases where the companies had a '-' earnings change, composing 40.21% of the observations, the companies only decreased their dividend payments in about 13% of the cases. They increased they dividend payments in just below 49% of the observations which implies that such companies try to stabilize their dividend payment policy even though their yearly incomes decrease. This is to avoid negative signaling to the market and shareholders, trying to present that in case of a decrease in annual incomes, the company is willing to keep dividend payment unchanged implying that corporations try to avoid dividend payment omissions as long as the company is able to do so. In just over 9% of the observations, the companies omitted their dividend

payments and in less than 24% of the cases their continued paying no dividend as the previous year.

Another analysis is carried out to find out how companies handle dividend payments when their Earnings Per Share is positive (EPS>0) versus the time when their Earnings Per Share is negative (EPS<0). Simply put, what happens to the companies' dividend policy when they are making profit in comparison with the time they are at loss (See Table 3).

Table 3. Earnings and changes in dividends

Changes in Earnings		Cases where companies				
Current year	Percentage of cases	Did not change dividends	Increased dividends	Decreased dividends	Omitted dividends	Continued omission
EPS>0	90.48%	8.19%	65.50%	7.60%	3.51%	15.20%
EPS<0	9.52%	0.00%	11.11%	11.11%	11.11%	66.67%

As shown in Table 3, in 90.5% of the observations the EPS was positive. As expected, when EPS>0, in over 65% of the cases, the companies increased their dividend payments whereas in less this than 8% of cases, the companies reduced dividends. Over 3% of the companies with a positive EPS, omitted their dividend payments. The figures for companies which did not change their dividend payments or continued dividend omissions are 8% and 15% respectively.

Also, in 9.52% of the observations, they companies were at loss (EPS<0). Out of these observations, the companies' policy for increasing, decreasing, or omitting was

similarly just over 11% for each. The rest of the cases (over 66%) the companies continued their omissions. There was no case where the companies continued to have the same dividend payment (for cases where there was a cash dividend payment). In other words, in negative earnings cases, majority of the sample companies (66%) are the ones which did not pay dividends in the previous year.

As the figures represent, the companies under study tend to avoid decreasing their dividend payments, or at least not to decrease them. This is in accordance with the literature review on the idea that there is a dividend stability policy in the market of big companies, when there is stability in their earnings (Lintner, 1956; Brav *et al*, 2005).

Overall, it appears that companies seem to tend to stabilize their dividend payments even though there are changes in their earnings. However, dividend payments seem to still be affected by the earning changes of the company. As shown in Table 3, even in some cases of loss, companies' major policy was logically based on the idea of continuing the same dividend policy. These are in line with Lintner's findings, which claims that companies tend to have stable dividend policies regardless of how extreme the earnings changes are in that fiscal year. However, it seems that the previous year's earnings and dividend payments are two major factors influencing the current year's dividend policy.

3.4 Estimation Methodologies and Results

In this study, the panel data is used, which is a combination of time-series and cross-sectional data. It means that, in our case, different companies' dividend payout is observed in different years. This will have the advantage of providing more

observations to the study in the first place and giving the researcher a greater number of data. For instance, in this study, the number of observations will increase to 210 observations, which would be 21 (number of companies) if cross sectional data was to use or at most 11 (time period of 2005-2015) if time-series data were to use, as mentioned in previous sections. As Gujarati (1995) notifies, panel data regression can increase the accuracy of the estimation, provides a higher forecasting power and better inferences. Such inferences can be achieved due to higher degrees of freedom, and a higher sample variability which makes the estimation more efficient accordingly (Hsiao, Mountain, and Illman, 1995). Greene (1997), also states that this method accounts for more "flexibility" of estimating models based on the differences of individuals.

The general linear model used for panel data is as follows:

$$Y_{i,t} = \alpha + \beta_k X_{k,i,t} + \epsilon_{i,t}$$

Subscript (t) signifies period of time, $t = 1,\ldots\ldots..,t_i$.

Subscript (i) symbolizes cross-section units, $i = 1,\ldots\ldots...,n$.

β_k are the number of parameters which are to be estimated

Subscript (k) represents the independent variables.

Our panel data sample is an "unbalanced" panel, meaning that the time period for which the observations are made are not equal for different companies in our study, due to reasons such as not being listed in London Stock Exchange, not being listed at the same time and etc.

There are 3 most widely-used approaches utilized in estimating panel data models; panel ordinary least square (OLS), the fixed effect model, and the random effects

model (Pindyck and Rubinfield, 1998). These three models are used in this study to estimate the regression equation and subsequently, the most appropriate one is selected according to some test statistics which are commonly used for this purpose, namely Hausman test and Redundant Fixed Effects test (F-test).

3.4.1 Panel Ordinary Least Square Model (OLS Model)

The first estimation model used in this study is Panel Ordinary Least Square. This is a method used in statistics in order to find the most "fitted" model in linear regression by minimizing the error term in the regression equation. As the "residuals" might be positive or negative figures, they can counteract each other. Therefore, the squared values are used to overcome this issue. That's what the model's name also signifies.

There are some characteristics which are needed for the OLS regression model to achieve the best estimates.

1. The parameters (the intercept and the slope coefficients) need not to change over time.
2. The mean of errors needs to be zero and there has to be a homogeneity of variance (homoscedasticity).
3. There needs to be a serial independence in the error term over time and companies.
4. The regression parameters must not be various among cross-sectional observations.
5. The error term and the independent variables must be independent of each other.

Having considered the major problems of OLS for panel data, namely constant intercept and slope, researchers came up with a new model of estimation called "the fixed effects model".

3.4.2 The Fixed Effects Model (FE Model)

As mentioned earlier, to tackle the issue of the limitations that the OLS assumptions would provoke, researchers introduced a new model of estimation, called the fixed effects model. This model takes into consideration what changes the heteroscedasticity (errors having different variances) and the ignored variables can impose on the intercepts of time-series and cross-section models. If some variables are neglected, the model based on which the estimations are made will definitely be biased. In order to deal with the bias of omitted variables, the model uses dummy variables to take into account variations in intercept, and the variations across the cross section units are handled by the differences in the constant term (LaMotte, 1983). The simplicity and the reasonable results that the fixed effects model leads to, has made it one of the most commonly used models available.

However, it has some limitations as well. For instance, it cannot control for variables which might change or vary over the time period under study since it holds their effects constant or fixed. In other words, it considers the estimators to be time-invariant. As Stock and Watson (2003, p289-290) put it, "The key insight is that if the unobserved variable does not change over time, then any changes in the dependent variable must be due to influences other than these fixed characteristics". It also decreases the degree of freedom. In other words, including one extra variable will be decreasing one degree of freedom (Pindyck and Rubinfeld, 1998). This will affect our estimation due to the

fact that we might not have a sufficient number of observations to estimate the variability of the parameters that exist in our model.

In order to compare the fixed effects model and the OLS, a test has been devised to compare the error sum of squares from the two models. This test is called F-statistic test (Gujarati, 2014).

H_0**:** The intercepts do not vary significantly among companies and through time (The intercepts are all equal/The efficient estimator is the panel least squares).

If the results for the F-test is statistically significant, the null hypothesis is rejected and it is concluded that the OLS model does not work in our case due to the biased result. In contrast, if the F-test fails to reject the null hypothesis (statistically insignificant) it can be concluded that, between the OLS model and the FE model, the OLS is appropriate for our case.

3.4.3 The Random Effects Model (RE Model)

As mentioned above, the fixed effects model tries to sort out the problem of the panel OLS by introducing dummy variables. However, when we use such dummy variables, it is assumed that these effects are fixed or constant across individuals. The Random Effects model, in contrast, assumes that such effects vary. In other words, there might be a correlation among the error terms across time-series and cross-sectional observations (Kreft and De Leeuw, 1998; Pindyck and Rubinfeld, 1998).

The Random Effects model, also known as the RE model, considers that constant terms are randomly distributed among the cross-sectional individual units. Such units have

common coefficients; However, the error term includes three elements: the cross-section error, time-series error and combined error (Adaoglu, 1999). This is a model which could replace the FE model as long as its assumptions are met. Bell and Jones (2015, p2) state that, "If the assumptions made by RE models are correct, RE would be the preferred choice because of its greater flexibility and generalizability, and its ability to model context, including variables that are only measured at the higher level."

According to Pindyck and Rubinfeld (1998), this model assumes that individual error components are uncorrelated with each other and are not auto-correlated (across both cross-section and time-series units). In other words, RE model aims at formulating the correlations among the error terms. In fact, it is considered to make the regression line to shift which is used for all observations for a specific individual. That is the reason why all the observations within individual cases will be correlated and this correlation is modelled through RE model (Gujarati, 2014).

According to Gujarati (2014), to choose between the fixed effect and the random effects models, a test was devised by statisticians. This test, which is called the *Hausman* test (H-test), attempts to examine the following null hypothesis:

H_o: There is no correlation between the error term and the explanatory variables (Random effects model is appropriate).

So, the alternative hypothesis (H_a) states that that fixed effects model is suitable. In other words, if the results for the Hausman test is statistically significant, we reject the

null hypothesis and conclude that the FE model is appropriate. In contrast, in the case that we do not reject the null hypothesis, our conclusion is that the RE model is the appropriate model of estimation for our case (Greene, 1997).

3.5 Empirical Findings and Interpretations

In this section, we are going to discuss the findings regarding the dividend stability and the estimation results. In addition, based on different statistical tests used in this study, the best model of estimation is going to be presented. The estimation results are corrected by using White cross section coefficient covariance method. This method corrects for cross-section correlation and heteroscedasticity.

As mentioned earlier, 210 observations from 21 companies in the travel and leisure industry listed on the London Stock Exchange in the UK were used in order to carry out panel data regressions for the Lintner model. Table 4. represents the findings of the estimations using three different econometric models, namely the panel OLS, the Fixed Effects Model, and the Random Effects Model. In addition, the adjusted R^2 for each model is also indicated in Table 4. The figures for the Hausman test and F-test are also represented to show the most appropriate model of estimation. The figures are obtained using the econometrics statistical package *Eviews 9*. The outputs of *Eviews 9* estimations are included in Appendix B.

The F-test result indicates that the null hypothesis is rejected. It means that the intercepts vary significantly among companies and through time as the p-value for the F-statistic is less than 0.10 (p-value = 0.0699). In other words, it can be concluded that the intercepts do vary significantly among companies and through time (The intercepts are not all equal/The efficient estimator is the fixed effects).

The Hausman test result shows that the null hypothesis for H-test is also rejected. This is because our calculated p-value is 0.00 (lower than 0.10). Therefore, it can be concluded that there is no enough evidence to reject that "there is no correlation between the error term and the explanatory variables." In other words, the fixed effects model results are the most reliable ones for our study and FE model is the most appropriate econometric model of estimation in our case It should be stressed that regardless of the estimation methodology, all coefficients are statistically significant at the minimum 10% significance level (See Appendix B for *Eviews 9* outputs).

Table 4. Regression analysis of dividend per share (DPS) on lagged earning per share (EPS) for a sample of 21 companies in the UK functioning in the sector of Travel and Leisure, listed on London Stock Exchange over 2005-2015, a total of 210 unbalanced pooled observations (p-values in parentheses)

$DPS_{i,t} = a_{i,t} + bEPS_{i,t} + dDPS_{i,(t-1)} + \varepsilon_{i,t}$			
Model	Ordinary Least Squares	Fixed Effects	Random Effects
Constant	0.039364 (0.0804)	0.055899 (0.0034)	0.040488 (0.0085)
$EPS_{i,t}$	0.036056 (0.0772)	0.041385 (0.0359)	0.036601 (0.0665)
$DPS_{i,(t-1)}$	0.675898 (0.0000)	0.563799 (0.0006)	0.668045 (0.0000)
Adj. R^2	0.858980	0.864633	0.856567
F-statistic (p-value)	105.1040 (0.0000)	55.58268 (0.0000)	562.3590 (0.0000)
F-test. (p-value)	1.554154 (0.0699)		

H-test d.f.: 2 (p-value)	29.408739 (0.0000)		

Thus, according to the model put forward by Lintner and our estimation results, we come up with the following regression model (the values in the parentheses are the p-values):

$$DPS_{i,t} = a_{i,t} + bEPS_{i,t} + dDPS_{i,(t-1)} + \varepsilon_{i,t}$$

$$\underset{\substack{\\(0.0034)}}{DPS_{i,t} = 0.055899} + \underset{(0.0359)}{0.041385EPS_{i,t}} + \underset{(0.0006)}{0.563799DPS_{i,(t-1)}}$$

Here are the results based on the estimations conducted for the period of 2005-2015:

1. This regression model is based on the fixed effects model results which has been found to be the most appropriate model of estimation for the current study. According to the obtained regression model, holding all other factors constant, an increase of 100 pounds in earnings per share will result in an increase of 4.13 pounds in cash dividend payments per share.

2. The lagged dividend per share is statistically significant at 1% significance levels (p-value = 0.0006). In addition, holding all other factors constant, a 100-pound increase in dividend per share lagged ($DPS_{i,(t-1)}$) will result in a 56-pound increase in cash dividend per share ($DPS_{i,t}$). This is in line with Lintner's theory of dividend stability since it can be seen from the results that the current year's dividend payment is highly dependent on the dividend payment of the previous year.

3. The adjusted R^2 is 0.864633, implying that in this regression model, the independent variables (Earnings per share and dividend per share lagged) can explain about 86% of the variations in the dependent variable (Dividend per share in this study). As it can be seen in Table 4, The F-statistic for the FE model is 55.58 with the probability value of 0.0000, implying that this model, as a whole, has validity in fitting the data used in the current study.

4. The Lintner adjustment factor (c) is around 0.44 showing that the companies under study try to smooth their dividend payments (See Table 5). The lower the adjustment factor (towards 0) means the companies' tendency towards more smoothing in regard to changes in their earnings.

Table 5. Estimated adjustment factor and target payout ratio

Adjustment factor (c) →	d = 1-c	→	d = 0.563799	→ **c = 0.436201**
Target payout ratio (r) →	b = cr	→	b = 0.041385	→ **r = 0.094875**

5. The long-run target dividend payout ratio (Lintner's) is 0.09. Companies set their long-run target dividend payout ratios considering the amount of positive net-present-value projects and growth opportunities. Notably, our sample median payout for the whole sample period is 0.40, which is substantially higher than the long-run target dividend payout ratio of 0.09. This can be a puzzling empirical finding. However, Brealey, Myers and Marcus (2012) explain it as follows:

> "If the current dividend is less than the target, then the dividend is increased gradually toward the target. But what if the firm hits hard times and expected earnings fall, leaving the current dividend higher than the target dividend? In this case, the dividend would probably not be cut immediately,

but just left alone. Financial managers don't cut regular dividends unless the cut is forced by heavy losses or dangerously high debt." (p. 485)

6. The constant term ($a_{i,t}$) is positive implying that companies tend to increase dividend payments as time passes (the value for $a_{i,t}$ is 0.056 and statistically significant at 1% significance level according to the regression estimations based on the fixed effects model).

Table 6. International empirical evidence on dividend stability

Research	Dividend Stability	Research	Dividend Stability
Brittain (1964, 1966)	yes	Ariff and Johnson (1994)	yes
Turnovsky (1967)	yes	Brav et al (2005)	yes
Fama and Babiak (1968)	yes	Naceur et al. (2006)	yes
Fama (1974)	yes	Rahman and Al Mamun (2015)	yes
Baker et al. (1985)	yes	Glen, Karmokolias, Miller, and Shah (1995)	no
Behm and Zimmermann (1993)	yes	Adaoglu (2000)	no
Leithner and Zimmermann (1993)	yes	Al-Ajmi and Abu Hussain (2011)	No

7. The findings of this study are in line with the concept of dividend stability and smoothing proposed by Lintner (1956). In other words, companies in the travel and

leisure industry in the UK follow a dividend stability policy and they also smooth their dividend payments. Table 6. presents the findings of various researches conducted regarding dividend policy, and dividend stability in particular. As it can be seen, in most researches dividend stability is followed, which is similar to the current study's findings.

Chapter 4

CONCLUSION

Research on dividend policy has been carried out extensively since Lintner's article in 1956. Researchers have been attempting to find out how and why corporations take particular decisions regarding their dividend policies. This body of research has been conducted on well-developed countries such as US and European countries as well as on the emerging markets such as Asian and African countries. The aim of this study was to focus on a specific sector, namely the travel and leisure industry, in the UK, a developed country. The study investigates the companies' dividend policy, mainly about the degree to which they follow dividend stability (stickiness) policy.

The study focused on the major public companies in this industry by including the ones listed on London Stock Exchange during 2005-2015. London Stock Exchange, one of the biggest stock markets in Europe, was established over 300 years ago and aims at providing a financial market for investors and those corporations who seek capital. As mentioned in section 3.1, the corporations listed on this stock market are typically big firms in terms of size and value. Descriptive statistics were used in order to analyze the companies' behaviors in cash dividend payment policies. Furthermore, panel data regressions were used for the empirical analysis and the best model of panel data estimation was accordingly chosen.

Based on the results that are obtained by using different estimation models and statistical tests, there are findings which are mostly in line with Lintner's findings. Firstly, companies in the travel and leisure sector in the UK follow a dividend stability policy. This finding is empirically supported by the fixed effects model's estimation results and this model is found to be the most appropriate model for this study**.** As Lintner (1956) shows in his study, most firms increase their dividend payments or keep them at the same level as their earnings increase. Secondly, those companies that keep on paying no dividends may have financial problems. They continue to omit dividends even though there was an increase in their annual earnings which is probably a sign of financial crisis in these companies. Thirdly, companies which had a decrease in their yearly earnings try to avoid dividend payment omissions as far as they can. Overall, this study shows that companies try to stabilize their dividend payments even when there are variations in their earnings. Having said that, dividend payments are still affected by the company's earnings changes. Furthermore, last year's dividend payment is the base for the current year's dividend payment as Lintner suggests.

Thus, we can summarize the findings of this thesis as the following points:

- Companies in the travel and leisure industry in the UK follow a stable dividend policy during the period under study. However, the target payout ratio is found to be only 0.09, which is significantly lower than the sample median payout ratio of 0.40. This may be a puzzling empirical finding but as Brealey et al. (2012) state this may be an indicator that managers do not want to cut dividend at once. They gradually adjust towards the target dividend payout ratio. They tend to cut or stop paying dividends only in times of unexpected financial distress or unexpected negative earnings.

- The low target dividend payout ratio of 0.09 can indicate that there are future growth opportunities and companies should adjust towards a lower payout ratio to finance these investments opportunities internally. Notably, the travel and leisure sector is an asset- and capital-intensive sector, and prioritizes growth. At the same time, it is a financially constrained sector.
- Current earnings and last year's dividends are found to be the two determinants for dividend-related decisions of the companies in the travel and leisure sector in the UK.
- The companies with an increase in the earnings increase their payment based on an adjustment factor (c), meaning that the target payout ratio (r) is fulfilled over time. This is also called "smoothing" of the dividend payments.
- 68% of the companies with an increase in earnings increased their dividend payments, implying that even though such companies had an increase in earnings, not all of them increased their dividends. This might show that they need to make sure that the new earnings are stable and then consider an increase in their dividend payments.
- 47% of the companies with a decrease in the earnings increased their dividends. This means that companies made an attempt to avoid a decrease in their dividends even though their earnings per share decreased.
- Any change in the earnings of a corporation in that year has a major influence on the amount of cash dividend paid by the firm.
- The mean speed of adjustment is estimated to be 0.44 which is higher than the adjustment factor found by Lintner (0.30).
- The adjusted R^2 value of the estimated model is 0.86 which is just above Lintner's finding which is 0.85. This shows a quite high explanatory power.

Generally speaking, our findings show that Lintner's Model works for the specific case of the travel and leisure industry in the UK. Companies smooth their dividend payments and spread their target payout ratio over time even though this ratio is quite low. This shows the signaling is a significant consequence of dividend payout policies and managers try to control the signaling effect adopting different dividend policy.

The implications of this study for the managers is that since the travel and leisure industry relies heavily on growth opportunities, assets, and capital, the managers need to be cautious when they decide to pay dividend. This is due to the fact that if they pay high dividends, they may not be able to finance their future projects. This will leave them behind their competitors in the market since this industry is highly competitive. In spite of that, managers still need to smooth their dividend payments and try to keep it stable in order to avoid abrupt changes in their earnings and also negative signals sent to the shareholders and the market.

However, there are still further questions to be answered. Will we have similar findings if we conduct a similar research on the similar sector in other countries, especially in emerging markets? Are there any other ways for the managers to deal with the signaling effect of dividend payout policies? Answering these questions requires further research in this area.

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APPENDICES

Appendix A: UK-based Travel and Leisure Companies Listed on London Stock Exchange between 2005 and 2015 (DPS = Dividend per Share, EPS = Earnings per Share, Source: Thomson Reuters Worldscope and Datastream)

ID	Company Name	Industries	Time	DPS (worldscope)	EPS (worldscope)
1	EASYJET	Airline	2005	0	0.117
1	EASYJET	Airline	2006	0	0.253
1	EASYJET	Airline	2007	0	0.399
1	EASYJET	Airline	2008	0	0.216
1	EASYJET	Airline	2009	0	0.184
1	EASYJET	Airline	2010	0	0.31
1	EASYJET	Airline	2011	0.115	0.573
1	EASYJET	Airline	2012	0.215	0.625
1	EASYJET	Airline	2013	0.335	1.013
1	EASYJET	Airline	2014	0.454	1.145
1	EASYJET	Airline	2015	0.552	1.391
2	FLYBE GROUP	Airline	2012	0	-0.083
2	FLYBE GROUP	Airline	2013	0	-0.54
2	FLYBE GROUP	Airline	2014	0	0.096
2	FLYBE GROUP	Airline	2015	0	-0.165
3	WILLIAM HILL	Gambling	2005	0.12	0.187

3	WILLIAM HILL	Gambling	2006	0.142	0.298
3	WILLIAM HILL	Gambling	2007	0.152	0.293
3	WILLIAM HILL	Gambling	2008	0.051	0.441
3	WILLIAM HILL	Gambling	2009	0.07	0.088
3	WILLIAM HILL	Gambling	2010	0.077	0.173
3	WILLIAM HILL	Gambling	2011	0.089	0.153
3	WILLIAM HILL	Gambling	2012	0.104	0.25
3	WILLIAM HILL	Gambling	2013	0.116	0.252
3	WILLIAM HILL	Gambling	2014	0.122	0.236
3	WILLIAM HILL	Gambling	2015	0.125	0.216
4	888 HOLDINGS	Gambling	2006	0.068	0.119
4	888 HOLDINGS	Gambling	2007	0.034	0.05
4	888 HOLDINGS	Gambling	2008	0.034	0.059
4	888 HOLDINGS	Gambling	2009	0.026	0.046
4	888 HOLDINGS	Gambling	2010	0	0.015
4	888 HOLDINGS	Gambling	2011	0	0.004
4	888 HOLDINGS	Gambling	2012	0.053	0.064
4	888 HOLDINGS	Gambling	2013	0.077	0.091
4	888 HOLDINGS	Gambling	2014	0.088	0.098
4	888 HOLDINGS	Gambling	2015	0.104	0.054

5	PLAYTECH	Gambling	2006	0.157	0.29
5	PLAYTECH	Gambling	2007	0	0.19
5	PLAYTECH	Gambling	2008	0.196	0.263
5	PLAYTECH	Gambling	2009	0.183	0.29
5	PLAYTECH	Gambling	2010	0.19	0.357
5	PLAYTECH	Gambling	2011	0.165	0.444
5	PLAYTECH	Gambling	2012	0.232	0.387
5	PLAYTECH	Gambling	2013	0.232	2.221
5	PLAYTECH	Gambling	2014	0.264	0.631
5	PLAYTECH	Gambling	2015	0.29	0.491
6	RANK GROUP	Gambling	2011	0.021	0.394
6	RANK GROUP	Gambling	2012	0.037	0.396
6	RANK GROUP	Gambling	2013	0.042	0.069
6	RANK GROUP	Gambling	2014	0.047	0.052
6	RANK GROUP	Gambling	2015	0.058	0.191
7	SPORTECH	Gambling	2005	0	-0.097
7	SPORTECH	Gambling	2006	0	0.113
7	SPORTECH	Gambling	2007	0	0.128
7	SPORTECH	Gambling	2008	0	0.051
7	SPORTECH	Gambling	2009	0	-0.122

7	SPORTECH		Gambling	2010	0	-0.039
7	SPORTECH		Gambling	2011	0	0.026
7	SPORTECH		Gambling	2012	0	0.007
7	SPORTECH		Gambling	2013	0	0.017
7	SPORTECH		Gambling	2014	0	-0.104
7	SPORTECH		Gambling	2015	0	0.033
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2005	0.077	0.213
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2006	0.085	0.345
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2007	0.125	0.507
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2008	0.063	0.213
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2009	0.063	0.229
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2010	0.1	0.309
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2011	0.125	0.51
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2012	0.136	0.42
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2013	0.136	0.705
8	MILLENNIUM CPTH.HTLS.	&	Hotels	2014	0.136	0.34

8	MILLENNIUM & CPTH.HTLS.	Hotels	2015	0.064	0.2
9	CINEWORLD GROUP	Recreational services	2007	0.085	0.22
9	CINEWORLD GROUP	Recreational services	2008	0.085	0.128
9	CINEWORLD GROUP	Recreational services	2009	0.09	0.129
9	CINEWORLD GROUP	Recreational services	2010	0.094	0.133
9	CINEWORLD GROUP	Recreational services	2011	0.099	0.151
9	CINEWORLD GROUP	Recreational services	2012	0.106	0.174
9	CINEWORLD GROUP	Recreational services	2013	0.101	0.126
9	CINEWORLD GROUP	Recreational services	2014	0.135	0.221
9	CINEWORLD GROUP	Recreational services	2015	0.175	0.307
10	ENTERPRISE INNS	Resturants&Bars	2005	0.09	0.309
10	ENTERPRISE INNS	Resturants&Bars	2006	0.135	0.504
10	ENTERPRISE INNS	Resturants&Bars	2007	0.156	0.534
10	ENTERPRISE INNS	Resturants&Bars	2008	0.162	0.38
10	ENTERPRISE INNS	Resturants&Bars	2009	0	0.012
10	ENTERPRISE INNS	Resturants&Bars	2010	0	0.052
10	ENTERPRISE INNS	Resturants&Bars	2011	0	0.048

10	ENTERPRISE INNS	Resturants&Bars	2012	0	0.088
10	ENTERPRISE INNS	Resturants&Bars	2013	0	-0.008
10	ENTERPRISE INNS	Resturants&Bars	2014	0	0.06
10	ENTERPRISE INNS	Resturants&Bars	2015	0	-0.13
11	COMPASS GROUP	Resturants&Bars	2006	0.107	0.131
11	COMPASS GROUP	Resturants&Bars	2007	0.115	0.159
11	COMPASS GROUP	Resturants&Bars	2008	0.127	0.222
11	COMPASS GROUP	Resturants&Bars	2009	0.14	0.313
11	COMPASS GROUP	Resturants&Bars	2010	0.186	0.382
11	COMPASS GROUP	Resturants&Bars	2011	0.205	0.409
11	COMPASS GROUP	Resturants&Bars	2012	0.226	0.341
11	COMPASS GROUP	Resturants&Bars	2013	0.255	0.477
11	COMPASS GROUP	Resturants&Bars	2014	0.27	0.49
11	COMPASS GROUP	Resturants&Bars	2015	0.294	0.523
12	PUNCH TAVERNS	Resturants&Bars	2005	2.224	11.475
12	PUNCH TAVERNS	Resturants&Bars	2006	2.637	18.679
12	PUNCH TAVERNS	Resturants&Bars	2007	3.011	20.647
12	PUNCH TAVERNS	Resturants&Bars	2008	1.083	-4.783
12	PUNCH TAVERNS	Resturants&Bars	2009	0	-11.22
12	PUNCH TAVERNS	Resturants&Bars	2010	0	-4.98

12	PUNCH TAVERNS	Resturants&Bars	2011	0	-26.96
12	PUNCH TAVERNS	Resturants&Bars	2012	0	1.54
12	PUNCH TAVERNS	Resturants&Bars	2013	0	0.631
12	PUNCH TAVERNS	Resturants&Bars	2014	0	-5.258
12	PUNCH TAVERNS	Resturants&Bars	2015	0	-0.417
13	MITCHELLS & BUTLERS	Resturants&Bars	2005	0.13	0.314
13	MITCHELLS & BUTLERS	Resturants&Bars	2006	0.13	0.479
13	MITCHELLS & BUTLERS	Resturants&Bars	2007	0.142	-0.025
13	MITCHELLS & BUTLERS	Resturants&Bars	2008	0.045	-0.437
13	MITCHELLS & BUTLERS	Resturants&Bars	2009	0	0.01
13	MITCHELLS & BUTLERS	Resturants&Bars	2010	0	-0.206
13	MITCHELLS & BUTLERS	Resturants&Bars	2011	0	0.307
13	MITCHELLS & BUTLERS	Resturants&Bars	2012	0	0.171
13	MITCHELLS & BUTLERS	Resturants&Bars	2013	0	0.329
13	MITCHELLS & BUTLERS	Resturants&Bars	2014	0	0.226
13	MITCHELLS & BUTLERS	Resturants&Bars	2015	0	0.25

14	WETHERSPOON (JD)	Resturants&Bars	2005	0.043	0.131
14	WETHERSPOON (JD)	Resturants&Bars	2006	0.047	0.241
14	WETHERSPOON (JD)	Resturants&Bars	2007	0.12	0.318
14	WETHERSPOON (JD)	Resturants&Bars	2008	0.12	0.252
14	WETHERSPOON (JD)	Resturants&Bars	2009	0	0.182
14	WETHERSPOON (JD)	Resturants&Bars	2010	0.12	0.293
14	WETHERSPOON (JD)	Resturants&Bars	2011	0.12	0.354
14	WETHERSPOON (JD)	Resturants&Bars	2012	0.12	0.356
14	WETHERSPOON (JD)	Resturants&Bars	2013	0.12	0.383
14	WETHERSPOON (JD)	Resturants&Bars	2014	0.12	0.339
14	WETHERSPOON (JD)	Resturants&Bars	2015	0.12	0.379
15	GREENE KING	Resturants&Bars	2005	0.146	0.304
15	GREENE KING	Resturants&Bars	2006	0.162	0.487
15	GREENE KING	Resturants&Bars	2007	0.184	0.578
15	GREENE KING	Resturants&Bars	2008	0.209	0.723
15	GREENE KING	Resturants&Bars	2009	0.21	0.237
15	GREENE KING	Resturants&Bars	2010	0.215	0.378
15	GREENE KING	Resturants&Bars	2011	0.231	0.497
15	GREENE KING	Resturants&Bars	2012	0.248	0.476
15	GREENE KING	Resturants&Bars	2013	0.266	0.455

15	GREENE KING	Resturants&Bars	2014	0.284	0.442
15	GREENE KING	Resturants&Bars	2015	0.297	0.409
16	WHITBREAD	Resturants&Bars	2005	0.254	0.599
16	WHITBREAD	Resturants&Bars	2006	0.281	0.325
16	WHITBREAD	Resturants&Bars	2007	0.312	1.006
16	WHITBREAD	Resturants&Bars	2008	0.36	0.444
16	WHITBREAD	Resturants&Bars	2009	0.365	0.528
16	WHITBREAD	Resturants&Bars	2010	0.38	0.924
16	WHITBREAD	Resturants&Bars	2011	0.445	1.272
16	WHITBREAD	Resturants&Bars	2012	0.512	1.515
16	WHITBREAD	Resturants&Bars	2013	0.574	1.709
16	WHITBREAD	Resturants&Bars	2014	0.688	1.83
16	WHITBREAD	Resturants&Bars	2015	0.821	2.048
17	MARSTON'S	Resturants&Bars	2005	0.07	0.079
17	MARSTON'S	Resturants&Bars	2006	0.077	0.171
17	MARSTON'S	Resturants&Bars	2007	0.092	0.2
17	MARSTON'S	Resturants&Bars	2008	0.095	0.163
17	MARSTON'S	Resturants&Bars	2009	0.071	0.039
17	MARSTON'S	Resturants&Bars	2010	0.058	0.083
17	MARSTON'S	Resturants&Bars	2011	0.058	0.121

17	MARSTON'S	Resturants&Bars	2012	0.061	-0.194
17	MARSTON'S	Resturants&Bars	2013	0.064	0.103
17	MARSTON'S	Resturants&Bars	2014	0.067	0.089
17	MARSTON'S	Resturants&Bars	2015	0.07	0.041
18	RESTAURANT GROUP	Resturants&Bars	2007	0.072	0.149
18	RESTAURANT GROUP	Resturants&Bars	2008	0.077	0.164
18	RESTAURANT GROUP	Resturants&Bars	2009	0.08	0.189
18	RESTAURANT GROUP	Resturants&Bars	2010	0.09	0.202
18	RESTAURANT GROUP	Resturants&Bars	2011	0.105	0.172
18	RESTAURANT GROUP	Resturants&Bars	2012	0.118	0.241
18	RESTAURANT GROUP	Resturants&Bars	2013	0.14	0.28
18	RESTAURANT GROUP	Resturants&Bars	2014	0.154	0.334
18	RESTAURANT GROUP	Resturants&Bars	2015	0.174	0.345
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2005	0.185	0.217
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2006	0.079	0.186
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2007	0.091	0.521

19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2008	0.097	0.343
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2009	0.098	0.16
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2010	0.11	0.344
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2011	0.118	0.441
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2012	0.126	0.421
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2013	0.137	0.526
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2014	0.151	0.521
19	FULLER SMITH & TURNR.'A'	Resturants&Bars	2015	0.166	0.512
20	FIRST GROUP	Travel&Tourism	2005	0.104	0.183
20	FIRST GROUP	Travel&Tourism	2006	0.115	0.223
20	FIRST GROUP	Travel&Tourism	2007	0.126	0.188
20	FIRST GROUP	Travel&Tourism	2008	0.139	0.226
20	FIRST GROUP	Travel&Tourism	2009	0.153	0.246
20	FIRST GROUP	Travel&Tourism	2010	0.168	0.224
20	FIRST GROUP	Travel&Tourism	2011	0.18	0.164
20	FIRST GROUP	Travel&Tourism	2012	0.193	0.348
20	FIRST GROUP	Travel&Tourism	2013	0.062	0.059

20	FIRST GROUP	Travel&Tourism	2014	0	0.051
20	FIRST GROUP	Travel&Tourism	2015	0	0.062
21	NATIONAL EXPRESS	Travel&Tourism	2006	0.181	0.274
21	NATIONAL EXPRESS	Travel&Tourism	2007	0.197	0.373
21	NATIONAL EXPRESS	Travel&Tourism	2008	0.118	0.405
21	NATIONAL EXPRESS	Travel&Tourism	2009	0	-0.176
21	NATIONAL EXPRESS	Travel&Tourism	2010	0.06	0.12
21	NATIONAL EXPRESS	Travel&Tourism	2011	0.095	0.199
21	NATIONAL EXPRESS	Travel&Tourism	2012	0.097	0.118
21	NATIONAL EXPRESS	Travel&Tourism	2013	0.1	0.111
21	NATIONAL EXPRESS	Travel&Tourism	2014	0.103	0.116
21	NATIONAL EXPRESS	Travel&Tourism	2015	0.113	0.209

Appendix B: Complete *EVIEWS 9* Outputs for 21 UK-based Companies Listed on London Stock Exchange between 2005 to 2015

B1. The Ordinary Least Square Model

Dependent Variable: DPS
Method: Panel Least Squares
Date: 11/21/17 Time: 11:30
Sample (adjusted): 2006 2015
Periods included: 10
Cross-sections included: 21
Total panel (unbalanced) observations: 189
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.055899	0.018817	2.970728	0.0034
EPS	0.041385	0.019560	2.115800	0.0359
DPS(-1)	0.563799	0.160327	3.516551	0.0006

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.880474	Mean dependent var	0.154508
Adjusted R-squared	0.864633	S.D. dependent var	0.313115
S.E. of regression	0.115202	Akaike info criterion	-1.370631
Sum squared resid	2.203071	Schwarz criterion	-0.976133
Log likelihood	152.5247	Hannan-Quinn criter.	-1.210811
F-statistic	55.58268	Durbin-Watson stat	2.054418
Prob(F-statistic)	0.000000		

B2. The Fixed Effects Model

Dependent Variable: DPS
Method: Panel Least Squares
Date: 11/21/17 Time: 11:30
Sample (adjusted): 2006 2015
Periods included: 10
Cross-sections included: 21
Total panel (unbalanced) observations: 189
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.055899	0.018817	2.970728	0.0034
EPS	0.041385	0.019560	2.115800	0.0359
DPS(-1)	0.563799	0.160327	3.516551	0.0006

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.880474	Mean dependent var	0.154508
Adjusted R-squared	0.864633	S.D. dependent var	0.313115
S.E. of regression	0.115202	Akaike info criterion	-1.370631
Sum squared resid	2.203071	Schwarz criterion	-0.976133
Log likelihood	152.5247	Hannan-Quinn criter.	-1.210811
F-statistic	55.58268	Durbin-Watson stat	2.054418
Prob(F-statistic)	0.000000		

B3. The Random Effects Model

Dependent Variable: DPS
Method: Panel EGLS (Cross-section random effects)
Date: 11/21/17 Time: 11:33
Sample (adjusted): 2006 2015
Periods included: 10
Cross-sections included: 21
Total panel (unbalanced) observations: 189
Swamy and Arora estimator of component variances
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.040484	0.015225	2.659048	0.0085
EPS	0.036601	0.019832	1.845588	0.0665
DPS(-1)	0.668045	0.151755	4.402136	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.115202	1.0000

Weighted Statistics			
R-squared	0.858093	Mean dependent var	0.154508
Adjusted R-squared	0.856567	S.D. dependent var	0.313115
S.E. of regression	0.118585	Sum squared resid	2.615591
F-statistic	562.3590	Durbin-Watson stat	1.789729
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.858093	Mean dependent var	0.154508
Sum squared resid	2.615591	Durbin-Watson stat	1.789729

B4. F-test Outputs

Redundant Fixed Effects Tests

Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.554154	(20,166)	0.0699
Cross-section Chi-square	32.439498	20	0.0388

Cross-section fixed effects test equation:
Dependent Variable: DPS
Method: Panel Least Squares
Date: 11/21/17 Time: 11:23
Sample (adjusted): 2006 2015
Periods included: 10
Cross-sections included: 21
Total panel (unbalanced) observations: 189

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.040484	0.009555	4.236757	0.0000
EPS	0.036601	0.003078	11.89027	0.0000
DPS(-1)	0.668045	0.027337	24.43757	0.0000

R-squared	0.858093	Mean dependent var	0.154508
Adjusted R-squared	0.856567	S.D. dependent var	0.313115
S.E. of regression	0.118585	Akaike info criterion	-1.410634
Sum squared resid	2.615591	Schwarz criterion	-1.359178
Log likelihood	136.3049	Hannan-Quinn criter.	-1.389788
F-statistic	562.3590	Durbin-Watson stat	1.789729
Prob(F-statistic)	0.000000		

B5. Hausman Test Outputs

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	29.408739	2	0.0000

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
EPS	0.041385	0.036601	0.000002	0.0002
DPS(-1)	0.563799	0.668045	0.000512	0.0000

Cross-section random effects test equation:
Dependent Variable: DPS
Method: Panel Least Squares
Date: 11/21/17 Time: 11:16
Sample (adjusted): 2006 2015
Periods included: 10
Cross-sections included: 21
Total panel (unbalanced) observations: 189

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.055899	0.009852	5.673804	0.0000
EPS	0.041385	0.003258	12.70161	0.0000
DPS(-1)	0.563799	0.034895	16.15688	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.880474	Mean dependent var	0.154508
Adjusted R-squared	0.864633	S.D. dependent var	0.313115
S.E. of regression	0.115202	Akaike info criterion	-1.370631
Sum squared resid	2.203071	Schwarz criterion	-0.976133
Log likelihood	152.5247	Hannan-Quinn criter.	-1.210811
F-statistic	55.58268	Durbin-Watson stat	2.054418
Prob(F-statistic)	0.000000		