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Impact of institutional investors on capital markets in selected European countries

Mila Mitreva
Assistant, Faculty of Economics, Goce Delcev University, Stip, North Macedonia
ORCID ID: 0000-0001-6510-5063
Email: mila.mitreva@ugd.edu.mk

Ljupco Davcev
Professor, Faculty of Economics, Goce Delcev University, Stip, North Macedonia
Email: ljupco.davcev@ugd.edu.mk

Marija Gogova Samonikov
Professor, Faculty of Economics, Goce Delcev University, Stip, North Macedonia
Email: marija.gogova@ugd.edu.mk

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Abstract

The aim of this paper is to analyze the effect that the institutional investors-pension funds, insurance companies and investment funds have on the capital markets in Austria, Belgium, Germany, Finland and Sweden for the period 2010-2022. The analysis was conducted in E-Views using the Unit Root Stationarity Test, Hausman test and panel regression analysis. The results showed that investment funds are statistically significant variable with positive impact on the capital markets in these countries.

1. Introduction

Well-functioning financial systems are of significant importance for the economic development of any country. Goldsmith (1969) in his paper empirically proved the positive relationship between financial development and GDP per capita. However, there have been several studies that have examined the factors that can affect the financial system development (Hauner, 2006; Ahmad and Malik, 2009; Vilma and Lina, 2014). Although literature provides profound analysis for the determining factors of impact on financial development, still there is vast differentiation among the countries. Some countries managed to implement investor protection laws and introduced the right mechanisms, while others have not implemented the right policies and regulations, which has affected the level of their financial development. Additionally, Allen and Gale (2000); Boyd and Smith (1998) showed that during economic development, financial literacy in a country improves, and the demand for services related to securities market also increases. Although in the existing literature there are many studies that confirm the existence of a relationship between the financial markets and economic growth, still, there is no unified conclusion about the direction of the relationship. Some papers show that the financial system affects economic growth (Deidda and Fattouh, 2002), while others show that economic growth affects the financial system development (Cecchetti and Kharroubi, 2012). However, in the last two decades the interest in the impact of non-banking financial institutions on economic growth and the capital markets has been increasing. Therefore, when it comes to non-banking financial institutions such as institutional investors, their importance for capital market development has been analyzed in several papers (Arena, 2008; Klapper, et al., 2004; Davis and Hu, 2006). The assets under management of these investors has been tripling since the early 1990s. Therefore, they are considered a great source of long-term financing, which is necessary for the investment needs of different sectors of the economy (OECD, 2021). Undoubtedly, the need for well-developed capital markets becomes greater, considering the large amounts of funds available to institutional investors. The higher the presence of the institutional investors in the capital markets, the more evident is the health and the stability of the financial market.

2. Institutional investors and financial development

Institutional investors include pension funds, insurance companies and mutual funds, which are key participants in the financial markets. Their main activity is to act as intermediary investors that pool, manage and invest other people's money (Çelik and Isaksson, 2013). In the last several decades, their importance and role in the financial markets started to become more evident. Early nineties of the previous century was the period when these investors experienced rapid growth. Sias and Starks (1997) tested the hypothesis that the institutional investor's trading contribute to serial correlation in daily returns. The results of the research showed that institutional trading reflects information and increases the speed of price adjustments. Ajina, et al. (2015) investigated the impact of the institutional investors on information asymmetry and liquidity in the French stock market. The results showed that the liquidity of the stock market is positively affected by the trading activity of the institutional investors. Muslumov and Aras (2005) conducted a research, in which they tested the causality between the institutional investors and stock market development in 23 OECD countries for the period 1982-2000. The results showed two-way causality between the institutional investors and the liquidity of the stock market. It is worth mentioning that institutional investors (especially pension funds) can have stabilizing effect during economic downturns, mainly by buying securities (Boubakri, et al., 2011).

In this context it is worth mentioning that among the institutional investors, the pension funds are considered the largest and fastest growing. There are several researches in the field of the pension funds and the capital markets. According to Meng and Pfau (2007), good regulatory reforms, right macroeconomic policy and well-developed infrastructure are contributing factors that enable the existence positive interaction between the pension funds and the capital markets. Alda and Marco (2017) in their research analyzed the relationship between the pension funds and the stock market development in eight European countries, both in short and long term. The results showed that the pension funds in these countries positively affect the stock market development. According to Peksevim and Ercan (2023), pension funds significantly reduce financial stress in crisis and non-crisis times, but only in countries with strong governance. However, their effect is destabilizing in countries with weak governance. Moleko and Ikhide (2015) in their paper have determined that between the pension savings and the stock market development exists positive relationship. Babalos and Stavroyiannis (2020) analyzed the dynamic interaction between stock market development and pension fund investments in stocks in 29 OECD countries. The results showed bidirectional positive relationship.

Despite the pension funds, the insurance companies are also very important institutional investors in the financial markets. According to Balaban (2012), the insurance companies can enable stronger competition in the financial markets, financial innovations and strong corporate governance. Although the literature that analyzes the impact of the insurance companies on the capital markets is scarce, there is extensive literature that analyzes their impact on the economic growth. According to Uneze and Adeniran (2016), the insurance sector positively affects the economic growth. Dawd and Benlagha (2023) in their paper through panel regression analysis examined the

relationship between the insurance sector and economic growth for 16 OECD countries for the period 2009-2020. The results showed that the relationship between the insurance sector and economic growth behaves like the relationship between the financial industry and GDP. According to Cheng and Hou (2021), life insurance has positive effect on economic growth in short run, while the domestic credit to private sector has negative effect on economic growth in short and in long run. This finding was based on the results from the panel regression analysis for 17 European countries for the period 1980-2015. Therefore, following the research of Robinson (1952), in which it was determined that economic growth has an impact on the financial development, it is expected that if the insurance companies have positive effect on the economic growth, they will also have positive effect on the capital markets.

Investment funds are considered the smallest institutional investors. However they have experienced growth in the past several years. During 2021, the total worldwide assets invested in regulated open-ended funds was $71.1 trillion, of which $34.2 trillion in the United States, $23.3 trillion in Europe, $10 trillion in Asia and 3, $6 trillion in the rest of the world (ICI, 2022). Zacek, J., et al. (2019) through panel regression analysis examined the impact of the European Structural and Investment Funds on economic growth in the Czech Republic for the period 2004-2015. The results showed that these funds have positive impact on the economic growth. Qureshi, et al. (2017) in their research used panel vector autoregressive model to analyze the relationship between the mutual fund flows and stock market volatility in Asian emerging markets. The results showed that the volatility of the market increases with the increase in the flows of capital funds. Nevertheless, the volatility decreases with increasing balanced fund flows. Additionally, equity funds track market volatility positively. According to Kokkonen and Suominen (2015), the hedge funds have a positive influence in correcting and pricing capital markets.

3. Methodology and data

The aim of this paper is to determine the impact that the institutional investors (pension funds, insurance companies and investment funds) have on the capital markets in several European countries: Austria, Belgium, Germany, Finland, and Sweden for the period 2010-2022. The data was obtained from the OECD database and the analysis was conducted in E-Views. Nevertheless, before conducting the analysis in detail were analyzed several papers that focused on the institutional investors (Webb, et al. (2002); Muslumov and Aras (2005); Thomas, et al. (2014); Vittas (1998); Merton and Bodie (1995); Darvas and Schoenmaker (2017)). Therefore, following the paper of Muslumov and Aras (2005) in which they analyzed the causal relationship between the institutional investors and the capital markets in OECD countries, where they used market capitalization as a variable representing the capital market, and total assets of institutional investors as a percentage of GDP, in this paper the applied model is the following:

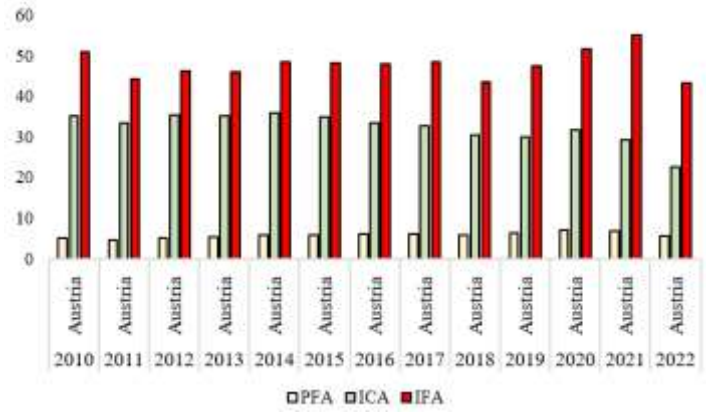
Model 1: $MC_{it} = constant + PFA_{it} + ICA_{it} + IFA_{it} + \varepsilon_{it}$

In the stated model, the independent variables are *PFA*, *ICA* and *IFA*, where *PFA* stands for pension funds' assets as percentage of GDP, *ICA* stands for insurance companies' assets as percentage of GDP and *IFA* stands for investment funds assets as percentage of GDP. The dependent variable is *MC*, which stands for market capitalization of listed domestic companies (% of GDP).

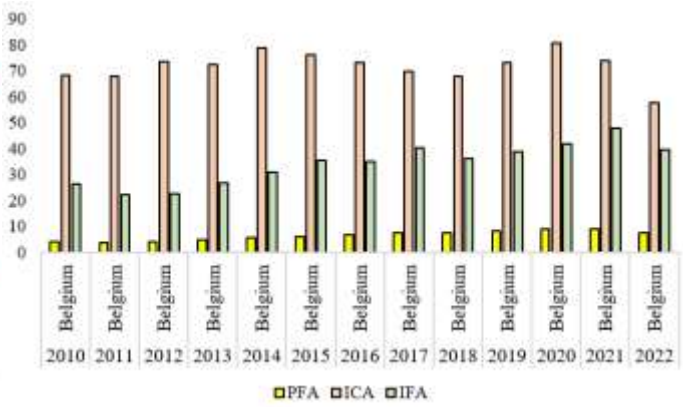
In order to understand which institutional investor has the highest participation in the GDP of the countries included in the research, in the graphs presented below are included the assets of the institutional investors as percentage of GDP for Austria, Belgium, Germany, Finland and Sweden. In Graph 1, it can be seen that in Austria, the investment funds as percentage of GDP had the highest value for the stated period. However, this value has been slightly decreasing, from 50.91% in 2010 to 43.47% in 2022. Insurance companies have lower participation in the Austrian GDP, with a decreasing trend, from 35.23% in 2010 to 22.6% in 2022. Pension funds are the smallest type of institutional investors, with relatively unsignificant participation in the Austrian GDP. The values are constant throughout the stated period, with the average value of 5.8%. In regards to Belgium, the insurance companies have the highest participation in the GDP, with a decreasing trend after the corona crisis, from 80.66% in 2020 to 57.9% in 2022. Investment funds have lower participation in the Belgian GDP, but there is an increasing trend from 26.48% in 2010 to 39.76% in 2022. When it comes to the pension funds, the situation is similar as in Austria, with average participation of 6.5% for the period 2010-2022. Interesting are the results for Germany. From the Graph presented below it is evident that after the corona crisis, the investment funds have the highest participation in the GDP, reaching 63.98% in 2022. For the period 2010-2016, the insurance companies had the highest participation (63.14%in 2016), but in 2022 this value decreased to 59.2%. In this country pension funds also have the lowest participation in the GDP, with constant values, 13.8% in 2010-17.25% in 2022. In Finland it is evident that for the period 2010-2022 the investment funds are the largest institutional investors, with highest participation in the GDP, 35.4% in 2010 reaching 61.78% in 2022. Insurance companies are the second institutional invstors and their participation in the Finish GDP has been slightly fluctuating, from 28.23% in 2010 to 29.24% in 2022. The assets of the pension funds as % of GDP have

very low values of an average 1.5%. Sweden is an exception from the previous mentioned countries because the pension funds are the largest institutional investors, with values of 71.44% in 2010 to 109.87% in 2022. The participation of the investment funds has been increasing from 2018-2021, with slight decrease in 2022 with total value of 100.02%. In Sweden, the insurance companies have the lowest participation, with an average of 33.15%.

Graph 1: Assets of institutional investors as percentage of GDP for Austria

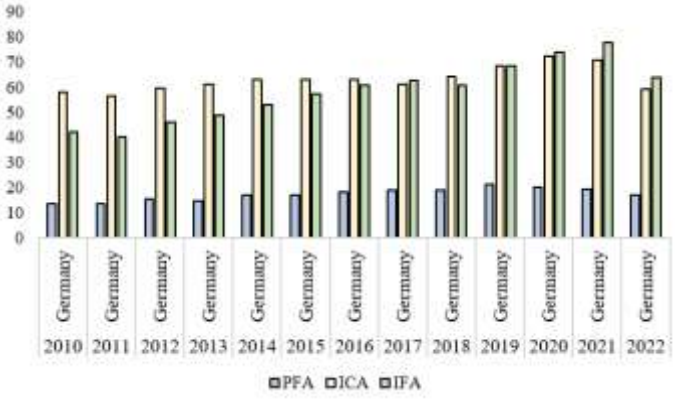


Graph 2: Assets of institutional investors as percentage of GDP for Belgium

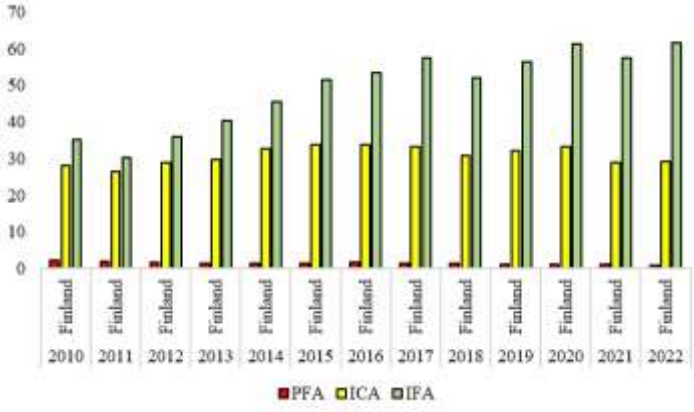


Source: OECD (2024)

Graph 3: Assets of institutional investors as percentage of GDP for Germany

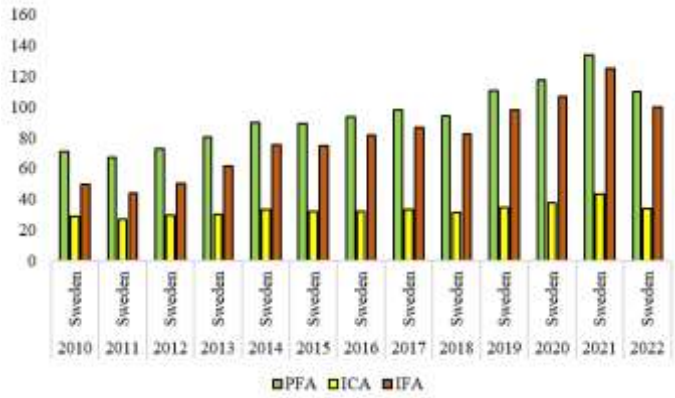


Graph 4: Assets of institutional investors as per. Finland



Source: OECD (2024)

Graph 5: Assets of institutional investors as percentage of GDP for Sweden



Source: OECD (2024)

3.1 Empirical analysis

As one of the steps applied to obtain statistical power when doing panel analysis is the stationarity test. This test shows if the series has a stochastic trend. The presence of stationarity affects the stability and predictability of the data. The hypotheses when conducting the stationarity test are the following:

H_0: The time series has a unit root, indicating non-stationarity.

H_1: The time series is stationary, which means it does not have a unit root.

If the probability in any of the stationarity tests is lower than the significance level of 1%, 5% or 10%, the null hypothesis is rejected and it is concluded that the variable does not have a unit root, that is, it is stationary. If the probability is greater than the level of significance, then the null hypothesis is accepted, whereby the variable has a single root, that is, it is non-stationary. Therefore, the *p*-value of the unit root test was bigger than the level of significance, which suggested that the variables should be integrated at first difference ~I(1).

The second step included the Hausman test which determines whether fixed or random effects should be applied. The hypotheses for this test are the following:

H_0: The random effects model is appropriate.

H_1: The fixed effects model is appropriate.

Hence, if the probability is less than the level of significance, H_0 is rejected and fixed effects should be applied. If the probability is greater than the level of significance, H_0 is accepted, and the analysis should be done with random effects. In this case the probability of the Hausman test was 0.947, which suggests that the panel analysis should be done with random effects.

The results from the panel regression analysis are presented in the table below. The results show that statistically significant are only the investment funds, with positive impact on the market capitalization (prob<level of significance). However, the pension funds and the insurance companies were not statistically significant variables for the stated period. R^2 is 73%, which suggests that the model has good explanatory power.

Table 1: Panel regression analysis results

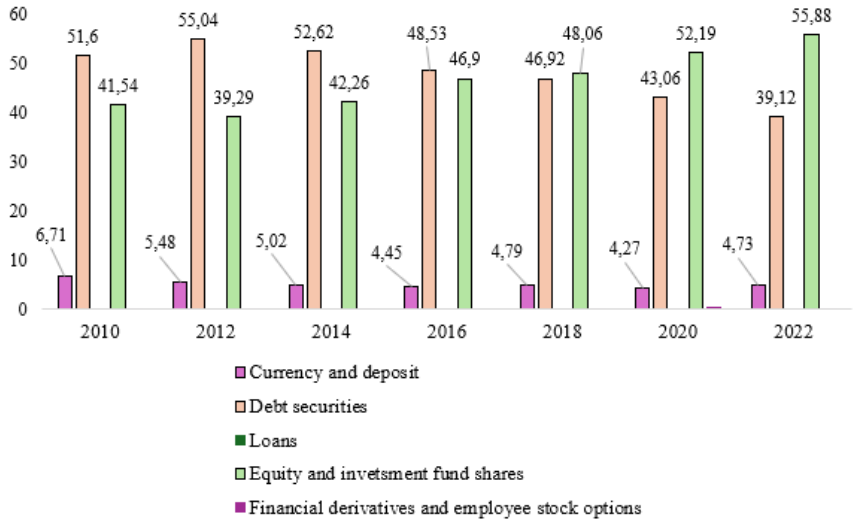
PFA (0.3379);
ICA (0.6948);
IFA (0.000); (+)
R^2=73%

Source: Authors calculation

Since the results showed that investment funds have positive impact on the capital markets in these countries, in the tables below are presented the portfolios composition of the investment funds in each country separately. The percentages in the tables represent each asset category separately, as % of total financial assets. The data was obtained from OECD database (OECD, 2024).

The investment portfolio composition in Austria consists of several asset categories. In the period 2010-2016, debt securities take the highest share of the total financial assets. However, from 2018-2022, equity and investment fund shares have the highest values. Additionally, currency and deposit, loans and financial derivatives and employee stock options have the lowest participation in the investment portfolio of the investment funds in Austria.

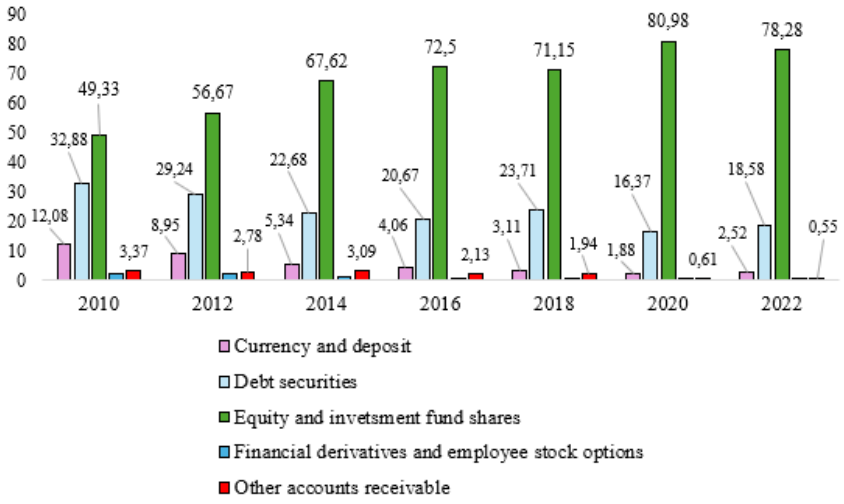
Table 2: Structure of the investment funds portfolio in Austria, as a percentage of total financial assets



Source: OECD (2024)

The Belgian investment funds' investment portfolio consists mostly of equity and investment fund shares (49.33% in 2010-78.28% in 2022). Debt securities have the second place, however, with a decreasing trend, from 32.88% in 2010 to 18.58% in 2022. Regarding the other asset categories, currency and deposit, financial derivatives and employee stock options and other accounts receivable have very low participation in the investment portfolio.

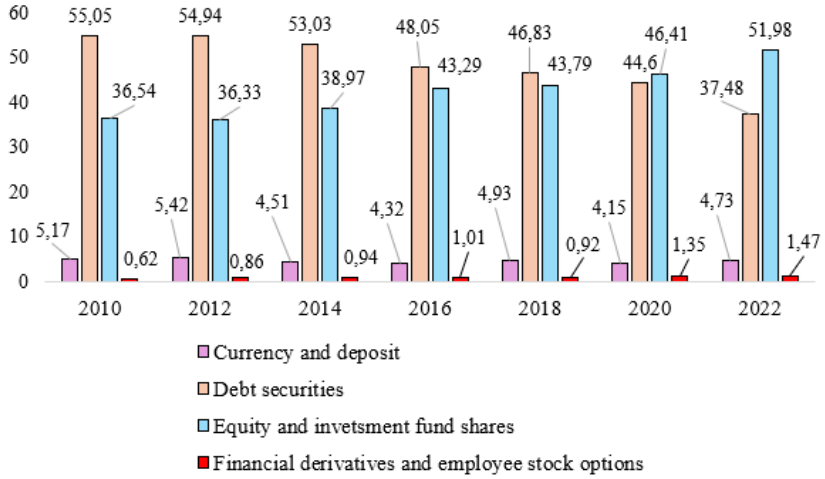
Table 2: Structure of the investment funds portfolio in Belgium, as a percentage of total financial assets



Source: OECD (2024)

The German investment portfolio of the investment funds consists mostly of debt securities and equity and investment fund shares. Currency and deposit and financial derivatives and employee stock options take up a very low percentage of the total financial assets. However, here it is evident that the investing preferences have changed in 2018. Until 2018, debt securities had the largest part in the portfolio, but in the period 2020-2022, equity and investment fund shares had the highest participation, 51.98% in 2022.

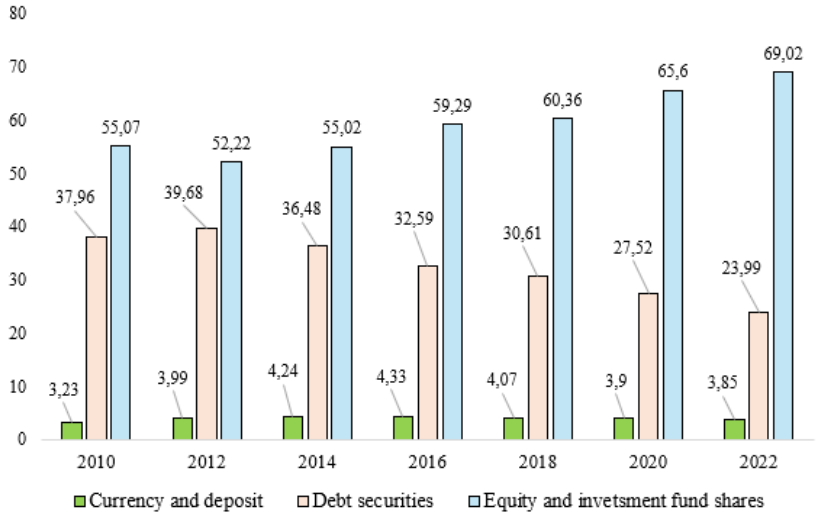
Table 3: Structure of the investment funds portfolio in Germany, as a percentage of total financial assets



Source: OECD (2024)

The structure of the portfolio in Finland is similar to the German investment funds' investment portfolio. Equity and investment fund shares have the highest percentage of total financial assets, with an increasing trend, from 55.07% in 2010-69.02% in 2022. Debt securities have the second place, but with a decreasing trend from 37.96% in 2010-23.99% in 2022. Currency and deposit have very low participation in the total investment portfolio.

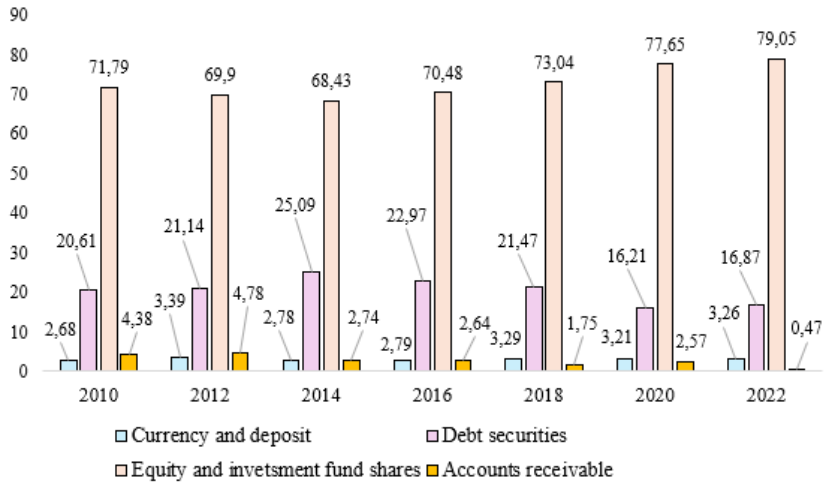
Table 4: Structure of the investment funds portfolio in Finland, as a percentage of total financial assets



Source: OECD (2024)

Although the Swedish portfolio of the investment funds is similar to Finland, still the participation of the equity and investment fund shares is much higher, 71.79% in 2010-79.05% in 2022. Debt securities also have the second place, but with much lower participation of an average of 32.69%. The participation of currency and deposit is relatively low, with an average of 3.9%.

Table 5: Structure of the investment funds portfolio in Sweden, as a percentage of total financial assets



Source: OECD (2024)

4. Conclusion

As stated in the literature above, institutional investors are becoming very important part of the global financial markets. However, their impact on the capital market varies across countries and the reason mainly depends on the size of the institutional investors, and the level of development of the capital market. Although there are studies that analyze the role that institutional investors have on the capital markets, the existing literature is limited in terms of the time period covered and the countries analyzed. In this context, the aim of this paper is to fill the literature in this field through analysis of the effect that the institutional investors (pension funds, insurance companies and investment funds) have on the capital market in Austria, Belgium, Germany, Finland and Sweden for the period 2010-2022. Considering the growth of the assets of the investment funds in the stated countries, the result was according to the expectation, investments funds showed statistically significant positive impact on the capital markets. However, the pension funds and the insurance companies are statistically insignificant variables in this research. Nevertheless, institutional investors are facing growth, but there is a need for creating better regulatory reforms that will stimulate their investment activities. For these investors to perform better, well-developed capital markets are necessary. Overall, various factors can have an impact on the institutional investors. Hence, as further suggestion is creation another paper in which each institutional investor will be analyzed separately in order to better understand their specific position and role in each country.

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