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Wealth Creation in the US and UK Stock Markets
1800-1930

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Abstract

In this thesis, I analyse wealth creation in the US and UK stock markets from 1800 to 1930 using common stock data from the Global Financial Data database. The study encompasses 9,337 US firms and 3,048 UK firms. Results show that US stocks generated \$75.58 billion in wealth with the Transports industry being the largest contributor, while UK stocks generated £6.42 billion with the Finance industry being the largest contributor. However, 46.41% of US firms and 46.72% of UK firms experienced negative shareholder wealth. Over time, wealth creation became more concentrated in both markets, with a higher concentration observed in the UK. Specifically, the top 50 US firms accounted for 58.09% of total net wealth, compared to 78.43% for the top 50 UK firms. Additionally, the percentage of firms with negative wealth creation increased in the final 20 years of the study period.

Keywords: Wealth Creation, Wealth Concentration, Stock returns, US stock market, UK stock market

JEL Classification: G11, G23

PREFACE AND ACKNOWLEDGEMENTS

This thesis forms the end of my master's degree in Financial Economics at the Erasmus University. The journey of researching and writing this thesis has been both challenging and rewarding, allowing me to delve deeply into the Shareholder Wealth Creation in the United States and the United Kingdom. Over the course of this study year, I have not only expanded my academic knowledge but also developed a greater insight into my interests for the future. This work represents my efforts to contribute to the ongoing scholarly discourse in this area, and I hope that it offers valuable insights to future researchers, practitioners and students. This thesis would not have been possible without the support and guidance of several individuals. First and foremost, I would like to express my sincere thanks to my supervisor, Bart van Vliet, for his support, and insightful feedback, throughout this process. I would like to extend my gratitude to my family and friends for their support, patience, and understanding during this time. I could not have completed this thesis without you.

The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

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The Erasmus University logo, featuring the word "Erasmus" in a stylized, cursive script.

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1. Introduction

Individuals and enterprises engage in the acquisition of public and private equity with the expectation of yielding returns which are proportionate with the level of risk assumed. Conventional financial paradigms, such as the Capital Asset Pricing Model (CAPM), operate on the premise that investors are rewarded in proportion to the risks they undertake. This thesis examines this premise by scrutinizing the trajectory of shareholder wealth creation (SWC) within the public stock markets of the United States (US) and the United Kingdom (UK) across a temporal span of 130 years, encompassing the period from 1800 to 1930. By doing so, sectors, industries, and companies come to light that are of interest to portfolio and investment managers, or anyone seeking returns in the public stock markets. With the rise of Exchange Traded Funds (ETFs) in the past 15 years, there is greater emphasis on the question whether investing in the entire market is necessary, or just a select few companies is sufficient (Liebi, 2020). Additional research shows that almost 70% of US families report an investment horizon of at least a few years, and 63% of those report a horizon longer than 5 years (Faragó & Hjalmarsson, 2022). This emphasises the importance of looking at longer term returns.

Earlier conducted research of Bessembinder (2021) and a more updated version of Bessembinder (2023), which analyzes the shareholder wealth creation of the US public stock market spanning from 1926 to 2022, has shown that SWC is positively skewed and most SWC comes from a handful of companies. The term “shareholder wealth creation” (SWC) refers to the improvement of wealth of the shareholders of a company over the period that the company was listed on the public stock markets. The SWC is not only the change in share price, but also the dividends, share repurchases and the share issuances. The study of Bessembinder (2021) does not only show the concentration of the SWC, but it also shows that most companies have negative SWC. Besides these findings, the concentration of SWC gets higher towards fewer companies throughout time. In addition, the research of Faragó and Hjalmarsson (2022) shows that at long horizons compounding returns lead to extreme positive skewness. This is predominantly influenced by the single-period volatility of the stock. The positive skewness on longer horizons is also shown by Fama and French (2018). They report low skewness in short horizon returns, but higher skewness when the horizon of the returns is increased.

Despite these previous results there are still countries and times where no results have been found for. This master thesis aims to contribute to the understanding of public equity investments across an extended framework which adds to the work of Bessembinder (2023). Additionally, this research undertakes an investigation into patterns within the UK public stock market. Within this research distinctions are made between capital gain returns and dividend returns which adds new information to existing literature. Employing a comparative approach, the study seeks to illuminate both divergences and similarities between the US and UK public stock markets, thereby contributing to the enrichment of the existing literature. Therefore, this master thesis answers the following research question: *“How does the Wealth Creation in the US and UK Public Stock Markets look between 1800 – 1930?”*

The evaluation of shareholder wealth creation within the US and UK public stock markets is done by using the data sourced from the Global Financial Data (GFD) database. Data is available for 11.232 US public common stocks, and 3.844 UK public common stocks. The calculation of shareholder wealth creation across this period requires data such as share prices, total returns, and the amount of shares outstanding. This analytical approach enables a comprehensive assessment of the wealth generated for shareholders over the scope of 130 years. By using the data of the GFD database capital gains and dividends can be analyzed separately. Monthly data is used for the share prices and the returns. The shares outstanding are constant for 3 months, due to those being reported quarterly. The benchmark used for the US is the 10-year government bond yield of the US, and for the UK the 10-year government bond yield of the UK is used.

In this study similar results are expected as in the Bessembinder (2021) study regarding the concentration of the SWC. However, which companies and industries are responsible for the SWC will be different due to different periods and markets. In addition to this, a lower concentration would be logical following the results of Bessembinder (2023) over time. The research is relevant for investors and portfolio managers' portfolio constructions. The results bring valuable insights into wealth generation between different industries, sectors, and markets. Besides that, investors who have an advantage in identifying stocks with potentially higher SWC based on this study, can outperform the SWC benchmark. This is also the case for investors who have an advantage in identifying stocks with potentially lower SWC, which are excluded from the investments.

Results were collected for 9,337 US firms and 3,048 UK firms from the Global Financial Database, spanning the period from 1800 to 1930. In the US, shareholders achieved a total net wealth of \$75.58 billion compared to the benchmark, with 53.59% of firms generating positive wealth. In the UK, a total net wealth of £6.42 billion was realized, with 53.28% of firms contributing positively. In both markets most of the wealth got created through dividends. In the US, the majority of wealth was created by firms in the Transports, Utilities & Telecommunications, and Finance sectors. In the UK, the Finance, Consumer Staples, and Transports sectors were the top performers in wealth creation. Over time, wealth creation became increasingly concentrated in both markets, with the UK experiencing a higher level of concentration. In the US, the top 50 firms accounted for 58.09% of the total net wealth, whereas in the UK, the top 50 firms contributed 78.43% of the total net wealth. Moreover, the proportion of firms generating negative wealth grew during the last 20 years of the studied period.

The structure of this paper is as follows: this chapter is the introduction; in chapter two, the theoretical framework, an in-depth analysis is performed regarding SWC by discussing previous studies and findings. In chapter 3 the hypotheses are developed. Chapter four contains an overview of the data, and the methodology is discussed. Chapter five offers an overview of the results. In chapter six robustness checks are performed. In chapter seven the results are discussed, and the last chapter contains the conclusion of the paper.

2. Theoretical Framework

This section aims to provide a comprehensive overview of Shareholder Wealth Creation, particularly in the United States and the United Kingdom. The framework shows how traditional finance models explain returns, and how this is contradicting to what can be observed in real life returns due to the long horizon and skewness.

2.1. Shareholder Wealth Creation

When discussing Shareholder Wealth Creation (SWC), it first must be very clear what is meant by SWC. The definition of SWC will drive the measurement of the observed data and serves as the fundament of the master thesis. The same definition of SWC is used as in the paper of Bessembinder (2023). SWC quantifies the overall change in wealth experienced by a company's shareholders during the period its shares were publicly traded. This measurement checks whether shareholders' wealth increased or decreased over that timeframe. To determine this, SWC compares the actual wealth accumulation with what would have been achieved if the invested capital had earned returns equivalent to United States 10-year Government Bond for the US, and United Kingdom 10-year Government Bond for the UK.

SWC is a form of financial performance measurement and stands apart from market returns by accounting for various factors such as dividends distributed to shareholders, as well as actions like share issuances and repurchases. Unlike market returns, SWC acknowledges the impact of these elements, including the dividends that shareholders receive, which are not reinvested in the stock market. It also differentiates in the form of reporting, because SWC is reported in currency terms rather than percentage terms. It is studied on a monthly basis but measured as of the end of the sample period. The SWC is studied for two countries: the US, and the UK. The period for which these two countries are studied is between 1800 and 1930.

For the US SWC was studied first in earlier research done by Bessembinder (2018). This study examined 25,967 different US stocks between July 1926 and December 2016. During this time these individual stocks created on an aggregate level \$34.82 trillion of shareholder wealth. The company which created the largest amount of wealth in this period was Exxon Mobil, which created \$1.002 trillion. The top three is complemented by Apple and Microsoft which both account for \$745.7 billion and \$629.8 billion despite their lifetime being more than twice as short as Exxon Mobil. The top five of the firms listed account for 10.07% of the wealth

created, and 39.29% of the wealth got created by the top 50 firms. In total 1,092 firms created 100% of the wealth, after which 9,579 firms offset the wealth destruction by the other 14,661 companies in the US. This shows that around 7.45% of the firms account for all the net wealth created in the US stock market from 1926 to 2016.

Recent studies by Bessembinder (2021 and 2023) extending to the years 2017 through 2022 reveal significant shifts in wealth creation. During this period, Apple emerged as the leading company in terms of wealth generated, amassing a total of \$2.68 trillion, followed by Microsoft with \$2.09 trillion, and Exxon Mobil, which fell to third place with \$1.22 trillion. By the end of 2022, the net wealth created reached \$55.11 trillion, marking an increase of \$20.29 trillion over the preceding six years. This increase in wealth creation has been accompanied by a notable rise in concentration. From 1926 to 2016, five firms were responsible for 10% of the net wealth created. This number decreased to four firms from 1926 to 2019, and further reduced to three firms from 1926 to 2022. Similarly, the concentration of firms responsible for 50% of the net wealth created also intensified, with the number decreasing from 90 firms in 1926–2016, to 83 in 1926–2019, and 72 in 1926–2022. The growing concentration of wealth creation is significantly influenced by market capitalization. The proportion of market capitalization of the top five firms relative to the largest 1,500 firms increased from 9.5% in 2016 to 16% in 2022, highlighting the increasing dominance of these leading firms in the wealth creation landscape.

On a global level SWC has been studied as well. In the newest research conducted by Bessembinder et al. (2023) stocks outside the US are also studied from 1990 to 2010. 63,785 firms created a total wealth globally of \$75.66 trillion. Just like the US stock market the best performing 0.25% of global stocks accounted for half of the global net wealth created, where 26,967 firms had positive wealth creation, and 36,818 had negative wealth creation. Out of the top 50 wealth creating companies 35 companies are American. The \$75.66 trillion net created wealth is created by the top-performing 2.4% of firms, and the remaining 97.6% of firms together matched the return of the one-month US Treasury bills. The research of Bessembinder et al. (2023) also shows that the concentration of the net wealth creation is more concentrated for non-US firms than US firms. The gross wealth concentration of the top-performing 1% firms reaches from 22.5% for Columbia to 71.7% for South Korea. For the US this number is 62.4% and for the UK this is 56.7%.

2.2. Traditional Finance Models

Traditional finance models, like the Modern Portfolio Theory and the Capital Asset Pricing Model, assert that people behave rational, that markets are efficient, and investors are rewarded for the risk they take on. These traditional finance models use several assumptions to predict outcomes, and they are build on single-period assumptions. However, the actual problems that arise to investors are often multi-period. To solve this problem, these models use sensible assumptions, and multi-period problems are solved as sequences of single-period problems (Elton & Gruber, 1997). One of the assumptions which is made is that the returns between these periods are indepent. Another assumption which is made by these traditional finance models is that the returns follow a normal distribution. Both these assumptions are not in line with the SWC results we have seen so far.

In the Modern Portfolio Theory (MPT) only the first two moments of a distribution are considered, the mean and variance and MPT assumes that the returns are normally distributed. However, evidence also shows that investors do not only have preferences for the mean, and variance, but also for skewness and kurtosis. Investors like the small chance of large returns, but are uncomfortable with having a small chance or large losses (Xiong & Idzorek, 2011).

2.3. Behavioral Finance Models

In contrast to the traditional finance models, behavioral finance models try to explain inefficiencies and mispricings in the financial markets. Simplifications and assumptions made by traditional finance models are questioned by behavioral finance, and evidence shows that often these assumptions do not hold. Research shows that the assumption that mean returns between periods are independent does not hold, and that these returns are actually related over time. The assumption that returns follow a normal distribution also does not hold, because evidence shows that real-world returns often contain fat tails and skewness (Elton & Gruber, 1997). Real-world annual returns more closely follow a lognormal return, but even then, are fat-tailed (Dimson et al., 2002).

2.4. Long Horizon Returns

Shareholder Wealth Creation is typically measured in currency terms rather than percentage returns, a perspective that has not been extensively researched. In contrast, long-term and

stock market returns have been more frequently analyzed. Security returns are often seen as the returns realized by investors; however, this is not always accurate, as returns are also influenced by the timing and magnitude of invested capital and withdrawals (Dichev, 2007). Dichev (2007) demonstrates that dollar-weighted returns are consistently lower than buy-and-hold returns globally. Specifically, buy-and-hold returns for the NYSE/AMEX (from 1926 to 2002) and the NASDAQ (from 1973 to 2002) were 9.9% and 9.6%, respectively, whereas the dollar-weighted returns were significantly lower at 8.6% and 4.3%. Furthermore, Bessembinder et al. (2023) report that average buy-and-hold returns globally are 1.05% per month and 14.77% annually. Although these figures reflect strong returns from broad market investments, only 49.4% of monthly observations and 51.9% of annual observations showed positive returns.

When considering the largest and most popular stock index in the world the S&P 500, which contains the 500 biggest companies in the US, research shows that the average monthly return of the S&P 500 is 0.79% per month over a period of around 50 years (Dichtl, 2019). Considering the entire US stock market, the cumulative annualized returns on equities were 10.1% over a 100-year period from 1900 to 2000, achieved by buying and holding the entire US equity market (Dimson et al., 2002). Significant disparities are evident when examining long-term individual returns for US stocks. Bessembinder (2024) analyzed the performance of US stocks from December 1925 to December 2023, finding that 51.6% of stocks generated negative cumulative returns over this period. The considerable variation in individual stock performance is reflected in the mean cumulative compound return of 22,840%, compared to a median cumulative compound return of -7.41%. This disparity is further illustrated by the wide gap between the 10th percentile, where the lowest annualized compound return is -77.77%, and the 90th percentile, where the highest annualized compound return is 36.11%.

In comparison to the US equity returns, the UK equity returns are similar. The cumulative annualized return of the UK equity market over the same 100-year period is 10.1%. What should be noted is that the inflation in the UK was higher compared to that of the US, so the real return on equities is lower for the UK (Dimson et al., 2002). Acheson (2009) conducted another study that examined the returns of the British stock market between 1825 and 1870. During this period, the mean annual total return was 9.28% based on market capitalization weighting, while the unweighted return was 10.16% annually. These returns were not significantly different from the unweighted US returns when low dividends were

considered. However, the substantially higher coefficient of variation in the US returns suggests that, although the returns were similar, the risk associated with UK stocks was lower during the period from 1825 to 1870.

2.5. Dividend Returns

Long horizon returns often also consist of a dividend return part which is reinvested into the stock market to gain a higher cumulative total return in the long run. The S&P 500 index total return from 1926 to 2023 consisted for 32% of dividend returns, and 68% of capital gains returns (Watts et al., 2023). Dividends can also act as a cushion during declining markets, since dividend return increase the return during declining markets. Research done by Fuller and Goldstein (2011) show that dividend paying stocks on the NYSE, AMEX and Nasdaq from 1970 to 2007 outperform non-dividend paying stocks by during all market conditions, and during declining markets by 1 to 2% per month.

Acheson (2009) highlights the crucial role of dividends in the US and UK stock markets during the period from 1825 to 1870, noting that dividend returns constituted a significant portion of total returns. This contrasts with modern equity markets, where a reduction in the number of dividend-paying firms has been observed. This shift is largely attributed to an increasing prevalence of publicly traded firms exhibiting characteristics typically associated with non-dividend payers, such as smaller size, lower earnings, and larger investments relative to earnings (Fama & French, 2001). Therefore, the importance of the impact of dividends on total returns should not be neglected during 1800 till 1930 and will be studied to a further extent in this research by splitting up the total return component into capital gains returns and dividend returns.

2.6. Skewness

One of the reasons that Shareholder Wealth Creation is concentrated in only a few companies is due to positive skewness. Positive skewness is observed in both single-period and multi-period returns and is already studied since Simkowitz and Beedles (1978) demonstrated that individual stock returns are positively skewed, and which is reduced by diversification.

How big the effect is of positive skewness when compounding the single-period returns is determined by the single-period volatility and the time horizon of compounding. Faragó and Hjalmarsson (2022) show in their paper that increasing the single-period volatility

has a big effect on the degree of skewness seen when compounding. By increasing the time horizon, the skewness increases non-linearly which magnifies the positive skewness. As an example for the single-period volatility effect, we take the single-period gross return, which is 1%, and a standard deviation of 0.05 and 0.11. When using a horizon of 120 months, the skewness changes from 1.93 to 10.2. An example for the compounding effect with a longer horizon we change the horizon of the standard deviation 0.11 to 360 months instead of 120 months. By doing so the skewness increases from the previously stated 10.2 to 513. So, with higher volatility and a longer time horizon the skewness in returns will be very high (Faragó & Hjalmarsson, 2022).

Real observed skewness in the last study where Bessembinder (2018) reported data on skewness shows that the skewness of individual stocks on the monthly horizon was 6.96. This study only examined US stocks. A skewness of 8.71 and 8.99 on a global level, and on a global level excluding the US is reported in the more recent study of Bessembinder et al. (2023). This implies that the monthly returns outside the US have greater skewness compared to the US. When looking at the skewness in the returns over the lifetime horizon, the skewness of the individual stocks in the US is 33.50. The skewness for the individual stocks in the UK is 15.55.

3. Hypotheses Development

This paper will try to show the SWC for the US and the UK between 1800 and 1930. From Bessembinder (2018, 2021 and 2023) we can conclude that SWC is getting more concentrated throughout the period of 1926 to 2022. When reflecting this on this master thesis, an increase of concentration of SWC from 1800 to 1930 can be expected:

***Hypothesis 1:** Shareholder Wealth Creation will get more concentrated over time.*

Another trend which can be seen in the papers of Bessembinder (2018, 2021 and 2023) is the number of firms which accounted for the negative SWC. This increased over time during the studied period. When incorporating this trend in the master thesis, an increase in the percentage of firms with negative SWC can be expected:

***Hypothesis 2:** The percentage of firms with negative Shareholder Wealth Creation will increase.*

As shown in earlier research regarding the concentration of the wealth creation for US firms and non-US firms, Bessembinder et al. (2023) show that the concentration of the net wealth is higher for US firms than for non-US firms. When taking this into consideration in this master thesis we could expect that the concentration of the wealth creation is therefore higher in the UK, than in the US:

***Hypothesis 3:** The concentration of wealth creation is higher in the UK stock market than in the US stock market.*

4. Data & Method

4.1. Data Sample

The data used in this master thesis is obtained from the Global Financial Data (GFD) database. Data on close prices, total returns, and shares outstanding is obtained for all common stocks in the US and the UK database from 1800 to 1930. This is done with stock split adjustments, and without stock split adjustments, so that the returns and market capitalization are correctly included in the research. Using the filters in GFD results in data for 11,232 US common stocks, and 3,844 UK common stocks. The benchmark is also obtained from the GFD database. For the US the US 10-year government bond yield is used, and for the UK the UK 10-year government bond yield is used.

In the US Stocks database several filters are used to get the right stocks. First the country selected is the United States, second the common stock filter is selected to only download data on common stocks. The start and end year are set on 1800 and 1930 which results in 11.232 common stocks for the US. The same filters are used for the UK Stocks database, and the selected country is the United Kingdom which results in 3.844 common stocks for the UK.

By having collected all relevant US and UK common stocks the data is downloaded by using Rstudio and the API for GFD. To download the data two APIs are used: the Multi Series with Price Data API and the Fundamentals API. With the Multi Series with Price Data API data is collected on split adjusted and not split adjusted closing prices and the total returns, and with the Fundamentals API the data for the shares outstanding is collected. Because the research uses a period from 1800 to 1930 the data varies in timeframe from monthly, quarterly and annual periods. For the shares outstanding no monthly data is obtained, because the most detailed data available is quarterly data.

4.2. Descriptive Statistics

A first impression of the results is shown by the descriptive statistics. The descriptive statistics for the data are presented in [Table 1A](#) and [Table 1B](#). [Table 1A](#) shows the descriptive statistics of the US stock market. The mean return of the US stock market is 1.24% per month of which 59.66% of the returns were positive. The average dividend return is 1.78% and the average capital gains return is 0.85% per month. What can be noticed is that for the total return and capital gain return the median is 0. The reason for this is that the returns for firms are not

always variable monthly. This also causes the min, max and skewness to be very low and high. The average SWC per month is \$51,000 per month with only 33.72% of the observations being positive. The descriptive statistics show that the SWC observations for the dividend part had a minimum of -15.55 and a maximum of 744.15 with very positive skewness and a high positive percentage. This follows the logical explanation that dividends are almost always positive.

Table 1B shows the descriptive statistics of the UK stock market. The mean return of the UK stock market is 0.78% per month of which 56.49% of the returns were positive. The average dividend return is 1.32% and the average capital gains return per month is 0.53% per month. For the UK the min, max and skewness for the returns are low and high as well due to these returns also not always being variable monthly. The average SWC per month is £9,000 per month with 32.81% of the observations being positive. What is also noteworthy for the UK is that the SWC observations are heavily positively skewed.

4.3. Method

To ensure accurate analysis, the data sample must be adjusted for proper interpretation. Specifically, missing months were incorporated into the sample, allowing for results to be interpreted on a monthly basis. This adjustment expands the dataset to encompass 1,572 months of data.

To make sure that all shares outstanding data can be interpreted on a monthly timeframe the quarterly, and annual data is changed to monthly data by using the Last Observation Carried Forward (LOCF) method. The method stops when the last observation of the common stock has been reached. This way the last observed shares outstanding is used each month, so that all SWC can be measured on a monthly timeframe.

Data on closing price and returns are modified as well, due to the inconsistency between monthly, quarterly and yearly data. When there are missing closing prices between observed closing prices, the previous price is used following the same methodology as Bessembinder (2018, 2021 and 2023). However this is only done when there is not more than 12 months in between these observations due to the inconsistency in the data. The same method as applied in the papers of Bessembinder to calculate the change in SWC is used. To calculate the change in SWC equation (1) is applied on the collected data:

$$W_t - W_{t-1} * (1 + R_{ft}) = I_{t-1} * (R_t - R_{ft})$$

Equation 1 Shareholder Wealth Creation Single Period

Where W_t stands for the total wealth in time t , W_{t-1} stands for the total wealth in time $t - 1$, R_{f_t} stands for the risk-free rate in time t , I_{t-1} stands for the invested amount in the risky asset in time $t - 1$, and R_t stands for the return of the risky asset in time t . By summing all the changes in SWC the total SWC is calculated, with the corresponding formula in which FV stands for the interest accumulation factor when compounding the risk-free rate:

$$W_t - W_0 * FV_{0,T} = I_0 * (R_1 - R_{f1})FV_{1,T} + I_1 * (R_2 - R_{f2})FV_{2,T} + \dots + I_{T-1} * (R_T - R_{fT})$$

Equation 2 Shareholder Wealth Creation Multi Period

In contrast to the data which is used by Bessembinder (2018, 2021, and 2023) the data used in this thesis is split up in two components: capital gains and dividend gains. For the dividend gains and capital gains, split adjusted stock data is used. In this way the correct dividend and capital return is computed from the total return data. To get the correct initial investment for each period not split adjusted stock data is used. The initial investment is equal to the market capitalization in that period which is calculated by using the not split adjusted closing price and multiply this with the shares outstanding. Equation 3 shows how the SWC is calculated:

$$SWC = (NSAC_0 * SO_0) * (RC_1 + Rd_1 - R_{f1}) * FV_{1,T} + \dots + (NSAC_{T-1} * SO_{T-1}) * (RC_T + Rd_T - R_{fT})$$

Equation 3 Shareholder Wealth Creation Multi Period

Here, $NSAC_0$ represents the non-split adjusted closing price, which is then multiplied by the number of shares outstanding. The total return is composed of two components: the capital gains return, denoted as RC_t , and the dividend return, denoted as Rd_t .

4.4. Limitations of the Method

As with any research, this study is subject to certain limitations. The main constraint was the time limitation for the scope of data collection. Specifically, data was only retrieved in the domestic currency of each market. For the United States, this involved collecting closing prices exclusively in U.S. Dollars, while for the United Kingdom, the data was limited to closing prices in British Pounds. Although this poses challenges for direct currency-based comparisons, it should be noted that comparative analysis remains possible.

5. Results

This chapter examines the findings derived from [equation \(3\)](#), illustrating the SWC outcomes for both the US and the UK. It presents outcomes for specific companies and industries, both with and without the incorporation of the Risk-free Rate and Interest Accumulation Factor (IAF) for robustness purposes. The wealth creation is also split up into dividend and capital gains and subsample analysis of five-year periods is performed. Furthermore, the results pertaining to the hypotheses from [Chapter 3](#) are also discussed.

5.1. Results US

5.1.1. Shareholder Wealth Creation US

I apply [equation \(3\)](#) to each of the 9,337 US common stocks out of the 11,233 US common stocks due to 1,896 US stocks missing shares outstanding data. By summing the outcomes across all firms, the total SWC is acquired, and results in a net SWC of \$75.58 billion for the US from 1800 till 1930. During these 130 years, 4,333 US firms created negative SWC (46.41% of the total), and 5,004 US firms created positive SWC (53.59% of the total). The firms with positive SWC created a gross SWC of \$155.57 billion, while the firms with negative SWC created a reduction in SWC of \$79.99 billion. This is graphically shown in [Figure 1A](#).

[Table 2A](#) reports on SWC for the 50 firms with the largest lifetime SWC at the end of 1930 in the US. The top 5 contributors consist of ExxonMobil (\$4.51 billion), GE Aerospace (\$2.30 billion), Motors Liquidation Corp. (\$2.22 billion), American Telephone & Telegraph Co. (\$1.86 billion), and Marathon Oil Corp. (\$1.60 billion). These 5 companies totalled a lifetime wealth creation of \$12.49 billion which equals almost 17% of the total net wealth created during the 130 years. Out of these 5 companies ExxonMobil was earliest present in the dataset starting from 1883, GE Aerospace was introduced in 1892, Motors Liquidation Corp. was first observed in 1909, American Telephone & Telegraph Co. in 1900 and Marathon Oil Corp. first observation was in 1901. The earliest observed firm out of the top 50, Champlain National Corp., got introduced in 1825 and created lifetime wealth of \$418.58 million. The latest observed firm out of the top 50 is Deere & Co which got introduced in 1927 and created lifetime wealth of \$737.59 million in only 3 years. Most companies out of the top 50 come from the Transports industry which is represented by 13 firms. The second most represented industry is Utilities & Telecommunications, and the third most frequent observed industry is the Consumer Staples industry.

[Table 3A](#) shows the total wealth creation per industry. The best performing industry over the 130 years period was the Transports industry with lifetime wealth creation of \$13.72 billion, the top 3 is completed by the Utilities & Telecommunications industry with lifetime wealth creation of \$12.81 billion, and the Finance industry with lifetime wealth creation of \$10.50 billion. The Health Care Industry was the only sector that resulted in a destruction of shareholder wealth, amounting to \$190.61 million. In the last column of [Table 3A](#), I present the ratio of wealth creation to the number of months observed over a span of 130 years. Consumer Staples and Energy exhibit the highest ratios, at 3.98 and 3.98 respectively, indicating that despite being less frequently observed in the dataset, they have created relatively high wealth. Conversely, the lowest ratio is found in the Finance industry, at 0.25 respectively, excluding the Health Care industry which has a negative ratio. What is striking is that despite Finance being the third best performing industry, it has the lowest ratio. This is due to the fact that over half of the observations pertain to the Finance industry.

The bottom 25 firms which created the least amount of SWC are reported in [Table 4A](#). The firm which destructed the most amount of wealth was Transamerica Corp. which destructed \$1.374 billion. Most companies on the list remain publicly traded after the end of 1930, however 8 companies out of the 25 got delisted before 1930. The Finance industry has the highest number of companies with negative SWC in the sample. This may also account for the low ratio observed in the final column of [Table 3A](#).

I also report the wealth created without incorporating the Risk-free Rate and the Interest Accumulation Factor (IAF) into the equation as a robustness check. A total of \$72.55 billion wealth was created without these two factors. The percentage of companies which had a negative SWC is 35.77% in contrast to the 46.41% when incorporating both the Risk-free Rate and the IAF. [Table 5A](#) shows the top 25 firms with the highest lifetime wealth creation. Again ExxonMobil created the most wealth with \$2.60 billion. The top 5 is completed by the same companies as with the Risk-free Rate. American Telephone & Telegraph Co. created \$2.30 billion, GE Aerospace created \$2.22 billion, Motors Liquidation Corp. created \$2.10 billion and Marathon Oil Corp. created 1.53 billion.

The total return data can be split up in two components: dividends and capital gains. By doing so the total SWC can be split into SWC due to dividends, and SWC due to capital gains. A total of \$44.19 billion out of \$72.55 billion is attributable to dividends (60.91% of total). 1.39% of the companies had negative dividend SWC, and 98.61% of the firms had

positive dividend SWC. [Table 6A](#) shows the top 25 firms with the highest lifetime wealth creation due to dividends. American Telephone & Telegraph Co. created the most wealth of \$1.29 billion, followed by ExxonMobil which created \$1.23 billion. Penn Central Corp. created the third most SWC of \$1.02 billion. The top 5 is complemented by Marathon Oil Corp. and Motors Liquidation Corp., the former created \$856.38 million and the latter created \$846.44 million in wealth due to dividends.

Wealth which got created by capital gains totalled \$28.36 billion out of \$72.55 billion (39.09% of total). In total 48.60% out of all companies had a negative wealth creation through capital gains (51.40% had positive wealth creation through capital gains). In [Table 7A](#) I report the top 25 firms which created the most shareholder wealth through capital gains. GE Aerospace created the most shareholder wealth with \$1.88 billion, followed by ExxonMobil Corp. \$1.37 billion, Kraft Inc. \$1.33 billion, Motors Liquidation Corp. \$1.26 billion. The last firm out of the top 5 is Consolidated Edison Co. of New York Inc. which created \$1.10 billion of wealth through capital gains.

An even more interesting analysis arises from the separation of total returns into dividend returns and capital gains returns. In [Table 8A](#) the ratio between dividend wealth creation and capital gains wealth creation is shown for the top 50 firms with the largest wealth creation (without the Risk-free Rate and IAF incorporated). The top 5 firms mean dividend wealth creation accounted for 42.93% of the total wealth creation (57.07% of the total wealth creation was created through capital gains). For the whole top 50 firms the average wealth creation through dividends was 37.55%, whilst the capital gains accounted for 62.45% of the wealth creation. This differs from the overall sample, where dividends contributed to over 60 percent of wealth creation, while capital gains accounted for less than 40 percent.

To analyze wealth creation throughout time I showcase in [Table 9A](#) the wealth creation in periods of 5 years. The number of firms in the database ranges from 36 firms during 1800-04 to 4990 firms during 1925-1929. The percentage of firms with positive wealth creation ranges from 16.67% in 1800-04 to 69.74% in 1900-04. In 9 out of 27 periods the net wealth creation was negative. However, the latest negative net wealth creation period is only one year 1930 since the dataset stops at the start of 1931. The negative net wealth creation in this period follows logical reasoning, since the Great Depression started during this period.

5.1.2. Shareholder Wealth Concentration US

I will now discuss the results of the concentration of the shareholder wealth. Besides showing the lifetime wealth creation of the top 50 firms in [Table 2A](#), the percentage of how much each company contributed to the total wealth is also shown. ExxonMobil Corp. contributed on its own 5.97% to the the total net wealth, followed by GE Aerospace with 3.05% and Motors Liquidation Corp. 2.93%. The top 5 totals 16.54% of the total net SWC, the top 10 totals slightly more than 25% of the net SWC, the top 25 totals 41.02%, and the top 50 totals almost 60% of the total net SWC.

When excluding the Risk-free Rate and IAF, the concentration of shareholder wealth is reported in [Table 5A](#). ExxonMobil Corp. contributed 3.58% to the total net SWC, American Telephone & Telegraph Co. contributed 3.17%, and GE Aerospace contributed 3.06% to the total. The top 12 companies contributed around 25% of the total net SWC without the Risk-free Rate, and the top 25 companies contributed 37.85% to the total net SWC. Without incorporating the Risk-free Rate the concentration is thus lower, compared to the SWC with the Risk-Free Rate.

In [Table 6A](#), the biggest contributor of the dividend component, American Telephone & Telegraph Co., contributed 2.91% to the total net SWC due to dividends, followed by ExxonMobil Corp. with 2.79% and Penn Central Corp. with 2.30%. The top 25 firms combined contributed 29.06% to the total net SWC due to dividends. This concentration is lower than the total net SWC concentration. For the capital gains component in [Table 7A](#) the concentration of net capital gains SWC is higher than for the total net SWC concentration. GE Aerospace contributed 6.65%, followed by ExxonMobil Corp. with 4.82% and Kraft Inc. with 4.68%. The total contribution of the top 25 firms is 66.26% of the total net SWC due to capital gains.

The gross wealth concentration throughout time is shown in [Table 9A](#). The last three columns of the table show the percentage of firms which account for 10, 25 and 50% of the gross wealth for each 5 year period. For example, the percentage of firms which account for 10% of the gross wealth of \$52.78 billion during 1925-29 is 0.08% (4 out of 4,990 firms), 0.28% of the firms account for 25% of the gross wealth (14 out of 4,990 firms), and 1.08% of the firms accounted for 50% of the gross wealth (54 out of 4,990 firms). What can be concluded from Exhibit 8A is that the concentration of the SWC gets higher over time. The mean percentage of firms accounting for 10, 25, and 50% of the gross wealth is 0.90%, 1.38% and 2.64% for the

first half of the datasample, while for the second half of the sample the percentages are: 0.16%, 0.39% and 1.49%. The increase in concentration of wealth over time is also graphically shown in [Figure 2A](#).

5.2. Results UK

5.2.1. Shareholder Wealth Creation UK

[Equation \(3\)](#) is applied to 3,048 UK common stocks out of the total 3,844 UK common stocks because there is missing shares outstanding data for 796 firms. From 1800 till 1930 the UK totalled a net SWC of £6,417.66 million. Out of the total UK stocks, 1,424 firms created negative SWC (46.72% of the total), and 1,624 firms created positive SWC (53.28% of the total). In total the firms which had positive wealth created £13,530.07 million. The firms which destructed wealth had total loss of £7,112.41 million. For the United Kingdom this is graphically shown in [Figure 1B](#).

For the UK [Table 2B](#) reports the top 50 firms with the most wealth created over 130 years. The top 5 consists of the Bank of England (£1.21 billion), Sansinena Frozen Meat Ltd. (£555.76 million), East India Company (€243.12 million), Imperial Group P.L.C. (£185.47 million), and Midland Railway Co. (£173.32 million). These 5 firms totalled a wealth creation of £2.37 billion of wealth which is more than 36% of the total net wealth created over 130 years in the UK. The earliest observed firms of the top 50 were the Bank of England, and East India Company which both were first observed in 1800. Courtaulds P.L.C. is the firms which got introduced as the last firm in the top 50 in 1913 and created a lifetime wealth of £49.35 million. The top 50 firms are dominated by the Finance and Transports industries. The Finance industry is represented most often with 22 firms, and the Transports industry contains 15 firms in the top 50.

In [Table 3B](#) the total wealth creation per industry is shown. The best performing industry in 130 years was the Finance industry with lifetime wealth creation of £3.14 billion which is almost half of the total net wealth created, followed by the Consumer Staples industry with £1.02 billion and the Transport industry with £959.43 million. The Communications industry and the Health Care industry both destructed wealth. The former destructed wealth with £13.17 million and the latter destructed wealth with £2.85 million. Again, in the last column the ratio between the wealth created and the number of firms observed in months is shown. The Finance industry and the Consumer Staples industry have the highest ratio, which

means these industries performed relatively well. In contrast the Transports industry which has the third highest lifetime wealth creation only has a ratio of 0.64 which means that relative to the number of observations the performance is worse. When comparing the Finance industry to the Transports industry the number of observations is similar, but the amount of wealth created is more than three times as high for the Finance industry.

I present the 25 firms that created the least amount of SWC in [Table 4B](#). The firm that destroyed the most wealth was London Midland and Scottish Railway, with a destruction amounting to £92.61 million. Only 4 of these 25 companies remained publicly traded after the end of 1930. The industry with the highest number of firms experiencing negative SWC is the Transports industry, accounting for 19 out of the 25 firms. This predominance explains why the percentage of wealth creation in the Transports industry is so low in [Table 3B](#), especially when compared to the Finance industry, which has only two firms among the bottom 25.

The results of the SWC without incorporating the Risk-free Rate and the Interest Accumulation Factor (IAF) into the equation are shown in [Table 5B](#) for the UK. Without these two factors, a total of £4.08 billion in wealth was created. The percentage of companies with negative SWC is 34.81%, compared to 46.72% when both the Risk-free Rate and the IAF are included. In this adjusted analysis, Sansinena Frozen Meat Ltd. created the most wealth, amounting to £308.91 million. The top 5 firms differ from those in the analysis that includes the Risk-free Rate. Imperial Group P.L.C. is second with £199.27 million, the Bank of England is third with £195.17 million, London & North-Western Railway is fourth with £125.71 million, and Coats Ltd. is fifth with £89.06 million.

The total SWC for the UK without the Risk-free Rate and IAF is also split up into SWC due to dividends, and SWC due to capital gains. Of the £4.08 billion total wealth created, £3.32 billion (81.37%) is attributable to dividends. Among the companies, 10.93% had negative dividend SWC (89.07% had positive dividend SWC). [Table 6B](#) lists the top 25 firms with the highest lifetime wealth creation from dividends. The Bank of England leads with £174.12 million, followed by London & North-Western Railway with £147.64 million. Great Western Railway Co. ranks third with £102.04 million. The top 5 is rounded out by Shell Transport and Trading Co. and Imperial Group P.L.C., which created £70.88 million and £70.43 million in dividend wealth, respectively.

Wealth created through capital gains amounted to £754.16 million out of the total £4.08 billion (18.63%). Out of all firms 52.07% created negative SWC through capital gains

(47.93% created positive SWC through capital gains). [Table 7B](#) lists the top 25 firms that generated the most shareholder wealth via capital gains. Sansinena Frozen Meat Ltd. led with £283.50 million, followed by Imperial Group P.L.C. with £128.84 million, Anglo-American Debenture Corp. Ltd. with £41.42 million, and Guinness P.L.C. with £35.45 million. The fifth highest was Royal Insurance Co. Ltd., which generated £31.70 million in wealth through capital gains.

[Table 8B](#) displays the ratio between wealth creation from dividends and capital gains for the top 50 firms with the highest wealth creation in the UK (excluding the Risk-free Rate and IAF). For the top 5 firms, the mean dividend wealth creation accounted for 63.84% of the total wealth creation, with the remaining 36.16% generated through capital gains. Across the entire top 50 firms, the average wealth creation through dividends was 76.50%, while capital gains contributed 23.50%. What is noticeable, is the big difference between the mean dividend wealth creation percentage and capital gains wealth creation percentage of the top 5 firms compared to the top 50 and the whole sample, where the wealth through dividends is significantly higher (or the wealth through capital gains is lower).

In [Table 9B](#) the wealth creation in periods of 5 years is reported. The number of firms in the database ranges from 3 firms during 1800-04 to 1043 firms during 1895-1899. The percentage of firms with positive wealth creation ranges from 19.05% in 1810-14 to 68.94% in 1895-99. In 7 out of 27 periods the net wealth creation was negative. Where the largest wealth destruction period was between 1845-49 with wealth destruction of £1.15 billion.

5.2.2. Shareholder Wealth Concentration UK

I now discuss the results of the concentration of the shareholder wealth for the UK. The percentage of how much each company of the top 50 firms contributed to the total wealth is shown in [Table 2B](#). The Bank of England alone contributed 18.84% to the total net wealth, followed by Sansinena Frozen Meat Ltd. with 8.66% and the East India Company with 3.79%. The top 5 firms together account for 36.88% of the total net Shareholder Wealth Creation (SWC), the top 10 firms for 47.46%, the top 25 firms for 62.77%, and the top 50 firms for nearly 80% of the total net SWC. It is remarkable that the Bank of England, on its own, accounts for almost 20% of the total net wealth. This is logical given that the stock has been included in the dataset for almost 130 years. Similarly, it is extraordinary that Sansinena Frozen Meat Ltd. accounts for nearly 10% of the total net wealth despite being in the database for only 10 years.

By excluding the Risk-free Rate, the concentration of shareholder wealth differs and is reported in [Table 5B](#). Sansinena Frozen Meat Ltd. contributed 7.58% to the total net SWC, Imperial Group p.l.c. contributed 4.88%, and the Bank of England contributed 4.79% to the total. The top 10 companies contributed around 31.18% of the total net SWC without the Risk-free Rate, and the top 25 companies contributed 46.42% to the total net SWC. Without incorporating the Risk-free Rate the concentration is thus lower in the UK, compared to the SWC with the Risk-Free Rate.

In [Table 6B](#), the biggest contributor of the dividend component, the Bank of England, contributed 5.24% to the total net SWC due to dividends, followed by London & North-Western Railway with 4.44% and Great Western Railway Co. with 3.07%. The top 3 alone contributes to more than 12% to the total net SWC, and the top 25 firms combined contributed 38.45% to the total net SWC due to dividends. This concentration is lower than the total net SWC concentration.

For the capital gains component in [Table 7B](#) the concentration of net SWC is higher than for the total net SWC concentration. Sansinena Frozen Meat Ltd. contributed on its own 37.59% to the net SWC through capital gains, followed by Imperial Group p.l.c. with 17.07% and Anglo-American Debenture Corp. Ltd. with 5.49%. So the top 2 firms account for more than 50% of the net SWC through capital gains. The total contribution of the top 25 firms is 111.75% of the total net SWC due to capital gains. This is intuitive with the fact that more than 54% of the firms created negative lifetime wealth through capital gains.

The gross wealth concentration throughout time for the UK is shown in [Table 9B](#). The last three columns of the table show the percentage of firms which account for 10, 25 and 50% of the gross wealth for each 5 year period. For example, the percentage of firms which account for 10% of the gross wealth of £1.32 billion, which is the best period in 1915-19, is 0.12% (1 out of 828 firms), 0.12% of the firms account for 25% of the gross wealth (1 out of 828 firms), and 0.36% of the firms accounted for 50% of the gross wealth (3 out of 828 firms). What can be concluded from [Table 9B](#) is that the concentration of the SWC gets higher over time. The mean percentage of firms accounting for 10, 25, and 50% of the gross wealth is 3.15%, 3.54% and 5.10% for the first half of the datasample, while for the second half of the sample the percentages are: 0.17%, 0.51% and 2.19%. However the first 5-year period only had 3 firms, of which 1 created already 10%, 25%, and 50% of the gross wealth which creates a distorted conclusion. But even when excluding this observation from the mean the

percentages of the first half of the sample are higher: 0.64%, 1.05% and 2.74%. The increase in concentration of wealth over time is also graphically shown in [Figure 2B](#).

5.3. US Market vs. UK Market

5.3.1. Shareholder Wealth Creation US vs. UK

When comparing the results of the United States stock market to the results of the United Kingdom stock market, several differences can be noted. First of all, over the 130 years of SWC the US stock market created \$75.58 billion, and the UK stock market created £6.42 billion. This difference is enormous, without considering the difference in currency terms. What is similar in both markets is the percentage of firms which created positive and negative SWC (53.59% of the US firms created positive SWC, and 53.28% of the UK firms created positive SWC). The markets differ only 31 percentage points from each other.

The composition of the wealth the industries created in both markets also differ significantly. The Consumer Staples, Energy, Finance, Transports and Utilities & Telecommunications industries in the US accounted all for more than 10% of the wealth creation, whilst in the UK only the Consumer Staples, Finance, and Transports industries accounted for more than 10% of the wealth creation. The main reason for this is that the UK is dominated by the Finance industry from 1800 till 1930 with this industry accounting for almost 50% of the total net wealth which is logical since London is considered one of the largest financial centres of the world since 1800. The industries which account for the bottom 25 firms are also different in both markets. In the US the variety of industries is large, in contrast to the UK where the Transports industry heavily dominates.

I now compare the results of the shareholder wealth creation for both markets without incorporating the Risk-free Rate and the IAF. The US created \$72.55 billion wealth of which \$44.19 billion comes from dividends, and \$28.36 billion comes from capital gains. For the UK £3.32 billion of the total wealth, which is £4.08 billion, comes from dividends and £754.16 million comes from capital gains. Both markets overall do not significantly differ in wealth composition. Both markets are dominated by wealth creation through dividends. However, the composition of dividend wealth and capital gains wealth for the top 50 firms is significantly different. Assessing the ratio between dividend wealth and capital gains wealth in [Appendix A.8](#) for the top 50 firms in both countries confirms this difference in composition. The mean dividend contribution in the US is 37.55% compared to the mean dividend contribution of

76.50% in the UK. Poor performance in capital gains returns explains this low contribution in the UK since the average capital gains return in the UK is 0.53% per month compared to the average capital gains return of the US, which is 0.85% per month.

By comparing the 5-year subsample periods of both markets in [Appendix A.9](#), it is evident that during the periods of 1810-1814, 1825-1829, and in 1930, shareholder wealth destruction overlaps in both markets. Interestingly, in both markets, most wealth destruction periods occur in the first half of the sample. Specifically, in the US, 6 out of 9 negative shareholder wealth creation periods occur in the first half, while in the UK, 5 out of 7 wealth destruction periods take place in the first half of the sample.

5.3.2. Shareholder Wealth Concentration US vs. UK

When comparing the wealth concentration in both markets, differences can be observed. The concentration of the UK stock market is higher compared to the US stock market by analysing [Appendix A.2](#). The top 50 in the UK account for 78.43% of the total net wealth, whilst in the US this percentage is 58.09%. This is logical because the Bank of England on its own accounts for more than 18% of the total net wealth in the UK. Without this individual stock performance, the differences would be lower. For the bottom 25 firms in [Appendix A.4](#) the concentration is fairly similar with a difference of 153 percentage points.

When comparing [Appendix A.5](#), without incorporating the Risk-free Rate and the IAF, differences in wealth concentration are evident. The top 25 firms in the US accounted for 37.84% of the total SWC, whereas in the UK, this figure is 46.42%. This higher concentration in the UK can be primarily attributed to the top 3 firms, which hold a significantly larger percentage of the total wealth compared to their US counterparts. If the influence of the top 3 firms were excluded, the concentration levels would be relatively similar between the two countries.

[Appendix A.6](#) and [A.7](#) further divide these results into dividend wealth creation and capital gains wealth creation. It is observed that both the dividend and capital gains wealth concentrations are higher in the UK than in the US. Specifically, while the top 25 firms in the US show a dividend concentration of 29.06% and a capital gains concentration of 66.26%, the top 25 firms in the UK exhibit a dividend concentration of 38.46% and a capital gains concentration of 111.75%. Again, the main reason why the concentration is higher in the UK

can be attributed to the top 3 firms, which significantly differ in percentage of the total amount of wealth from those in the US.

The concentration of the gross wealth over the 5-year periods in both countries is reported in [Appendix A.9](#) and looks similar for the 10% and 25% of gross wealth creation. Also when considering [Appendix B.2](#) where the shareholder wealth concentration over time is shown. In both countries the concentration of the wealth is increasing throughout the years. For both countries the mean in the first half of the sample is higher than in the second half, which shows this higher concentration as well.

5.4. Hypothesis Testing

By getting the results of the wealth creation in the US and the UK, we can now answer the hypotheses. Starting with the first hypothesis:

***Hypothesis 1:** Shareholder Wealth Creation will get more concentrated over time.*

As shown in section 4.3.2 of the results the shareholder wealth creation is indeed getting more concentrated over time. This is the case for both the US and the UK which is reported in [Appendix A.9](#) as well as graphically shown in [Appendix B.2](#). So, the Shareholder Wealth Creation is getting more concentrated over time.

I now continue to the second hypothesis:

***Hypothesis 2:** The percentage of firms with negative Shareholder Wealth Creation will increase.*

When looking at the percentage of firms which created positive wealth throughout the period 1800-1930, we can see in [Appendix A.9](#), and [Appendix B.3](#) that this percentage is declining over the past 5-year periods which means that the percentage of firms with negative Shareholder Wealth Creation is increasing. Therefore, the percentage of firms with negative Shareholder Wealth Creation increases.

The last hypothesis is stated below:

***Hypothesis 3:** The concentration of wealth creation is higher in the UK stock market than in the US stock market.*

[Section 5.3.2](#) and [Appendix A.2](#) showcase that the concentration of wealth creation is higher in the UK stock market compared to the US stock market, because of the big difference in the top 3 firms. Therefore, we can conclude that the concentration of wealth creation is higher in the UK stock market than in the US stock market.

6. Robustness Checks

To assess whether the methodology used in this master thesis is applied correctly a robustness check is performed. This is done by using the same data as used in the papers of Bessembinder (2018, 2021, and 2023), and check whether the results obtained with the methodology of this thesis are similar to those of the papers. I collected data on returns, prices and shares outstanding for all common stocks (share codes 10, 11, and 12) from the Center for Research in Security Prices (CRSP) monthly stock database. The methodology used in [section 4.3](#) of the thesis is applied on the data from 1926 to 2022 to replicate the paper of Bessembinder (2023). The results are shown in [Table 10](#).

By summing the outcomes across all 28,113 firms, the total SWC is acquired, and results in a net SWC of \$54.49 trillion for the US from December 1926 till December 2022. The result in the original paper of Bessembinder (2023) was \$55.1 trillion so there is not a real difference in shareholder wealth created. During these 86 years 58.02% of the total number of firms created negative SWC where this was 58.6% in the original study. I find that the top 50 firms during this period contributed 43.40% to the total shareholder wealth, which was 43.13% originally.

The differences between the results obtained using the original methodology and those derived from the methodology applied in this thesis are negligible and do not impact the overall conclusions of the study. However, there are several reasons for these minor discrepancies.

First, the methodology employed in this thesis does not account for delisting returns, as these are not available in the GFD database for both the US and the UK. Consequently, when applying the methodology to the CRSP data, delisting returns were also excluded, despite their inclusion in Bessembinder (2023). This exclusion contributes to the observed differences in the results.

Second, there are differences in data handling between the datasets. A slightly different approach was taken in treating missing shares outstanding and price data because, in the case of the GFD data, total returns had to be calculated, whereas this information is directly provided in the CRSP data. Additionally, the GFD database switches between monthly, quarterly and yearly data for prices, returns and shares outstanding. In instances where information was missing, the last available observation was carried forward to estimate the

new observation, consistent with the approach in Bessembinder (2023). However, this method was only applied when the gap between observations was less than 12 months to account for the inconsistency in the data. This situation does not arise in the CRSP data, where observations are consistently recorded on a monthly basis.

Due to the inconsistencies in the data of the GFD database and the CRSP database, it was not feasible to apply the exact methodology used in the original paper. Therefore, a modified methodology, as outlined in this thesis, was necessary.

7. Discussion

The results obtained in this research differ from previously published results by Bessembinder (2018, 2021, 2023). As a matter of fact, the results differ mostly in the number of firms which created positive and negative shareholder wealth. In the most recent paper of Bessembinder (2023) the percentage of firms with negative wealth creation is 58.62%, while in this research this percentage is 46.41% for the US, and 46.72% for the UK. To determine whether the proportions from Bessembinder's most recent study (2023) differ significantly from the results in this paper, I employ a two-proportion z-test. However after checking the data for normality I conclude that the data is not normally distributed, therefore also a chi-square test is performed. The results in [Table 11](#) show that the differences are statistically significant.

The results regarding the concentration of the wealth creation also differs from that of Bessembinder (2023). Where the top 50 firms of the US contributed to 43.13% of the total wealth from 1926 to 2022, the top 50 firms of the US contributed to 58.09% of the total wealth from 1800 to 1930. It is therefore interesting for future research to study where this difference comes from. The time periods are different, where this research analyses 1800 till 1930, Bessembinder (2023) studies wealth creation from 1926 to 2022. So, obtaining different results is logical, but this difference could also be attributed to the use of different data. Where Bessembinder (2023) uses the CRSP database, this research uses the GFD database.

The results of this research also contain additional information regarding the contribution of dividends, and capital gains and show how the Risk-free Rate and the IAF influence the creation of shareholder wealth. It is therefore also interesting to see how these factors impacted the wealth creation during 1926 and 2022.

What is consistent with the results of Bessembinder (2023) is that the wealth creation gets more concentrated throughout time. This is graphically shown in [Appendix B.2](#), where the gross net wealth concentration is shown. Also consistent with the results from Bessembinder (2023) is the increasing amount of firms which create negative shareholder wealth. This increases in the last 20 years of the samples, as graphically shown in [Appendix B.3](#).

8. Conclusion

In this thesis I have studied the wealth creation in the US and the UK from 1800 till 1930. Previous research examined the shareholder wealth creation in the US from 1926 till 2022, however no research has been conducted in the period before 1926. For the UK no research at all has been conducted about shareholder wealth creation. Therefore, the question that was studied in this research was: *“How does the Wealth Creation in the US and UK Public Stock Markets look between 1800 – 1930?”*

To answer this research question, data on closing prices, shares outstanding, and total return was obtained from the GFD database from 1800 till 1930 for all US and UK common stocks. This equals data for 9,337 US firms and 3,048 UK firms. To get results, [equation \(3\)](#) was used on all common stocks in the US and UK.

Investing in the US results in a total net wealth of \$75.58 billion for shareholders compared to the US 10-year government bond yield benchmark. 53.59% of the firms created positive wealth in the US. In the UK a total net wealth of £6.42 billion was created compared to the UK 10-year government bond yield benchmark, and 53.28% of the firms created positive wealth. Most of the wealth created came from the Transports, Utilities & Telecommunications and the Finance firms for the US, and for the UK the best performing industries were Finance, Consumer Staples and Transports.

In the US 58.09% of the net wealth got created by the top 50 countries which shows a high degree of concentration. For the UK this was even higher, with the top 50 firms accounting for 78.43% of the total net wealth. The gross wealth creation in both countries got more concentrated throughout time which is consistent with previous literature.

The results without incorporating the Risk-free Rate and the IAF show that in both countries most of the wealth got created through dividends. For the US \$44.19 billion out of \$72.55 billion was created through dividends, and for the UK £3.32 billion out of £4.08 billion got created through dividends. An interesting observation however is that the top 50 firms in the US have significantly different composition than stated above. 62.45% of the wealth of the top 50 firms got created through capital gains, while in the UK only 23.50% of the wealth of the top 50 firms got created through capital gains.

A robustness check using the data from Bessembinder's original study (2023) demonstrates that the methodology employed in this paper aligns with that of the original

study. Although the handling of missing values and inconsistencies in the GFD dataset differs from the approach used with the CRSP dataset, the resulting differences in outcomes are marginal. These variations do not alter the overall conclusions that can be drawn.

This study therefore concludes that over the observed 130-year period, SWC is concentrated in relatively few firms, with this concentration increasing over time. Both dividends and capital gains play significant roles in the wealth creation, depending on the type of market and type of company. The findings of this research warrant future investigation. In particular, future research should examine the contributions of dividends and capital gains in more detail for both markets, especially for the period after 1930. It would be particularly interesting to analyse how the wealth creation from dividends and capital gains evolves over time.

The results presented in this research are valuable for investors and portfolio managers. They should recognize that a small number of firms generate substantial wealth, and that this gets more concentrated over time. Additionally, it is important to note that dividends have created the most wealth when considering the entire market. The high concentration of wealth creation observed between 1800 and 1930 aligns with previous literature, indicating that future wealth creation outcomes are also likely to be highly concentrated.

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APPENDIX A Tables

A.1 Descriptive Statistics

Table 1A. Descriptive Statistics, United States

	N	Positive %	Mean	Median	Sd	Min	Max	Skewness
Total Return	1510413	59,66	0,012	0,000	0,495	-1,00	167,00	173,34
Dividend Return	327784	86,88	0,018	0,013	0,152	-19,22	51,59	187,63
Capital Gains Return	1510413	50,92	0,009	0,000	0,490	-1,00	167,00	177,56
Risk-free Rate	1572	100,00	0,003	0,004	0,001	0,00	0,01	0,11
Market Capitalization	1509033	100,00	7,101	0,828	41,098	0,00	3926,02	30,26
Shares Outstanding	1509033	100,00	0,130	0,010	0,625	0,00	43,50	22,34
SWC	1495990	33,72	0,051	-0,002	5,404	-1182,52	1300,17	9,89
SWC (Before Risk-free Rate and IAF)	1495990	59,94	0,048	0,000	4,286	-1132,50	892,20	-0,44
SWC Dividend	312887	86,98	0,141	0,015	1,52	-15,55	744,15	379,85
SWC Capital Gains	1495990	50,99	0,019	0,000	4,228	-1132,50	892,20	-6,27

Table 1B. Descriptive Statistics, United Kingdom

	N	Positive %	Mean	Median	Sd	Min	Max	Skewness
Total Return	729812	56,49	0,008	0,000	0,258	-1,00	99,00	162,15
Dividend Return	136517	80,76	0,013	0,021	0,31	-39,51	38,92	-14,81
Capital Gains Return	729843	49,94	0,005	0,000	0,269	-1,00	99,00	148,17
Risk-free Rate	1572	100,00	0,003	0,003	0,001	0,00	0,00	0,89
Market Capitalization	728994	100,00	1,137	0,221	4,748	0,00	201,43	14,45
Shares Outstanding	728994	100,00	0,179	0,020	0,992	0,00	43,59	17,61
SWC	724785	32,81	0,009	-0,001	1,284	-229,65	321,80	25,39
SWC (Before Risk-free Rate and IAF)	724785	56,58	0,006	0,000	0,326	-30,54	178,10	250,97
SWC Dividend	126688	81,01	0,026	0,004	0,18	-7,07	32,03	84,86
SWC Capital Gains	724816	49,92	0,001	0,000	0,304	-30,54	164,10	237,75

A.2 SWC, Top 50 Firms

Table 2A. Shareholder Wealth Creation United States, Top 50 Firms

Symbol	Company	Industry	Lifetime Wealth Creation		Cumulative		
			(\$ millions)	% of Total	% of Total	First Month	Last Month
XOM	ExxonMobil Corp.	Energy	4515,49	5,97	5,97	1883-01-31	1930-12-31
GE	GE Aerospace	Industrials	2301,58	3,05	9,02	1892-07-31	1930-12-31
MTLQQ1	Motors Liquidation Corp.	Consumer Discretionary	2217,04	2,93	11,95	1909-07-31	1930-12-31
T1	American Telephone & Telegraph Co.	Utilities & Telecommunications	1860,12	2,46	14,41	1900-07-31	1930-12-31
MRO	Marathon Oil Corp.	Energy	1604,83	2,12	16,54	1901-04-30	1930-12-31
BEAM3	Beam Inc.	Consumer Staples	1522,24	2,01	18,55	1904-10-31	1930-12-31
KRA1	Kraft Inc.	Consumer Staples	1400,49	1,85	20,40	1924-01-31	1930-12-31
ED	Consolidated Edison Co. of New York Inc.	Utilities & Telecommunications	1350,87	1,79	22,19	1885-04-30	1930-12-31
RAY2	Ray Consolidated Copper Co.	Materials	1281,98	1,70	23,89	1910-04-30	1927-09-30
PC2	Penn Central Corp.	Transports	1151,85	1,52	25,41	1849-01-31	1930-12-31
PHC1	Philadelphia Co.	Utilities & Telecommunications	973,58	1,29	26,70	1886-01-31	1930-12-31
DD2	E.I. du Pont de Nemours & Co.	Materials	962,20	1,27	27,97	1916-01-31	1930-12-31
KN1	Kennecott Corp.	Materials	927,57	1,23	29,20	1915-10-31	1930-12-31
DL2	Delaware, Lackawanna & Western Railroad	Transports	891,92	1,18	30,38	1855-10-31	1930-12-31
Q1	Chicago Burlington and Quincy Railroad Co	Transports	851,14	1,13	31,51	1857-04-30	1911-02-28
SMF2	Singer Co.	Consumer Discretionary	815,50	1,08	32,59	1895-10-31	1930-12-31
UP1	Union Pacific Railroad Co.	Transports	784,89	1,04	33,62	1885-01-31	1930-12-31
AT2	American Tobacco Co.	Consumer Staples	755,59	1,00	34,62	1892-09-30	1904-08-31
DE	Deere & Co.	Industrials	737,59	0,98	35,60	1927-07-31	1930-12-31
PG	Procter & Gamble Co.	Consumer Staples	716,84	0,95	36,55	1906-01-31	1930-12-31
ASF1	Atchison, Topeka & Santa Fe Railway Co.	Transports	691,29	0,91	37,46	1896-04-30	1930-12-31
PET1	Pacific Enterprises	Utilities & Telecommunications	688,01	0,91	38,37	1909-07-31	1930-12-31
LSM2	Lake Shore & Michigan Southern Railway Co	Transports	677,36	0,90	39,27	1869-07-31	1914-03-31
EKDKQ1	Eastman Kodak Co.	Consumer Discretionary	668,65	0,88	40,15	1902-07-31	1930-12-31
OT1	Otis Elevator Co.	Industrials	654,68	0,87	41,02	1899-04-30	1930-12-31
NP1	Northern Pacific Railway Co.	Transports	650,91	0,86	41,88	1896-10-31	1930-12-31
NVAL2	New Valley Corp.	Real Estate	650,35	0,86	42,74	1864-04-30	1930-12-31
UGI	UGI Corp.	Utilities & Telecommunications	631,16	0,84	43,58	1893-01-31	1930-12-31
NAB1	Nabisco Inc.	Consumer Staples	614,24	0,81	44,39	1898-04-30	1930-12-31
FL	Foot Locker Inc.	Consumer Discretionary	608,56	0,81	45,19	1912-01-31	1930-12-31
BEAM3B	American Tobacco Co.	Consumer Staples	592,67	0,78	45,98	1920-07-31	1930-12-31
CN1	New York Central Railroad	Transports	589,46	0,78	46,76	1870-01-31	1930-12-31
PU1	Pullman Inc.	Industrials	572,35	0,76	47,52	1871-01-31	1930-12-31
CAH2	Calumet & Hecla Mining Co.	Materials	570,46	0,75	48,27	1866-01-31	1923-08-31
SX1	Southern Pacific Co.	Transports	549,33	0,73	49,00	1885-06-30	1930-12-31
NYI1	New York Investors Inc.	Real Estate	500,47	0,66	49,66	1902-01-31	1930-12-31
CG1	Columbia Energy Group	Utilities & Telecommunications	491,38	0,65	50,31	1927-04-30	1930-12-31
NA2	North American Co.	Utilities & Telecommunications	484,42	0,64	50,95	1890-10-31	1930-12-31
FLMN1	Fleischmann Company	Consumer Staples	484,31	0,64	51,59	1918-04-30	1929-08-31
AN1	Amoco Inc.	Energy	473,24	0,63	52,22	1913-03-31	1930-12-31
FNB2	First National Bank of the City of New York	Finance	471,04	0,62	52,84	1865-01-31	1930-12-31
NBC1	National Bank of Commerce in New York	Finance	466,01	0,62	53,46	1839-04-30	1929-04-30
MC3	Michigan Central Railroad Co.	Transports	458,55	0,61	54,06	1848-01-31	1928-12-31
TTGT1	Title Guarantee Company	Finance	457,94	0,61	54,67	1895-01-31	1930-12-31
NFK1	Norfolk & Western Railway Co.	Transports	453,98	0,60	55,27	1896-07-31	1930-12-31
IL1	Illinois Central Railroad Co.	Transports	444,86	0,59	55,86	1853-01-31	1930-12-31
GCH1	General Chemical Co.	Materials	436,38	0,58	56,44	1901-07-31	1921-01-31
AEP	American Electric Power Company Inc	Utilities & Telecommunications	421,70	0,56	56,99	1909-03-31	1930-12-31
CNN2	Champlain National Corp.	Transports	418,58	0,55	57,55	1825-04-30	1930-12-31
MWK1	Mohawk Rubber Co.	Consumer Discretionary	413,13	0,55	58,09	1921-01-31	1930-12-31

Table 2B. Shareholder Wealth Creation United Kingdom, Top 50 Firms

Symbol	Company	Industry	Lifetime Wealth Creation		Cumulative		
			(£ millions)	% of Total	% of Total	First Month	Last Month
BOE1-LO	Bank of England Stock	Finance	1209,22	18,84	18,84	1800-04-30	1930-12-31
SFZM1-LO	Sansinena Frozen Meat Ltd	Consumer Staples	555,76	8,66	27,50	1910-10-31	1920-10-31
EIC1-LO	East India Company	Industrials	243,12	3,79	31,29	1800-04-30	1874-04-30
IMP1-LO	Imperial Group p.l.c.	Consumer Staples	185,47	2,89	34,18	1907-01-31	1930-12-31
MLR1-LO	Midland Railway Co. Ordinary	Transports	173,32	2,70	36,88	1836-01-31	1897-09-30
LNW1-LO	London & North-Western Railway	Transports	166,65	2,60	39,48	1846-10-31	1916-03-31
CTJP1-LO	Coats Ltd.	Consumer Discretionary	137,19	2,14	41,62	1891-01-31	1930-12-31
LYRW1-LO	Lancashire & Yorkshire Railway Co.	Transports	127,15	1,98	43,60	1836-04-30	1921-12-31
LSWR1-LO	London & South-Western Railway	Transports	125,70	1,96	45,56	1834-10-31	1922-12-31
GNSS1-LO	Guinness p.l.c.	Consumer Staples	122,05	1,90	47,46	1887-04-30	1930-12-31
KODK1-LO	Kodak Ltd.	Consumer Discretionary	86,98	1,36	48,81	1899-07-31	1902-05-31
GWR1-LO	Great Western Railway Co.	Transports	85,01	1,32	50,14	1835-10-31	1930-12-31
UBSC1-LO	Union Bank of Scotland Ltd.	Finance	83,48	1,30	51,44	1831-10-31	1930-06-30
RTP1-LO	Rio Tinto Ltd.	Materials	76,86	1,20	52,64	1873-10-31	1930-12-31
RYIN1-LO	Royal Insurance Co. Ltd.	Finance	70,46	1,10	53,73	1865-01-31	1930-12-31
PHXA1-LO	Phoenix Assurance p.l.c.	Finance	65,26	1,02	54,75	1838-07-31	1930-12-31
GLCK1A-LO	Gas Light and Coke Co.	Utilities & Telecommunications	64,47	1,00	55,75	1812-07-31	1898-12-31
LWBK1-LO	London and Westminster Bank, Ltd.	Finance	62,02	0,97	56,72	1834-03-31	1909-08-31
IMCG1-LO	Imperial Continental Gas Association	Utilities & Telecommunications	60,39	0,94	57,66	1832-10-31	1930-12-31
LOB1-LO	London and Birmingham Railway Co.	Transports	58,27	0,91	58,57	1833-07-31	1846-07-31
CLRW1-LO	Central London Railway Co.	Transports	56,09	0,87	59,44	1896-01-31	1930-06-30
TRMS1-LO	Trent & Mersey Canal	Transports	53,72	0,84	60,28	1806-07-31	1847-09-30
CUAS1-LO	Commercial Union Assurance Company p.l.c.	Finance	53,70	0,84	61,12	1862-01-31	1930-12-31
LLVC1-LO	Leeds and Liverpool Canal Co.	Transports	53,00	0,83	61,94	1806-07-31	1930-06-30
NBSC1-LO	National Bank of Scotland Ltd	Finance	52,87	0,82	62,77	1827-10-31	1924-06-30
LJSB1-LO	London Joint Stock Bank	Finance	52,14	0,81	63,58	1837-01-31	1918-10-31
AADB1-LO	Anglo-American Debenture Corp. Ltd.	Finance	51,26	0,80	64,38	1890-10-31	1930-06-30
COU1-LO	Courtaulds p.l.c.	Consumer Discretionary	49,35	0,77	65,15	1913-10-31	1930-12-31
GER1-LO	Great Eastern Railway Co.	Transports	48,17	0,75	65,90	1862-10-31	1922-12-31
NPBE1A-LO	National Provincial Bank of England Ltd.	Finance	46,66	0,73	66,63	1837-07-31	1930-12-31
SELG1-LO	South-Eastern Railway	Transports	45,89	0,72	67,34	1836-01-31	1922-12-31
LLDB1-LO	Lloyds Bank p.l.c.	Finance	45,50	0,71	68,05	1865-07-31	1930-12-31
BRMC1-LO	Burmah-Castrol plc	Energy	44,55	0,69	68,74	1903-10-31	1930-12-31
BFCB1-LO	Bradford Commercial Joint-Stock Banking Company, Ltd	Finance	43,39	0,68	69,42	1865-07-31	1904-01-31
GLBM1-LO	Globe Marine Insurance Co. Ltd.	Finance	43,31	0,67	70,09	1806-07-31	1893-04-30
LBSC1-LO	London Brighton & South Coast Railway	Transports	43,00	0,67	70,76	1837-10-31	1922-12-31
ULSB1-LO	Union of London & Smith's Bank Ltd.	Finance	42,55	0,66	71,43	1839-07-31	1918-04-30
BMCN1-LO	Birmingham Canal Navigation Co.	Transports	42,41	0,66	72,09	1811-04-30	1930-06-30
WSMB1B-LO	Westminster Bank Ltd.	Finance	41,09	0,64	72,73	1835-02-28	1930-12-31
TFVR1A-LO	Taff Vale Railway Co.	Transports	37,42	0,58	73,31	1862-04-30	1922-02-28
ESTT1-LO	Eastern Telegraph Co.	Utilities & Telecommunications	36,65	0,57	73,88	1872-10-31	1929-07-31
CB1-SH	Chartered Bank Ltd.	Finance	35,25	0,55	74,43	1871-01-31	1930-12-31
IMPI1-LO	Imperial Life Insurance Co. Ltd.	Finance	34,76	0,54	74,97	1806-07-31	1901-12-31
DSTB1A-LO	District Bank Ltd.	Finance	34,42	0,54	75,51	1832-10-31	1930-12-31
EXAC1-LO	Eastern Extension Australia & China Telegraph Ltd.	Utilities & Telecommunications	32,53	0,51	76,02	1873-07-31	1929-07-31
IMRN1-LO	Indemnity Marine Insurance Co.	Finance	31,78	0,50	76,51	1832-04-30	1917-06-30
CLYB1-LO	Clydesdale Bank Ltd	Finance	31,70	0,49	77,01	1838-12-31	1920-03-31
RCKL1-LO	Rock Life Assurance Co.	Finance	30,97	0,48	77,49	1807-02-28	1909-10-31
WIDK1-LO	West India Dock	Transports	30,30	0,47	77,96	1806-07-31	1838-07-31
MRNI1-LO	Marine Insurance Ltd	Finance	30,10	0,47	78,43	1837-01-31	1917-08-31

A.3 SWC, Industry

Table 3A. Shareholder Wealth Creation United States Industries

Industry	Lifetime Wealth Creation (\$ millions)	Firm/Months for Industry	Industry % of Wealth Creation	Industry % of Firm/Months	Ratio, % of Wealth Creation to % of Firm/Months
Communications	432,50	7180	0,57	0,48	1,19
Consumer Discretionary	7491,15	138158	9,91	9,24	1,07
Consumer Staples	9161,43	45607	12,12	3,05	3,98
Energy	7956,40	39567	10,53	2,64	3,98
Finance	10501,27	822402	13,89	54,97	0,25
Health Care	-190,61	1904	-0,25	0,13	-1,98
Industrials	6050,03	58928	8,00	3,94	2,03
Information Technology	222,53	2176	0,29	0,15	2,02
Materials	6728,41	121471	8,90	8,12	1,10
Real Estate	705,74	10090	0,93	0,67	1,38
Transports	13717,00	176714	18,15	11,81	1,54
Utilities & Telecommunications	12805,86	71793	16,94	4,80	3,53
Total	75581,71	1495990			

Table 3B. Shareholder Wealth Creation United Kingdom Industries

Industry	Lifetime Wealth Creation (£ millions)	Firm/Months for Industry	Industry % of Wealth Creation	Industry % of Firm/Months	Ratio, % of Wealth Creation to % of Firm/Months
Communications	-13,17	7277	-0,21	1,00	-0,20
Consumer Discretionary	333,45	57682	5,20	7,96	0,65
Consumer Staples	1021,50	60032	15,92	8,28	1,92
Energy	37,38	20366	0,58	2,81	0,21
Finance	3143,81	184202	48,99	25,41	1,93
Health Care	-2,85	1562	-0,04	0,22	-0,21
Industrials	386,53	51379	6,02	7,09	0,85
Information Technology	12,48	1842	0,19	0,25	0,77
Materials	39,73	83673	0,62	11,54	0,05
Real Estate	7,45	10222	0,12	1,41	0,08
Transports	959,43	169410	14,95	23,37	0,64
Utilities & Telecommunications	491,93	77138	7,67	10,64	0,72
Total	6417,66	724785			

A.4 SWC, Bottom 25 Firms

Table 4A. Bottom 25 Firms, United States

Symbol	Company	Industry	Lifetime Wealth			
			Creation (\$ millions)	% of Total	First Month	Last Month
TRLA3	Transamerica Corp.	Finance	-1374,81	-1,82	1929-10-31	1930-12-31
GUD1	Guardian Detroit Union Group Inc.	Finance	-1057,03	-1,40	1929-07-31	1930-12-31
CW1	Commonwealth and Southern Co.	Utilities & Telecommunications	-658,24	-0,87	1929-07-31	1930-12-31
CCI1	CitiCorp Inc.	Finance	-504,56	-0,67	1813-01-31	1930-12-31
NMK1	Niagara Mohawk Holdings Inc.	Utilities & Telecommunications	-436,09	-0,58	1929-07-31	1930-12-31
BUS2	The President, Directors and Company of the Bank of the United States	Finance	-395,58	-0,52	1800-04-30	1815-03-31
GAPTQ1	Great Atlantic & Pacific Tea Co. of America	Consumer Staples	-394,91	-0,52	1928-10-31	1930-12-31
AST2	American Standard Inc.	Industrials	-314,95	-0,42	1929-07-31	1930-12-31
MKG1	Mallinckrodt Group Inc.	Health Care	-297,73	-0,39	1912-07-31	1930-12-31
HVB3	Hanover Bank	Finance	-270,23	-0,36	1929-10-31	1930-12-31
WN2	Webb & Knapp Inc.	Real Estate	-255,68	-0,34	1925-01-31	1930-12-31
WLS3	Willys Corp.	Consumer Discretionary	-219,31	-0,29	1919-10-31	1922-06-30
BSC6	Bank of South Carolina	Finance	-212,00	-0,28	1803-07-31	1860-11-30
NLW1	New York, Lake Erie & Western Railroad Co.	Transports	-209,70	-0,28	1842-01-31	1896-03-31
L3	Sinclair Oil Co.	Energy	-208,11	-0,28	1916-07-31	1930-12-31
WPT1	Westates Petroleum Co.	Energy	-183,18	-0,24	1927-04-30	1930-12-31
DVR1	Denver & Rio Grande Railroad Co.	Transports	-181,07	-0,24	1879-01-31	1922-11-30
A4	Anaconda Co.	Materials	-163,10	-0,22	1895-07-31	1930-12-31
PFT2	Perfection Tire and Rubber Co.	Consumer Discretionary	-160,79	-0,21	1918-03-31	1922-11-30
SWBIQ1	Stone & Webster, Inc.	Industrials	-157,58	-0,21	1929-07-31	1930-12-31
CLL2	Conoco Inc.	Energy	-157,50	-0,21	1920-10-31	1930-12-31
GBO2	Gladys Belle Oil Co.	Energy	-156,62	-0,21	1922-07-31	1923-11-30
UGC1	United Gas Corp.	Utilities & Telecommunications	-154,95	-0,21	1930-04-30	1930-12-31
BKSD2	Brookside Mills	Consumer Discretionary	-154,70	-0,20	1920-07-31	1925-10-31
BX1	Bendix Corp.	Consumer Discretionary	-152,34	-0,20	1929-07-31	1930-12-31

Table 4B. Bottom 25 Firms, United Kingdom

Symbol	Company	Industry	Lifetime Wealth			
			Creation (£ millions)	% of Total	First Month	Last Month
LMSR1-LO	London Midland and Scottish Railway	Transports	-92,61	-1,44	1923-04-30	1930-12-31
GERE1-LO	Eastern Counties Railway	Transports	-44,17	-0,69	1836-04-30	1862-08-31
GWR1Q-LO	Great Western Railway Co.	Transports	-40,28	-0,63	1846-01-31	1850-04-30
WLTB1-LO	Wilt and Berks Canal	Transports	-32,08	-0,50	1809-01-31	1858-10-31
WMWW1-LO	West Middlesex Water Works Co.	Utilities & Telecommunications	-32,01	-0,50	1807-01-31	1904-11-30
BRIM2-LO	British Iron Co.	Materials	-27,94	-0,44	1825-04-30	1840-04-30
MLR1M-LO	Midland Counties Railway	Transports	-26,86	-0,42	1847-01-31	1851-09-30
GJCA1-LO	Grand Junction Co. Ltd.	Transports	-26,10	-0,41	1806-07-31	1929-12-31
LNW1F-LO	London and North -Western	Transports	-22,92	-0,36	1846-10-31	1852-08-31
LYRW1MF-LO	Lancashire and Yorkshire Railway Co.	Transports	-22,00	-0,34	1846-01-31	1855-02-28
GWST1-LO	Grand Western Canal	Transports	-19,32	-0,30	1810-10-31	1842-10-31
MDR1-LO	Metropolitan District Railway Co.	Transports	-19,03	-0,30	1865-04-30	1930-12-31
SC1-LO	Shell Transport and Trading Co.	Energy	-18,25	-0,28	1910-04-30	1930-12-31
VCP1-LO	Vickers p.l.c.	Materials	-17,55	-0,27	1882-04-30	1930-12-31
LCD1A-LO	London Chatham & Dover Railway Arbitration	Transports	-17,25	-0,27	1859-10-31	1922-12-31
OVGN1-LO	Overend, Gurney & Co.	Finance	-16,90	-0,26	1865-10-31	1866-05-31
SELG1G-LO	South-Eastern and Dover Railway No. 4	Transports	-16,49	-0,26	1846-01-31	1850-02-28
SWBG1-LO	Southwark Iron Bridge Shares	Transports	-16,32	-0,25	1815-01-31	1851-04-30
GRUC2-LO	Grand Union Canal Co. Ltd.	Transports	-16,11	-0,25	1809-10-31	1864-12-31
LNW1I-LO	London & North-Western Railway	Transports	-15,91	-0,25	1846-01-31	1857-02-28
NER1YN-LO	York Railway Extension No. 1 York and Newcastle	Transports	-15,85	-0,25	1846-10-31	1854-08-31
VXBG1-LO	Vauxhall Bridge	Transports	-15,44	-0,24	1809-03-31	1862-01-31
LGLB1-LO	London & Globe Finance Corp.	Finance	-15,40	-0,24	1898-01-31	1901-05-31
LBSC1C-LO	London Brighton & South Coast Railway	Transports	-15,27	-0,24	1845-04-30	1848-08-31
GWRS1-LO	Great Western Railway Co. South Wales Branch	Transports	-15,24	-0,24	1845-01-31	1870-04-30

A.5 SWC, Top 25 Firms without Risk-free Rate and IAF

Table 5A. Top 25 Firms without Rf and IAF, United States

Symbol	Company	Industry	Lifetime Wealth		Cumulative %		
			Creation (\$ millions)	% of Total	of Total	First Month	Last Month
XOM	ExxonMobil Corp.	Energy	2599,63	3,58	3,58	1883-01-31	1930-12-31
T1	American Telephone & Telegraph Co.	Utilities & Telecommunications	2297,79	3,17	6,75	1900-07-31	1930-12-31
GE	GE Aerospace	Industrials	2218,90	3,06	9,81	1892-07-31	1930-12-31
MTLQQ1	Motors Liquidation Corp.	Consumer Discretionary	2104,07	2,90	12,71	1909-07-31	1930-12-31
MRO	Marathon Oil Corp.	Energy	1529,65	2,11	14,82	1901-04-30	1930-12-31
ED	Consolidated Edison Co. of New York Inc.	Utilities & Telecommunications	1420,53	1,96	16,78	1885-04-30	1930-12-31
KRA1	Kraft Inc.	Consumer Staples	1365,10	1,88	18,66	1924-01-31	1930-12-31
BEAM3	Beam Inc.	Consumer Staples	1338,72	1,85	20,50	1904-10-31	1930-12-31
PC2	Penn Central Corp.	Transports	1067,94	1,47	21,98	1849-01-31	1930-12-31
PHC1	Philadelphia Co.	Utilities & Telecommunications	973,27	1,34	23,32	1886-01-31	1930-12-31
KN1	Kennecott Corp.	Materials	969,37	1,34	24,65	1915-10-31	1930-12-31
DD2	E.I. du Pont de Nemours & Co.	Materials	958,18	1,32	25,97	1916-01-31	1930-12-31
UP1	Union Pacific Railroad Co.	Transports	782,48	1,08	27,05	1885-01-31	1930-12-31
RAY2	Ray Consolidated Copper Co.	Materials	756,72	1,04	28,10	1910-04-30	1927-09-30
DE	Deere & Co.	Industrials	728,42	1,00	29,10	1927-07-31	1930-12-31
PG	Procter & Gamble Co.	Consumer Staples	706,37	0,97	30,07	1906-01-31	1930-12-31
UGI	UGI Corp.	Utilities & Telecommunications	673,36	0,93	31,00	1893-01-31	1930-12-31
ASF1	Atchison, Topeka & Santa Fe Railway Co.	Transports	645,86	0,89	31,89	1896-04-30	1930-12-31
OT1	Otis Elevator Co.	Industrials	630,10	0,87	32,76	1899-04-30	1930-12-31
SX1	Southern Pacific Co.	Transports	628,52	0,87	33,63	1885-06-30	1930-12-31
SMF2	Singer Co.	Consumer Discretionary	627,43	0,86	34,49	1895-10-31	1930-12-31
BEAM3B	American Tobacco Co.	Consumer Staples	625,00	0,86	35,35	1920-07-31	1930-12-31
PET1	Pacific Enterprises	Utilities & Telecommunications	624,65	0,86	36,21	1909-07-31	1930-12-31
FL	Foot Locker Inc.	Consumer Discretionary	618,54	0,85	37,07	1912-01-31	1930-12-31
NAB1	Nabisco Inc.	Consumer Staples	566,02	0,78	37,85	1898-04-30	1930-12-31

Table 5B. Top 25 Firms without Rf and IAF, United Kingdom

Symbol	Company	Industry	Lifetime Wealth		Cumulative %		
			Creation (£ millions)	% of Total	of Total	First Month	Last Month
SFZM1-LO	Sansinena Frozen Meat Ltd	Consumer Staples	308,91	7,58	7,58	1910-10-31	1920-10-31
IMP1-LO	Imperial Group p.l.c.	Consumer Staples	199,27	4,89	12,47	1907-01-31	1930-12-31
BOE1-LO	Bank of England Stock	Finance	195,17	4,79	17,26	1800-04-30	1930-12-31
LNW1-LO	London & North-Western Railway	Transports	125,71	3,08	20,34	1846-10-31	1916-03-31
CTJP1-LO	Coats Ltd.	Consumer Discretionary	89,06	2,19	22,53	1891-01-31	1930-12-31
GNSS1-LO	Guinness p.l.c.	Consumer Staples	86,16	2,11	24,64	1887-04-30	1930-12-31
GWR1-LO	Great Western Railway Co.	Transports	83,09	2,04	26,68	1835-10-31	1930-12-31
AADB1-LO	Anglo-American Debenture Corp. Ltd.	Finance	63,12	1,55	28,23	1890-10-31	1930-06-30
MLR1-LO	Midland Railway Co.	Transports	61,04	1,50	29,73	1836-01-31	1897-09-30
RYIN1-LO	Royal Insurance Co. Ltd.	Finance	59,04	1,45	31,18	1865-01-31	1930-12-31
LLDB1-LO	Lloyds Bank p.l.c.	Finance	56,90	1,40	32,57	1865-07-31	1930-12-31
COU1-LO	Courtaulds p.l.c.	Consumer Discretionary	53,47	1,31	33,89	1913-10-31	1930-12-31
BAT1-LO	British-American Tobacco Co.	Consumer Staples	48,85	1,20	35,08	1912-10-31	1930-12-31
EIC1-LO	East India Company	Industrials	45,14	1,11	36,19	1800-04-30	1874-04-30
CUAS1-LO	Commercial Union Assurance Company p.l.c.	Finance	45,05	1,11	37,30	1862-01-31	1930-12-31
LYRW1-LO	Lancashire & Yorkshire Railway Co.	Transports	42,49	1,04	38,34	1836-04-30	1921-12-31
RTP1-LO	Rio Tinto Ltd.	Materials	42,15	1,03	39,37	1873-10-31	1930-12-31
BRMC1-LO	Burmah-Castrol plc	Energy	41,58	1,02	40,39	1903-10-31	1930-12-31
NPBE1A-LO	National Provincial Bank of England Ltd.	Finance	41,36	1,01	41,41	1837-07-31	1930-12-31
LSWR1-LO	London & South-Western Railway	Transports	39,64	0,97	42,38	1834-10-31	1922-12-31
SC1-LO	Shell Transport and Trading Co.	Energy	34,24	0,84	43,22	1910-04-30	1930-12-31
CB1-SH	Chartered Bank Ltd.	Finance	33,50	0,82	44,04	1871-01-31	1930-12-31
WSMB1B-LO	Westminster Bank Ltd.	Finance	32,58	0,80	44,84	1835-02-28	1930-12-31
BCLB1B-LO	Barclays Bank Ltd.	Finance	32,47	0,80	45,64	1913-04-30	1930-12-31
IMCG1-LO	Imperial Continental Gas Association	Utilities & Telecommunications	32,04	0,79	46,43	1832-10-31	1930-12-31

A.6 Dividend SWC, Top 25 Firms without Risk-free Rate and IAF

Table 6A. Top 25 Dividend Firms, United States

Symbol	Company	Industry	Lifetime Dividend Wealth		Cumulative %		
			Creation (\$ millions)	% of Total	% of Total	First Month	Last Month
T1	American Telephone & Telegraph Co.	Utilities & Telecommunications	1286,61	2,91	2,91	1900-07-31	1930-12-31
XOM	ExxonMobil Corp.	Energy	1232,34	2,79	5,70	1883-01-31	1930-12-31
PC2	Penn Central Corp.	Transports	1017,61	2,30	8,00	1849-01-31	1930-12-31
MRO	Marathon Oil Corp.	Energy	856,38	1,94	9,94	1901-04-30	1930-12-31
MTLQQ1	Motors Liquidation Corp.	Consumer Discretionary	846,44	1,92	11,86	1909-07-31	1930-12-31
RAY2	Ray Consolidated Copper Co.	Materials	768,74	1,74	13,60	1910-04-30	1927-09-30
CN1	New York Central Railroad	Transports	619,23	1,40	15,00	1870-01-31	1930-12-31
UP1	Union Pacific Railroad Co.	Transports	568,75	1,29	16,28	1885-01-31	1930-12-31
NP1	Northern Pacific Railway Co.	Transports	461,14	1,04	17,33	1896-10-31	1930-12-31
SX1	Southern Pacific Co.	Transports	453,98	1,03	18,35	1885-06-30	1930-12-31
GN1	Great Northern Railway Co.	Transports	385,40	0,87	19,23	1890-01-31	1930-12-31
ASF1	Atchison, Topeka & Santa Fe Railway Co.	Transports	358,31	0,81	20,04	1896-04-30	1930-12-31
DD2	E.I. du Pont de Nemours & Co.	Materials	347,73	0,79	20,82	1916-01-31	1930-12-31
GE	GE Aerospace	Industrials	333,98	0,76	21,58	1892-07-31	1930-12-31
PU1	Pullman Inc.	Industrials	331,55	0,75	22,33	1871-01-31	1930-12-31
DL2	Delaware, Lackawanna & Western Railroad Co.	Transports	326,18	0,74	23,07	1855-10-31	1930-12-31
ED	Consolidated Edison Co. of New York Inc.	Utilities & Telecommunications	316,78	0,72	23,79	1885-04-30	1930-12-31
A4	Anaconda Co.	Materials	307,10	0,69	24,48	1895-07-31	1930-12-31
IL1	Illinois Central Railroad Co.	Transports	305,49	0,69	25,17	1853-01-31	1930-12-31
EKDKQ1	Eastman Kodak Co.	Consumer Discretionary	304,98	0,69	25,86	1902-07-31	1930-12-31
BEAM3	Beam Inc.	Consumer Staples	297,59	0,67	26,54	1904-10-31	1930-12-31
CVX	Chevron Corp.	Energy	294,71	0,67	27,20	1912-04-30	1930-12-31
SMF2	Singer Co.	Consumer Discretionary	279,91	0,63	27,84	1895-10-31	1930-12-31
NVAL2	New Valley Corp.	Real Estate	274,93	0,62	28,46	1864-04-30	1930-12-31
AN1	Amoco Inc.	Energy	268,23	0,61	29,06	1913-03-31	1930-12-31

Table 6B. Top 25 Dividend Firms, United Kingdom

Symbol	Company	Industry	Lifetime Dividend Wealth		Cumulative		
			Creation (£ millions)	% of Total	% of Total	First Month	Last Month
BOE1-LO	Bank of England	Finance	174,12	5,24	5,24	1800-04-30	1930-12-31
LNW1-LO	London & North-Western Railway	Transports	147,64	4,44	9,69	1846-10-31	1916-03-31
GWR1-LO	Great Western Railway Co.	Transports	102,04	3,07	12,76	1835-10-31	1930-12-31
SC1-LO	Shell Transport and Trading Co.	Energy	70,88	2,13	14,89	1910-04-30	1930-12-31
IMP1-LO	Imperial Group p.l.c.	Consumer Staples	70,43	2,12	17,01	1907-01-31	1930-12-31
CTJP1-LO	Coats Ltd.	Consumer Discretionary	61,44	1,85	18,86	1891-01-31	1930-12-31
GNSS1-LO	Guinness p.l.c.	Consumer Staples	50,71	1,53	20,39	1887-04-30	1930-12-31
LYRW1-LO	Lancashire & Yorkshire Railway Co.	Transports	48,30	1,45	21,84	1836-04-30	1921-12-31
EIC1-LO	East India Company	Industrials	46,14	1,39	23,23	1800-04-30	1874-04-30
LLDB1-LO	Lloyds Bank p.l.c.	Finance	45,19	1,36	24,59	1865-07-31	1930-12-31
MLR1-LO	Midland Railway Co.	Transports	43,63	1,31	25,90	1836-01-31	1897-09-30
RTP1-LO	Rio Tinto Ltd.	Materials	40,91	1,23	27,14	1873-10-31	1930-12-31
NPBE1A-LO	National Provincial Bank of England Ltd.	Finance	36,49	1,10	28,23	1837-07-31	1930-12-31
CB1-SH	Chartered Bank Ltd.	Finance	36,08	1,09	29,32	1871-01-31	1930-12-31
LSWR1-LO	London & South-Western Railway	Transports	34,65	1,04	30,36	1834-10-31	1922-12-31
MLR1D-LO	Midland Railway Co.	Transports	34,16	1,03	31,39	1898-01-31	1922-12-31
BAT1-LO	British-American Tobacco Co.	Consumer Staples	28,19	0,85	32,24	1912-10-31	1930-12-31
COU1-LO	Courtaulds p.l.c.	Consumer Discretionary	28,17	0,85	33,09	1913-10-31	1930-12-31
KODK1-LO	Kodak Ltd.	Consumer Discretionary	27,59	0,83	33,92	1899-07-31	1902-05-31
RYIN1-LO	Royal Insurance Co. Ltd.	Finance	27,35	0,82	34,74	1865-01-31	1930-12-31
BRMC1-LO	Burmah-Castrol plc	Energy	25,81	0,78	35,52	1903-10-31	1930-12-31
SFZM1-LO	Sansinena Frozen Meat Ltd	Consumer Staples	25,41	0,76	36,28	1910-10-31	1920-10-31
GER1-LO	Great Eastern Railway Co.	Transports	24,90	0,75	37,03	1862-10-31	1922-12-31
IMCG1-LO	Imperial Continental Gas Association	Utilities & Telecommunications	24,01	0,72	37,76	1832-10-31	1930-12-31
WSMB1B-LO	Westminster Bank Ltd.	Finance	23,31	0,70	38,46	1835-02-28	1930-12-31

A.7 Capital Gains SWC, Top 25 Firms without Risk-free Rate and IAF

Table 7A. Top 25 Capital Gains Firms, United States

Symbol	Company	Industry	Lifetime Capital Gains		Cumulative %		
			Wealth Creation (\$ millions)	% of Total	of Total	First Month	Last Month
GE	GE Aerospace	Industrials	1884,92	6,65	6,65	1892-07-31	1930-12-31
XOM	ExxonMobil Corp.	Energy	1367,29	4,82	11,47	1883-01-31	1930-12-31
KRA1	Kraft Inc.	Consumer Staples	1326,29	4,68	16,15	1924-01-31	1930-12-31
MTLQQ1	Motors Liquidation Corp.	Consumer Discretionary	1257,63	4,44	20,58	1909-07-31	1930-12-31
ED	Consolidated Edison Co. of New York Inc.	Utilities & Telecommunications	1103,75	3,89	24,47	1885-04-30	1930-12-31
BEAM3	Beam Inc.	Consumer Staples	1041,12	3,67	28,15	1904-10-31	1930-12-31
T1	American Telephone & Telegraph Co.	Utilities & Telecommunications	1011,18	3,57	31,71	1900-07-31	1930-12-31
PHC1	Philadelphia Co.	Utilities & Telecommunications	881,73	3,11	34,82	1886-01-31	1930-12-31
KN1	Kennecott Corp.	Materials	753,78	2,66	37,48	1915-10-31	1930-12-31
DE	Deere & Co.	Industrials	719,37	2,54	40,02	1927-07-31	1930-12-31
MRO	Marathon Oil Corp.	Energy	673,27	2,37	42,39	1901-04-30	1930-12-31
DD2	E.I. du Pont de Nemours & Co.	Materials	610,45	2,15	44,55	1916-01-31	1930-12-31
OT1	Otis Elevator Co.	Industrials	586,85	2,07	46,61	1899-04-30	1930-12-31
PET1	Pacific Enterprises	Utilities & Telecommunications	575,96	2,03	48,65	1909-07-31	1930-12-31
BEAM3B	American Tobacco Co.	Consumer Staples	525,80	1,85	50,50	1920-07-31	1930-12-31
PG	Procter & Gamble Co.	Consumer Staples	505,99	1,78	52,28	1906-01-31	1930-12-31
UGI	UGI Corp.	Utilities & Telecommunications	497,96	1,76	54,04	1893-01-31	1930-12-31
NYI1	New York Investors Inc.	Real Estate	465,67	1,64	55,68	1902-01-31	1930-12-31
NA2	North American Co.	Utilities & Telecommunications	463,94	1,64	57,32	1890-10-31	1930-12-31
FL	Foot Locker Inc.	Consumer Discretionary	461,16	1,63	58,95	1912-01-31	1930-12-31
CG1	Columbia Energy Group	Utilities & Telecommunications	449,30	1,58	60,53	1927-04-30	1930-12-31
NAB1	Nabisco Inc.	Consumer Staples	434,45	1,53	62,06	1898-04-30	1930-12-31
FLMN1	Fleischmann Company	Consumer Staples	405,64	1,43	63,49	1918-04-30	1929-08-31
TTGT1	Title Guarantee Company	Finance	401,29	1,42	64,91	1895-01-31	1930-12-31
MWK1	Mohawk Rubber Co.	Consumer Discretionary	382,35	1,35	66,26	1921-01-31	1930-12-31

Table 7B. Top 25 Capital Gains Firms, United Kingdom

Symbol	Company	Industry	Lifetime Capital Gains		Cumulative %		
			Wealth Creation (£ millions)	% of Total	of Total	First Month	Last Month
SFZM1-LO	Sansinena Frozen Meat Ltd	Consumer Staples	283,50	37,59	37,59	1910-10-31	1920-10-31
IMP1-LO	Imperial Group p.l.c.	Consumer Staples	128,84	17,08	54,68	1907-01-31	1930-12-31
AADB1-LO	Anglo-American Debenture Corp. Ltd.	Finance	41,42	5,49	60,17	1890-10-31	1930-06-30
GNSS1-LO	Guinness p.l.c.	Consumer Staples	35,45	4,70	64,87	1887-04-30	1930-12-31
RYIN1-LO	Royal Insurance Co. Ltd.	Finance	31,70	4,20	69,07	1865-01-31	1930-12-31
CUAS1-LO	Commercial Union Assurance Company p.l.c.	Finance	28,61	3,79	72,87	1862-01-31	1930-12-31
CTJP1-LO	Coats Ltd.	Consumer Discretionary	27,63	3,66	76,53	1891-01-31	1930-12-31
COU1-LO	Courtaulds p.l.c.	Consumer Discretionary	25,30	3,35	79,88	1913-10-31	1930-12-31
BOE1-LO	Bank of England	Finance	21,05	2,79	82,67	1800-04-30	1930-12-31
BAT1-LO	British-American Tobacco Co.	Consumer Staples	20,66	2,74	85,41	1912-10-31	1930-12-31
LLFI1-LO	London & Lancashire Insurance Co. Ltd.	Finance	18,07	2,40	87,81	1864-01-31	1930-12-31
PHXA1-LO	Phoenix Assurance p.l.c.	Finance	17,65	2,34	90,15	1838-07-31	1930-12-31
MLR1-LO	Midland Railway Co.	Transports	17,41	2,31	92,46	1836-01-31	1897-09-30
PUK1A-LO	Prudential Corporation p.l.c.	Finance	17,34	2,30	94,76	1869-04-30	1930-12-31
NBRI1-LO	North British & Mercantile Insurance Co. Ltd.	Finance	16,66	2,21	96,97	1827-10-31	1930-12-31
BRMC1-LO	Burmah-Castrol plc	Energy	15,77	2,09	99,06	1903-10-31	1930-12-31
UBSC1-LO	Union Bank of Scotland Ltd.	Finance	12,03	1,59	100,65	1831-10-31	1930-06-30
CLES1-LO	County of London Electric Supply Co. Ltd.	Utilities & Telecommunications	11,71	1,55	102,20	1895-10-31	1930-12-31
LLDB1-LO	Lloyds Bank p.l.c.	Finance	11,71	1,55	103,76	1865-07-31	1930-12-31
MCWF1-LO	Metropolitan Carriage Wagon and Finance Ltd.	Industrials	11,52	1,53	105,28	1903-01-31	1919-04-30
BCLB1B-LO	Barclays Bank Ltd.	Finance	11,48	1,52	106,81	1913-04-30	1930-12-31
MNDK1-LO	Mond Nickel Co.	Materials	10,98	1,46	108,26	1911-10-31	1929-01-31
WSMB1B-LO	Westminster Bank Ltd.	Finance	9,27	1,23	109,49	1835-02-28	1930-12-31
BWLX1-LO	Babcock International p.l.c.	Industrials	8,65	1,15	110,64	1892-10-31	1930-12-31
CLRW1-LO	Central London Railway Co.	Transports	8,36	1,11	111,75	1896-01-31	1930-06-30

A.8 Dividend SWC vs. Capital Gains SWC, Top 50 Firms

Table 8A. Ratio Dividend vs. Capital Gains without Risk-free Rate and IAF, United States

Symbol	Company	Lifetime Wealth Creation (\$ millions)	Dividend Wealth % of Total Wealth	Capital Gains Wealth % of Total Wealth
XOM	ExxonMobil Corp.	2599,63	47,40	52,60
T1	American Telephone & Telegraph Co.	2297,79	55,99	44,01
GE	GE Aerospace	2218,90	15,05	84,95
MTLQQ1	Motors Liquidation Corp.	2104,07	40,23	59,77
MRO	Marathon Oil Corp.	1529,65	55,99	44,01
ED	Consolidated Edison Co. of New York Inc.	1420,53	22,30	77,70
KRA1	Kraft Inc.	1365,10	2,84	97,16
BEAM3	Beam Inc	1338,72	22,23	77,77
PC2	Penn Central Corp.	1067,94	95,29	4,71
PHC1	Philadelphia Co.	973,27	9,41	90,59
KN1	Kennecott Corp.	969,37	22,24	77,76
DD2	E.I. du Pont de Nemours & Co.	958,18	36,29	63,71
UP1	Union Pacific Railroad Co.	782,48	72,69	27,31
RAY2	Ray Consolidated Copper Co.	756,72	101,59	-1,59
DE	Deere & Co.	728,42	1,24	98,76
PG	Procter & Gamble Co.	706,37	28,37	71,63
UGI	UGI Corp.	673,36	26,05	73,95
ASF1	Atchison, Topeka & Santa Fe Railway Co.	645,86	55,48	44,52
OT1	Otis Elevator Co.	630,10	6,86	93,14
SX1	Southern Pacific Co.	628,52	72,23	27,77
SMF2	Singer Co.	627,43	44,61	55,39
BEAM3B	American Tobacco Co.	625,00	15,87	84,13
PET1	Pacific Enterprises	624,65	7,79	92,21
FL	Foot Locker Inc.	618,54	25,44	74,56
NAB1	Nabisco Inc.	566,02	23,25	76,75
EKDKQ1	Eastman Kodak Co.	561,18	54,35	45,65
AN1	Amoco Inc.	551,65	48,62	51,38
CN1	New York Central Railroad	549,32	112,73	-12,73
DL2	Delaware, Lackawanna & Western Railroad Co.	540,24	60,38	39,62
CG1	Columbia Energy Group	506,16	11,23	88,77
NA2	North American Co.	499,90	7,19	92,81
NYI1	New York Investors Inc.	468,42	0,59	99,41
FNB2	First National Bank of the City of New York	467,50	33,86	66,14
FLMN1	Fleischmann Company	463,43	12,47	87,53
NP1	Northern Pacific Railway Co.	448,61	102,79	-2,79
PU1	Pullman Inc.	444,73	74,55	25,45
TTGT1	Title Guarantee Company	442,00	9,21	90,79
NFK1	Norfolk & Western Railway Co.	410,32	54,17	45,83
HON	Honeywell International Inc.	404,88	24,86	75,14
BT1	Bankers Trust Corp.	394,15	15,10	84,90
ANR1	American Natural Resources Co.	393,50	12,09	87,91
CVX	Chevron Corp.	391,10	75,35	24,65
MWK1	Mohawk Rubber Co.	382,76	0,11	99,89
MC3	Michigan Central Railroad Co.	382,59	26,28	73,72
RJR1	RJR Nabisco Inc.	377,91	37,42	62,58
KO	Coca Cola Co.	376,59	10,15	89,85
NVAL2	New Valley Corp.	370,15	74,28	25,72
MOB1	Mobil Corp.	368,94	64,80	35,20
LSM2	Lake Shore & Michigan Southern Railway Co.	361,28	46,71	53,29
KOC1	Coca Cola International Corp.	355,25	1,51	98,49
Total		38369,19		
Mean			37,55	62,45
Mean Top 5			42,93	57,07
Mean Top 10			36,67	63,33
Mean Top 25			36,27	63,73

Table 8B. Ratio Dividend vs. Capital Gains without Risk-free Rate and IAF, United Kingdom

Symbol	Company	Lifetime Wealth Creation (£ millions)	Dividend Wealth % of Total Wealth	Capital Gains Wealth % of Total Wealth
SFZM1-LO	Sansinena Frozen Meat Ltd	308,91	8,23	91,77
IMP1-LO	Imperial Group p.l.c.	199,27	35,34	64,66
BOE1-LO	Bank of England	195,17	89,22	10,78
LNW1-LO	London & North-Western Railway	125,71	117,44	-17,44
CTJP1-LO	Coats Ltd.	89,06	68,98	31,02
GNSS1-LO	Guinness p.l.c.	86,16	58,86	41,14
GWR1-LO	Great Western Railway Co.	83,09	122,81	-22,81
AADB1-LO	Anglo-American Debenture Corp. Ltd.	63,12	34,37	65,63
MLR1-LO	Midland Railway Co.	61,04	71,47	28,53
RYIN1-LO	Royal Insurance Co. Ltd.	59,04	46,32	53,68
LLDB1-LO	Lloyds Bank p.l.c.	56,90	79,43	20,57
COU1-LO	Courtaulds p.l.c.	53,47	52,68	47,32
BAT1-LO	British-American Tobacco Co.	48,85	57,71	42,29
EIC1-LO	East India Company	45,14	102,23	-2,23
CUAS1-LO	Commercial Union Assurance Company p.l.c.	45,05	36,49	63,51
LYRW1-LO	Lancashire & Yorkshire Railway Co.	42,49	113,68	-13,68
RTP1-LO	Rio Tinto Ltd.	42,15	97,06	2,94
BRMC1-LO	Burmah-Castrol plc	41,58	62,08	37,92
NPBE1A-LO	National Provincial Bank of England Ltd.	41,36	88,21	11,79
LSWR1-LO	London & South-Western Railway	39,64	87,42	12,58
SC1-LO	Shell Transport and Trading Co.	34,24	206,98	-106,98
CB1-SH	Chartered Bank Ltd.	33,50	107,69	-7,69
WSMB1B-LO	Westminster Bank Ltd.	32,58	71,54	28,46
BCLB1B-LO	Barclays Bank Ltd.	32,47	64,64	35,36
IMCG1-LO	Imperial Continental Gas Association	32,04	74,94	25,06
CLRW1-LO	Central London Railway Co.	29,69	71,83	28,17
KODK1-LO	Kodak Ltd.	28,80	95,80	4,20
PUK1A-LO	Prudential Corporation p.l.c.	28,11	38,33	61,67
LLF1-LO	London & Lancashire Insurance Co. Ltd.	26,59	32,04	67,96
PHXA1-LO	Phoenix Assurance p.l.c.	26,51	33,42	66,58
NBRI1-LO	North British & Mercantile Insurance Co. Ltd.	26,23	36,49	63,51
MLR1D-LO	Midland Railway Co.	26,23	130,23	-30,23
ESTT1-LO	Eastern Telegraph Co.	25,26	68,14	31,86
GER1-LO	Great Eastern Railway Co.	24,29	102,52	-2,52
EXAC1-LO	Eastern Extension Australia & China Telegraph Ltd	24,23	74,15	25,85
DSTL1-LO	Distillers Co. Ltd.	22,35	77,90	22,10
UBSC1-LO	Union Bank of Scotland Ltd.	22,15	45,70	54,30
GLCK1A-LO	Gas Light and Coke Co.	22,01	74,58	25,42
NBSC1-LO	National Bank of Scotland Ltd	21,55	95,26	4,74
RBSC1-LO	Royal Bank of Scotland Ltd.	19,78	80,76	19,24
BRMO1A-LO	Brunner Mond & Co. Ltd	19,05	71,26	28,74
BWLX1-LO	Babcock International p.l.c.	18,42	53,07	46,93
CLDR1-LO	Caledonian Railway Co. Inc.	18,04	92,21	7,79
BODG1-LO	Boddingtons' Breweries p.l.c.	17,34	79,96	20,04
SUNF1-LO	Sun Insurance Fire Office Ltd.	16,96	52,13	47,87
GNR1-LO	Great Northern Railway Co. Consolidated	16,25	107,97	-7,97
LJSB1-LO	London Joint Stock Bank	15,91	90,08	9,92
LBSC1-LO	London Brighton & South Coast Railway	15,42	83,47	16,53
DSTB1A-LO	District Bank Ltd.	14,87	96,27	3,73
BSCT1-LO	Bank of Scotland	14,61	85,80	14,20
Total		2432,70		
Mean			76,50	23,50
Mean Top 5			63,84	36,16
Mean Top 10			65,30	34,70
Mean Top 25			78,23	21,77

A.9 SWC Five-year subsample periods

Table 9A. SWC Five-year subsample periods, United States

Five-Year Period	Number	Number Firms	with Positive Wealth Creation	% of Firms with Positive Wealth Creation	Net Wealth Creation; Sum across all Firms (\$ millions)	Gross Wealth Creation; Sum across all Positive Firms (\$ millions)	% of Firms Accounting for 10% of Gross Wealth Creation	% of Firms Accounting for 25% of Gross Wealth Creation	% of Firms Accounting for 50% of Gross Wealth Creation
1800	36	6	16,67		100,41	388,13	2,78	2,78	2,78
1805	58	22	37,93		233,97	508,41	1,72	1,72	5,17
1810	82	15	18,29		-1217,31	195,79	1,22	1,22	2,44
1815	89	34	38,20		-0,74	908,93	1,12	1,12	3,37
1820	118	58	49,15		815,56	1050,75	0,85	0,85	3,39
1825	160	52	32,50		-37,65	565,43	0,63	0,63	1,25
1830	242	125	51,65		1018,24	1353,96	0,41	1,65	5,79
1835	340	75	22,06		-1734,68	505,24	0,29	0,88	2,35
1840	331	149	45,02		-748,43	964,94	0,91	2,11	6,95
1845	323	138	42,72		120,20	931,00	0,31	1,24	4,33
1850	481	212	44,07		-24,65	1146,16	0,62	1,46	4,37
1855	413	200	48,43		441,68	1406,71	0,24	0,73	3,87
1860	532	335	62,97		4231,53	4569,18	0,56	1,50	4,32
1865	503	255	50,70		63,99	1959,96	0,40	0,80	2,98
1870	562	315	56,05		1137,02	1946,38	0,36	0,71	2,31
1875	976	381	39,04		2226,72	3024,24	0,20	0,31	1,23
1880	1062	570	53,67		76,67	2897,87	0,19	0,47	2,26
1885	1129	723	64,04		3385,87	4321,96	0,27	0,89	3,10
1890	1116	524	46,95		-793,00	1777,16	0,27	0,54	1,97
1895	2740	1732	63,21		7366,28	8356,83	0,04	0,22	0,95
1900	2991	2086	69,74		9156,86	10641,60	0,07	0,17	0,80
1905	3065	2001	65,29		6906,05	9237,16	0,07	0,20	0,78
1910	3177	1649	51,90		-1960,45	4779,81	0,03	0,09	0,54
1915	3404	2076	60,99		14869,42	18305,51	0,06	0,26	1,26
1920	3904	2082	53,33		8351,36	15436,11	0,13	0,46	1,43
1925	4990	2755	55,21		43268,32	52782,42	0,08	0,28	1,08
1930	3930	760	19,34		-21671,57	5608,46	0,03	0,05	0,13
Sum					75581,71	155570,09			
Mean (All)							0,51	0,86	2,64
Mean To 1865							0,90	1,38	3,88
Mean Since 1865							0,16	0,39	1,49

Table 9B. SWC Five-year subsample periods, United Kingdom

Five-Year Period Starting	Number Firms	Number Firms with Positive Wealth Creation	% of Firms with Positive Wealth Creation	Net Wealth Creation; Sum across all Firms (£ millions)	Gross Wealth Creation; Sum across all Positive Firms (£ millions)	% of Firms Accounting for 10% of Gross Wealth Creation	% of Firms Accounting for 25% of Gross Wealth Creation	% of Firms Accounting for 50% of Gross Wealth Creation
1800	3	2	66,67	-28,48	122,65	33,33	33,33	33,33
1805	53	25	47,17	1243,83	1264,45	1,89	1,89	1,89
1810	84	16	19,05	-638,21	43,94	1,19	1,19	3,57
1815	116	45	38,79	247,91	370,64	0,86	0,86	1,72
1820	171	89	52,05	655,17	674,22	0,58	0,58	1,75
1825	219	49	22,37	-469,12	66,69	0,46	1,37	3,20
1830	246	125	50,81	117,52	263,54	0,41	0,41	1,63
1835	328	142	43,29	-104,10	210,32	0,61	1,52	4,27
1840	309	162	52,43	547,31	660,95	0,32	0,97	2,59
1845	411	124	30,17	-1148,67	135,97	0,24	0,73	2,68
1850	353	196	55,52	457,90	567,98	0,57	1,42	4,25
1855	359	179	49,86	404,29	493,08	0,28	0,84	2,79
1860	461	203	44,03	522,12	602,13	0,22	0,87	2,60
1865	793	303	38,21	-70,65	399,11	0,25	0,50	1,51
1870	849	563	66,31	892,43	977,21	0,24	0,82	3,42
1875	886	484	54,63	415,49	594,02	0,23	0,79	2,82
1880	993	536	53,98	343,95	521,24	0,20	0,40	2,52
1885	970	643	66,29	623,61	702,00	0,21	0,72	3,51
1890	970	498	51,34	62,26	296,31	0,21	0,82	3,40
1895	1043	719	68,94	712,87	815,84	0,19	0,48	2,21
1900	1040	462	44,42	21,49	411,82	0,10	0,19	0,38
1905	962	498	51,77	98,27	326,09	0,10	0,31	2,18
1910	899	531	59,07	44,69	251,45	0,22	0,78	3,11
1915	828	547	66,06	1320,85	1449,67	0,12	0,12	0,36
1920	859	474	55,18	84,07	591,11	0,12	0,35	1,98
1925	832	429	51,56	285,45	644,77	0,12	0,48	1,92
1930	670	234	34,93	-224,58	72,87	0,15	0,30	1,34
Sum				6417,66	13530,07			
Mean (All)						1,61	1,97	3,59
Mean To 1865						3,15	3,54	5,10
Mean Since 1865						0,17	0,51	2,19
Mean (All Excluding 1800)						0,39	0,76	2,45
Mean To 1865 (Excluding 1800)						0,64	1,05	2,74

A.10 SWC, Top 50 firms, US 1926 – 2022

Table 10. Shareholder Wealth Creation United States 1926 - 2022, Top 50 Firms

Rank	Company Name	Lifetime Wealth		Cumulative % of Total	First Month	Last Month
		Creation (\$ Millions)	% of Total			
1	APPLE INC	2683067,0	4,92	4,92	Jan/81	Dec/22
2	MICROSOFT CORP	2085837,2	3,83	8,75	Apr/86	Dec/22
3	EXXON MOBIL CORP	1202224,0	2,21	10,96	Dec/26	Dec/22
4	ALPHABET INC	1005639,6	1,85	12,80	Sep/04	Dec/22
5	AMAZON COM INC	753172,5	1,38	14,19	Jun/97	Dec/22
6	BERKSHIRE HATHAWAY INC DEL	699661,6	1,28	15,47	Nov/76	Dec/22
7	WALMART INC	683834,4	1,25	16,72	Dec/72	Dec/22
8	JOHNSON & JOHNSON	655641,1	1,20	17,93	Oct/44	Dec/22
9	PROCTER & GAMBLE CO	583733,1	1,07	19,00	Sep/29	Dec/22
10	CHEVRON CORP NEW	567982,4	1,04	20,04	Dec/26	Dec/22
11	INTERNATIONAL BUSINESS MACHS COR	554661,8	1,02	21,06	Dec/26	Dec/22
12	UNITEDHEALTH GROUP INC	549624,7	1,01	22,07	Nov/84	Dec/22
13	ALTRIA GROUP INC	500997,7	0,92	22,99	Dec/26	Dec/22
14	COCA COLA CO	481257,5	0,88	23,87	Dec/26	Dec/22
15	HOME DEPOT INC	476949,2	0,88	24,75	Oct/81	Dec/22
16	MERCK & CO INC NEW	469730,7	0,86	25,61	May/46	Dec/22
17	GENERAL ELECTRIC CO	449214,8	0,82	26,43	Dec/26	Dec/22
18	GENERAL MOTORS CORP	439165,5	0,81	27,24	Dec/26	Jun/09
19	JPMORGAN CHASE & CO	434631,5	0,80	28,04	Apr/69	Dec/22
20	LILLY ELI & CO	417298,4	0,77	28,80	Aug/70	Dec/22
21	ORACLE CORP	380864,3	0,70	29,50	Apr/86	Dec/22
22	VISA INC	372005,9	0,68	30,18	Apr/08	Dec/22
23	MASTERCARD INC	370740,7	0,68	30,86	Jun/06	Dec/22
24	PEPSICO INC	368306,3	0,68	31,54	Dec/26	Dec/22
25	PFIZER INC	339718,6	0,62	32,16	Feb/44	Dec/22
26	DU PONT E I DE NEMOURS & CO	337318,6	0,62	32,78	Dec/26	Aug/17
27	ABBOTT LABORATORIES	328271,8	0,60	33,38	Apr/37	Dec/22
28	MCDONALDS CORP	316147,2	0,58	33,96	Aug/66	Dec/22
29	A T & T CORP	300978,7	0,55	34,52	Dec/26	Nov/05
30	NVIDIA CORP	291609,5	0,54	35,05	Mar/99	Dec/22
31	TESLA INC	271608,9	0,50	35,55	Jun/10	Dec/22
32	INTEL CORP	269603,8	0,49	36,04	Jan/73	Dec/22
33	CISCO SYSTEMS INC	261813,0	0,48	36,53	Mar/90	Dec/22
34	ABBVIE INC	261477,4	0,48	37,01	Feb/13	Dec/22
35	CONOCOPHILLIPS	256507,1	0,47	37,48	Dec/26	Dec/22
36	WELLS FARGO & CO NEW	244363,2	0,45	37,92	Jan/63	Dec/22
37	AMGEN INC	237553,3	0,44	38,36	Jul/83	Dec/22
38	BROADCOM INC	233630,1	0,43	38,79	Sep/09	Dec/22
39	UNION PACIFIC CORP	221104,1	0,41	39,19	Aug/69	Dec/22
40	COSTCO WHOLESALE CORP NEW	220142,7	0,40	39,60	Dec/85	Dec/22
41	BRISTOL MYERS SQUIBB CO	214714,2	0,39	39,99	Aug/29	Dec/22
42	MOBIL CORP	211006,0	0,39	40,38	Jan/27	Nov/99
43	META PLATFORMS INC	203403,7	0,37	40,75	Jun/12	Dec/22
44	THERMO FISHER SCIENTIFIC INC	203096,8	0,37	41,13	Jan/73	Dec/22
45	DANAHER CORP	201732,4	0,37	41,50	Sep/78	Dec/22
46	LOWES COMPANIES INC	200167,0	0,37	41,86	Jan/73	Dec/22
47	CATERPILLAR INC	199907,3	0,37	42,23	Jan/30	Dec/22
48	TEXAS INSTRUMENTS INC	199722,0	0,37	42,60	Dec/26	Dec/22
49	HONEYWELL INTERNATIONAL INC	193037,6	0,35	42,95	Dec/26	Dec/22
50	NEXTERA ENERGY INC	189218,8	0,35	43,30	Mar/50	Dec/22

A.11 Proportion Tests

Table 11. Comparison of US, and UK 1800 - 1930 and US 1926 - 2022

	Tests of Difference in Proportion Z-test (Z-value)	Tests of Difference in Proportion Chi-Square Test (Chi-Square value)
US, 1800 - 1930 vs. US, 1926 - 2022	423,36***	423,36***
UK, 1800 - 1930 vs. US, 1926 - 2022	159,29***	159,29***

APPENDIX B Figures

B.1 Cumulative Wealth Distribution

Figure 1A. Cumulative Wealth Distribution, United States

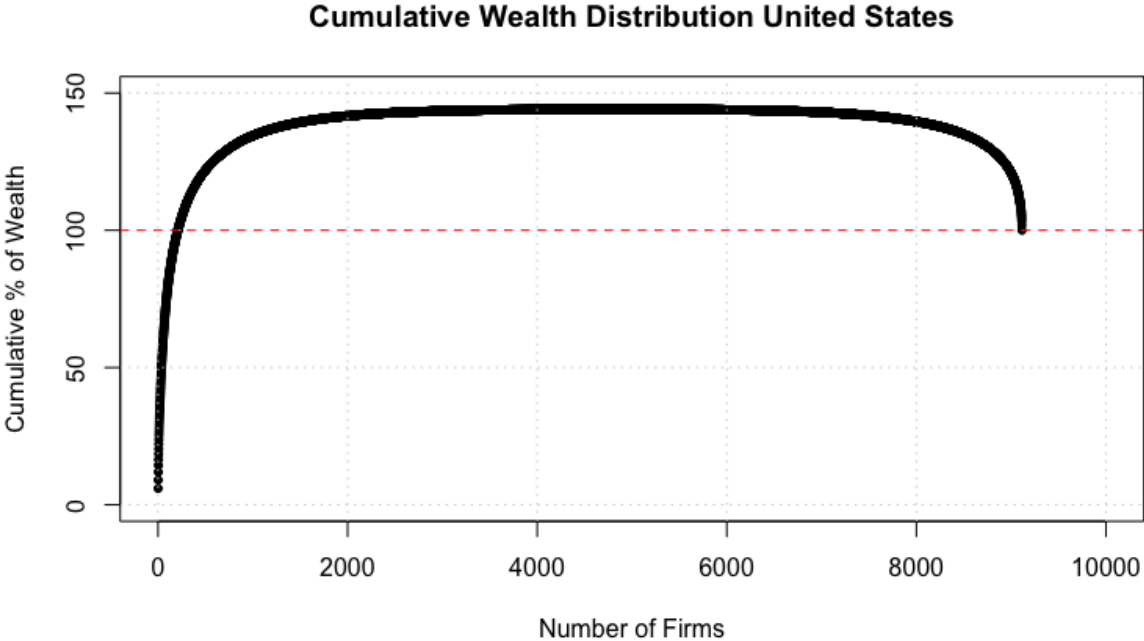
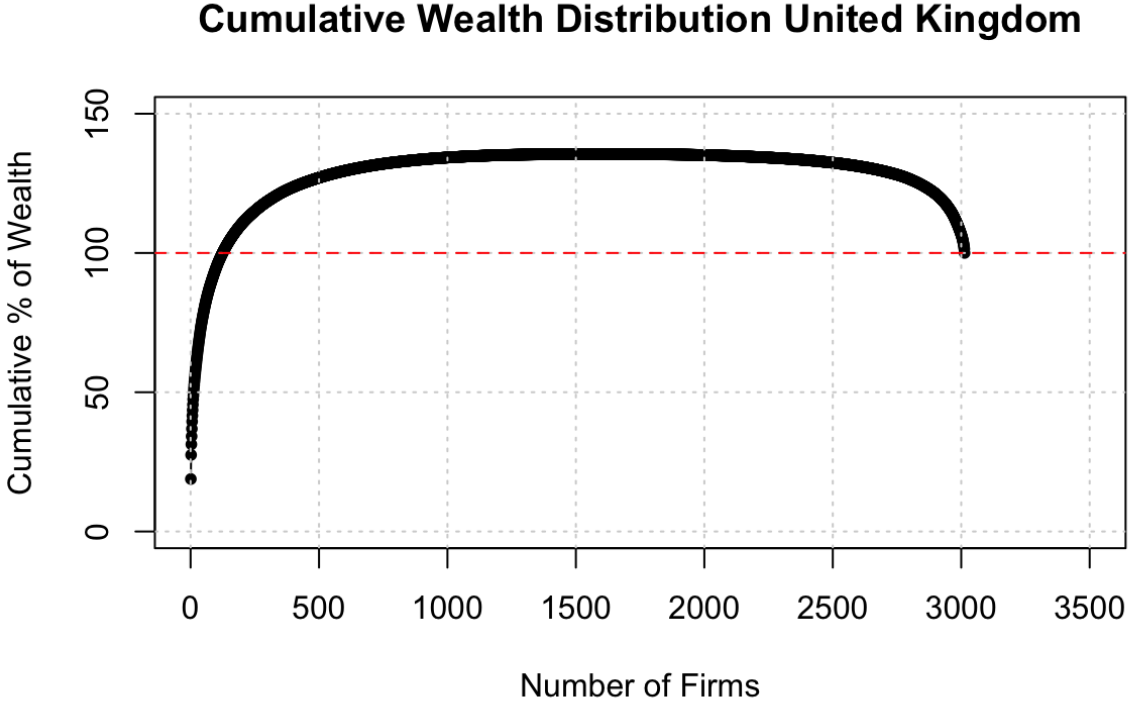


Figure 1B. Cumulative Wealth Distribution, United Kingdom



B.2 Shareholder Wealth Concentration

Figure 2A. Gross Wealth concentration, United States

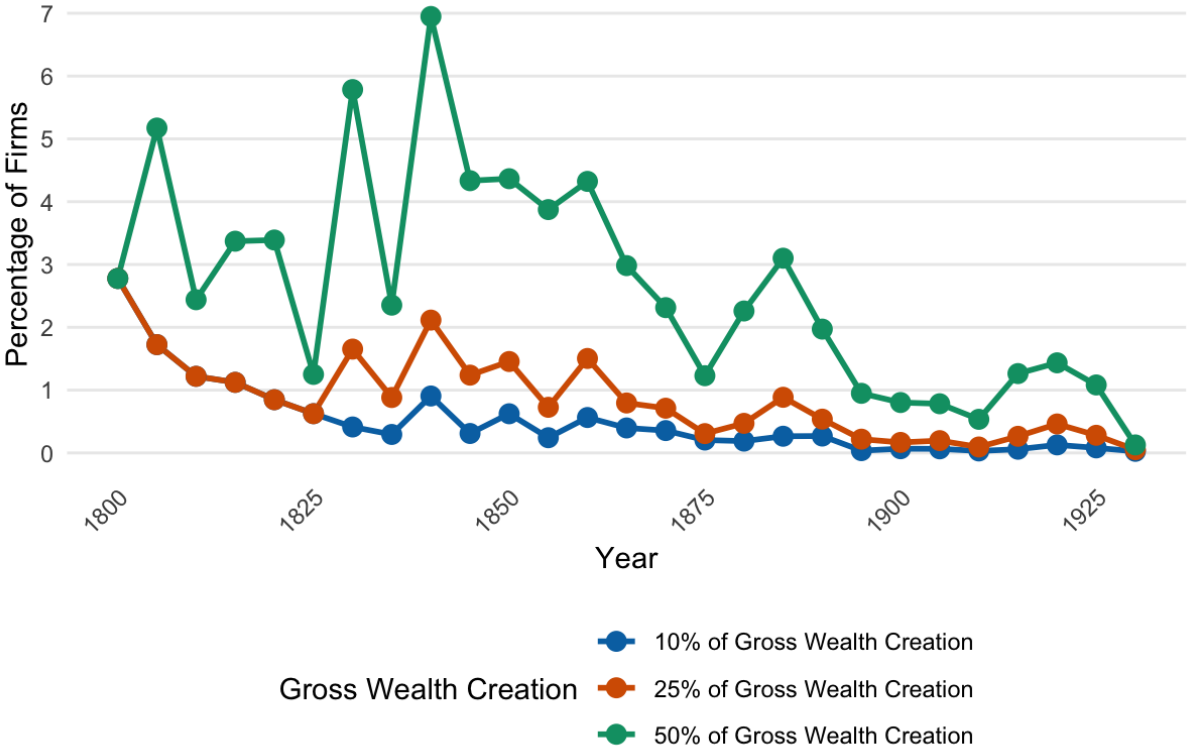
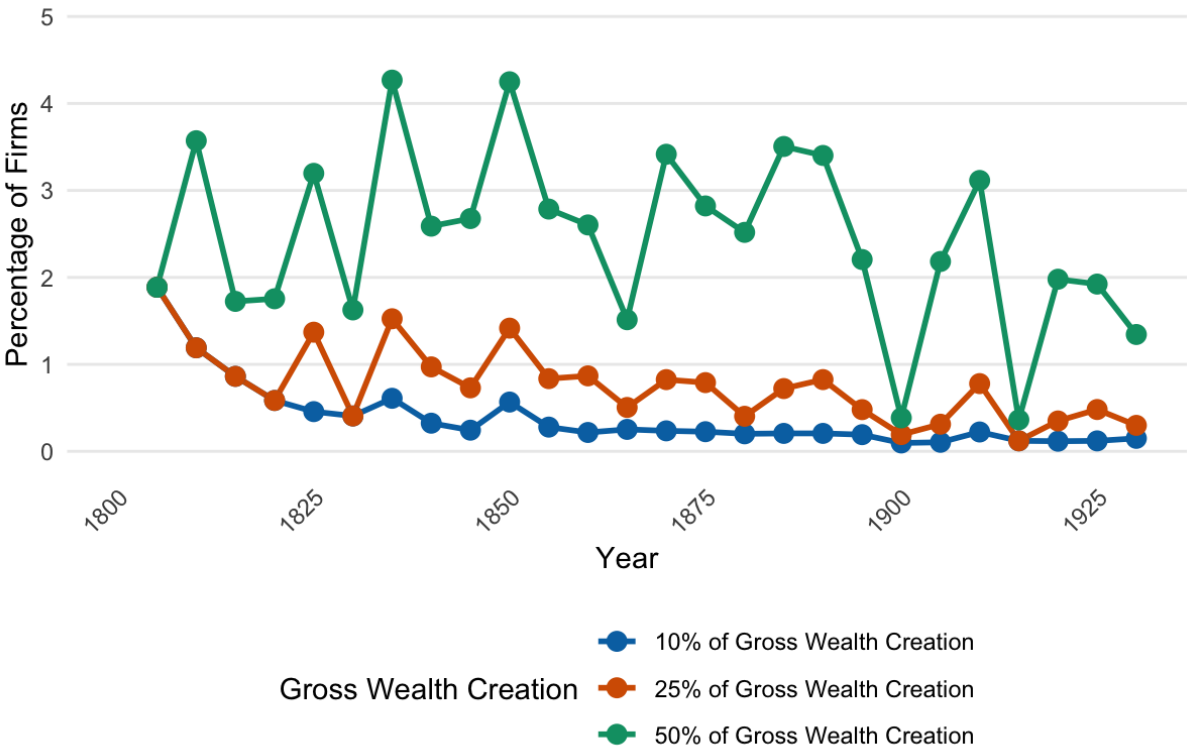


Figure 2B. Gross Wealth concentration, United Kingdom



B.3 Firms with Positive Wealth Creation

Figure 3A. Percentage of Firms with Positive SWC, United States

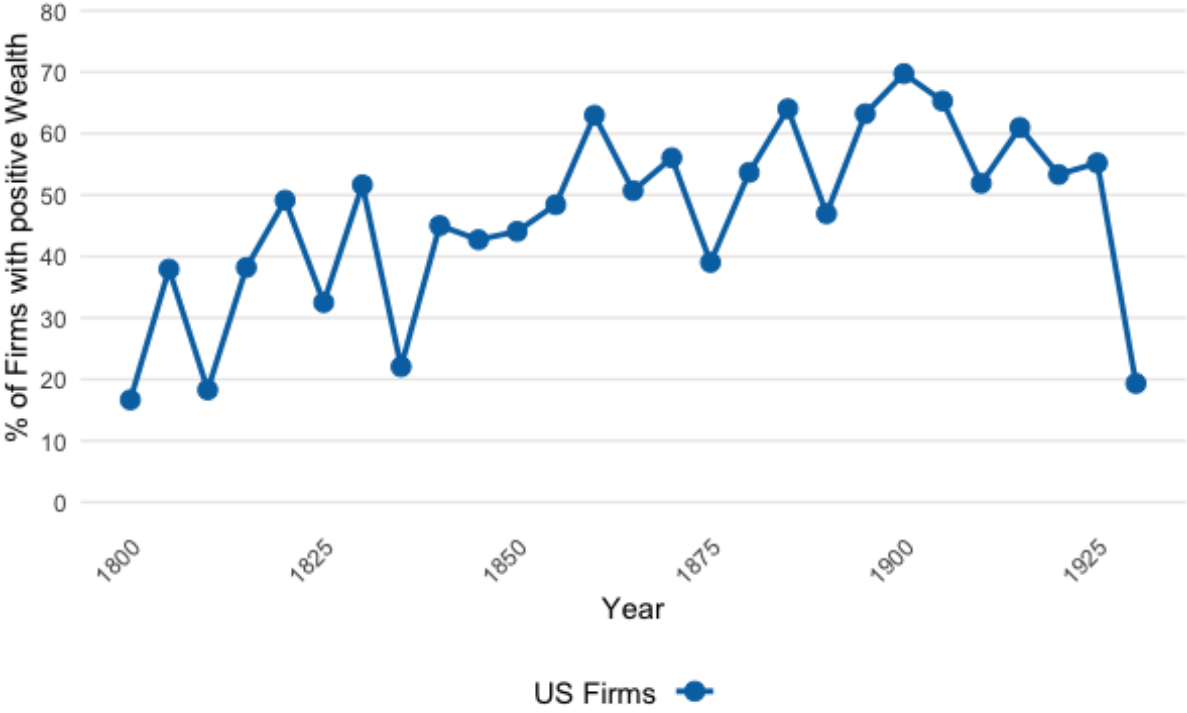


Figure 3B. Percentage of Firms with Positive SWC, United Kingdom

