

Online Appendix

Who Benefits from Capital Market Integration in a Monetary Union?

Naomi Cohen

1 Alternative Extensive Margin

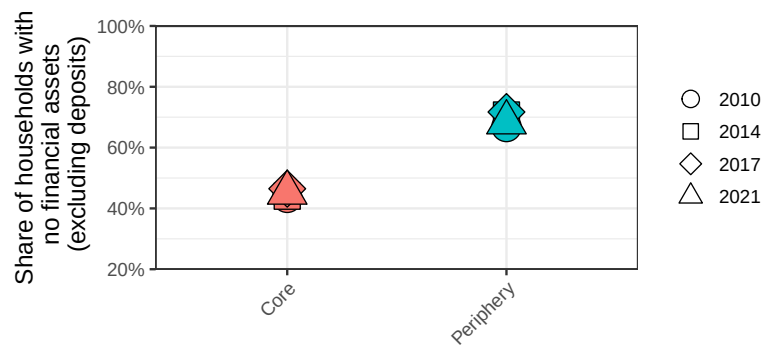


Figure 1: Share of Households Without Financial Assets (Excluding Deposits) by Year. The figure shows the share of households without any financial assets across survey years for the Core and the Periphery.

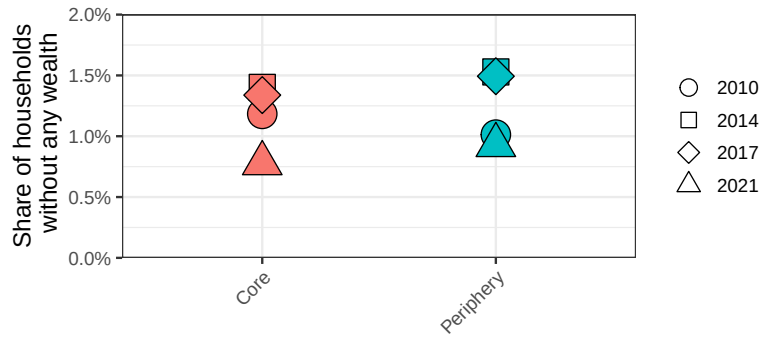


Figure 2: Share of Households Without Any Wealth by Year. The figure reports the share of households with zero total wealth in the Core and the Periphery across HFCS waves.

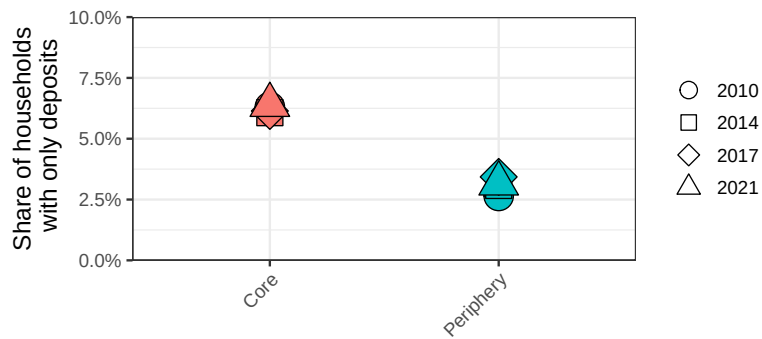


Figure 3: Share of Households Holding Only Deposits by Year. The figure displays the share of households whose only financial holdings consist of deposits in the Core and the Periphery.

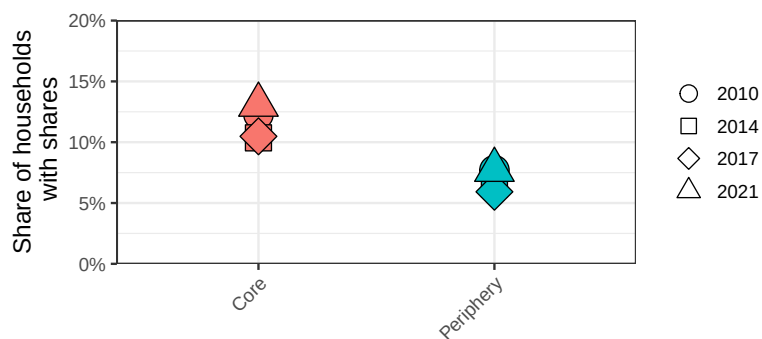


Figure 4: Share of Households Holding Shares by Year. The figure presents the share of households owning shares (directly) across years for the Core and the Periphery.

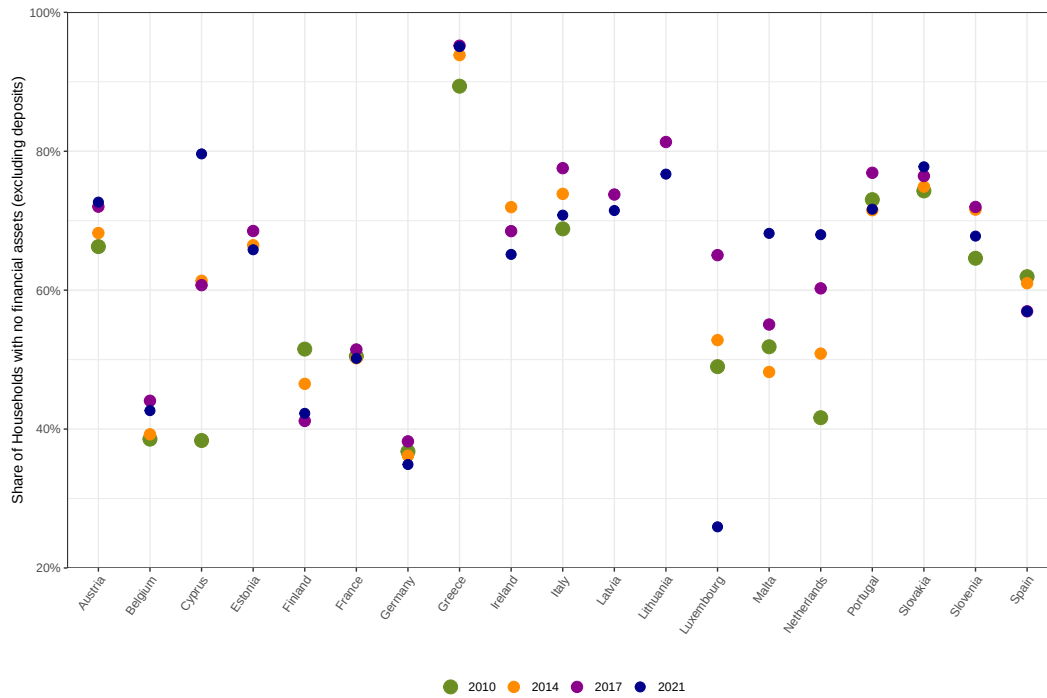


Figure 5: Share of Households Without Financial Assets (Excluding Deposits) by Country and Year. The figure shows the proportion of households without any financial assets across euro area countries and HFCS waves (2010–2021).

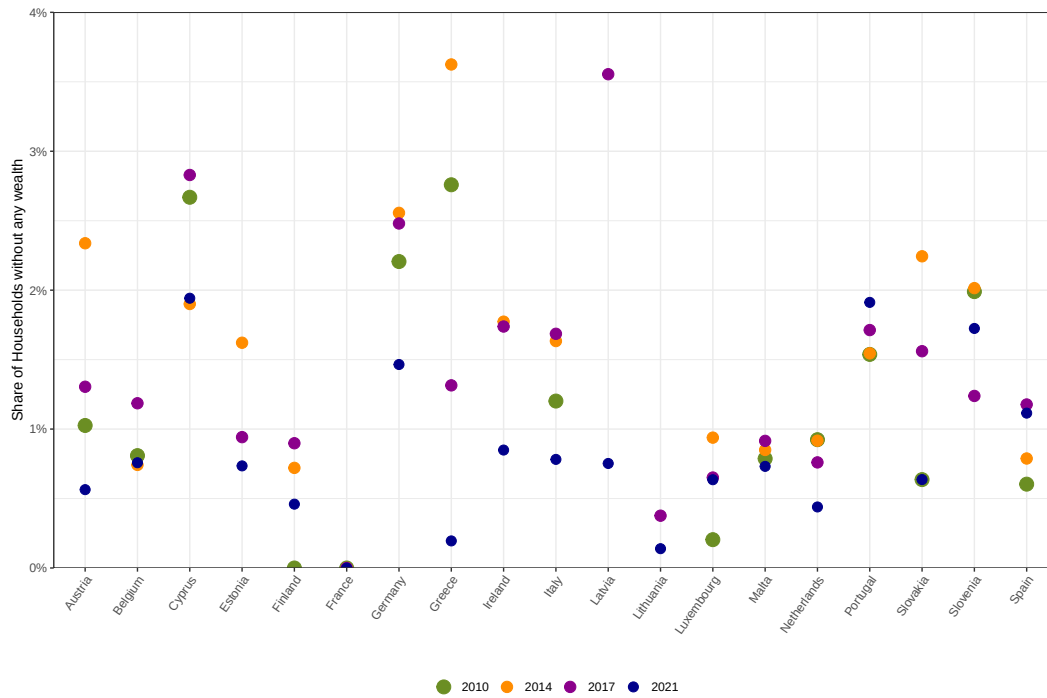


Figure 6: Share of Households Without Any Wealth by Country and Year. The figure shows the proportion of households with zero total wealth across euro area countries and HFCS waves (2010–2021).

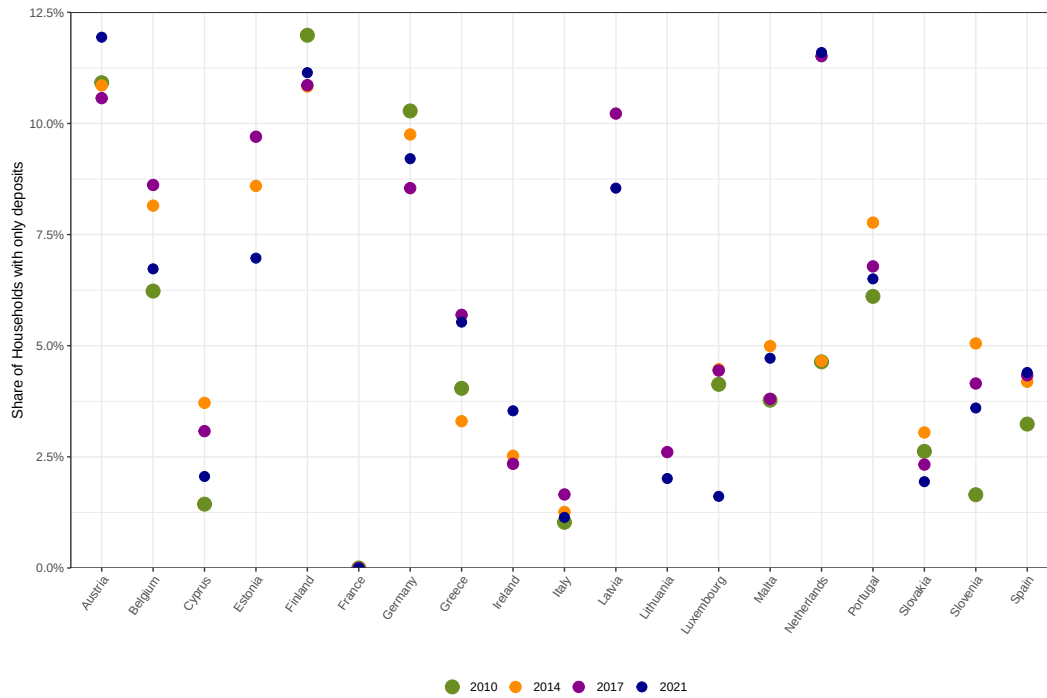


Figure 7: Share of Households Holding Only Deposits by Country and Year. The figure shows the proportion of households whose only financial holdings consist of deposits across euro area countries and HFCS waves (2010–2021).

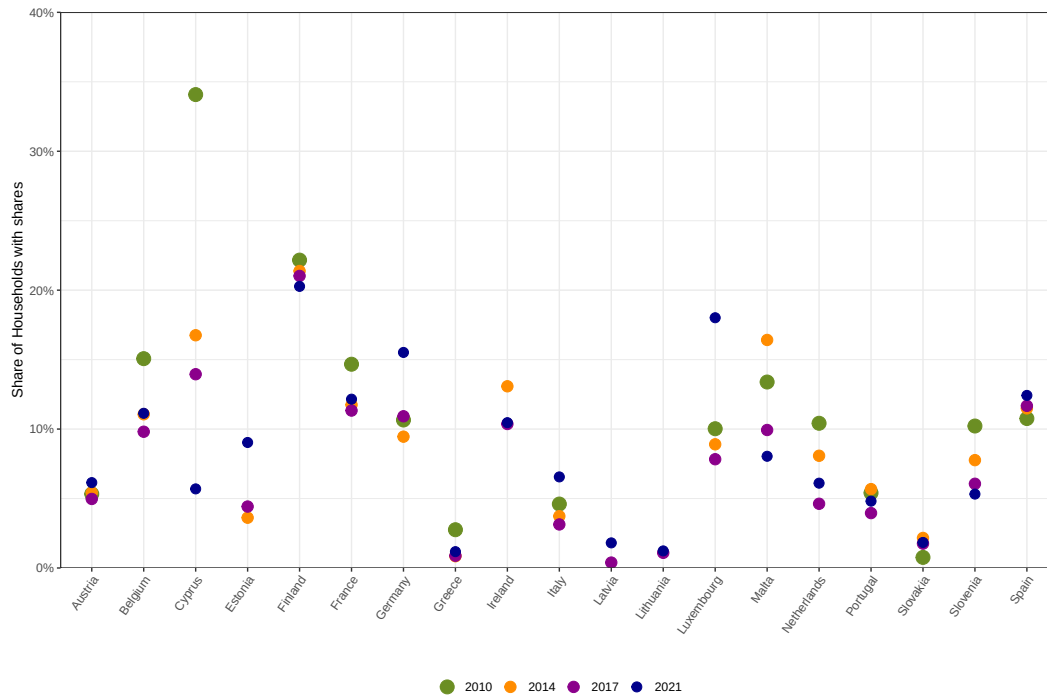


Figure 8: Share of Households Holding Shares by Country and Year. The figure presents the share of households owning shares (directly) across euro area countries and HFCS waves (2010–2021).

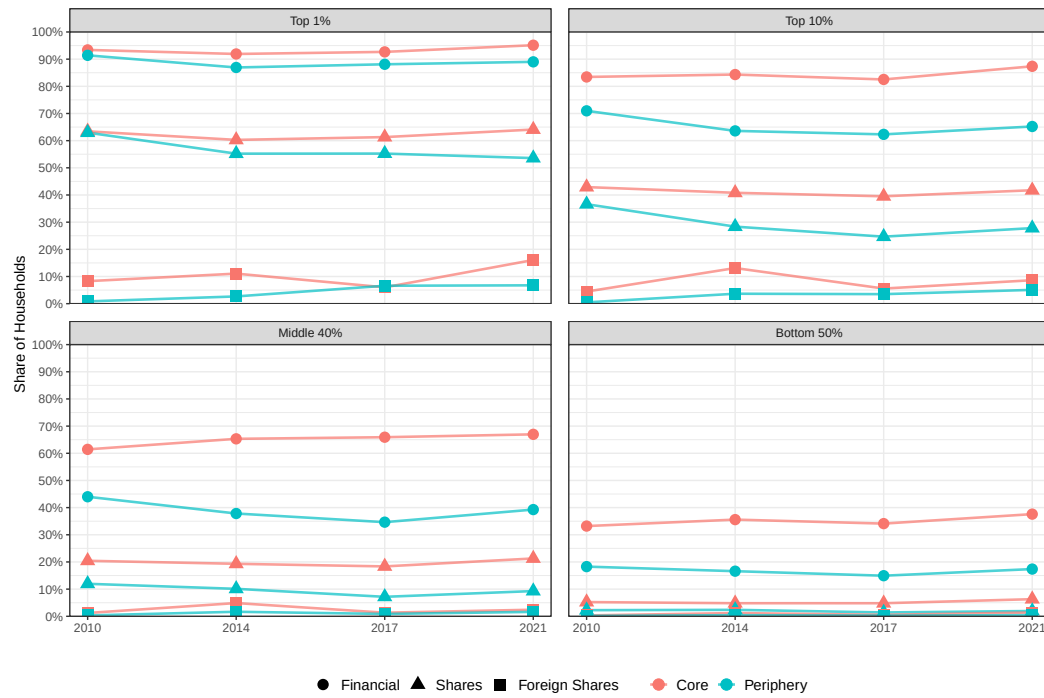


Figure 9: Financial Asset Ownership by Wealth Group (Core vs. Periphery). The figure reports the share of households holding financial assets, shares, and foreign shares across wealth groups (Top 1%, Top 10%, Middle 40%, Bottom 50%) and years.

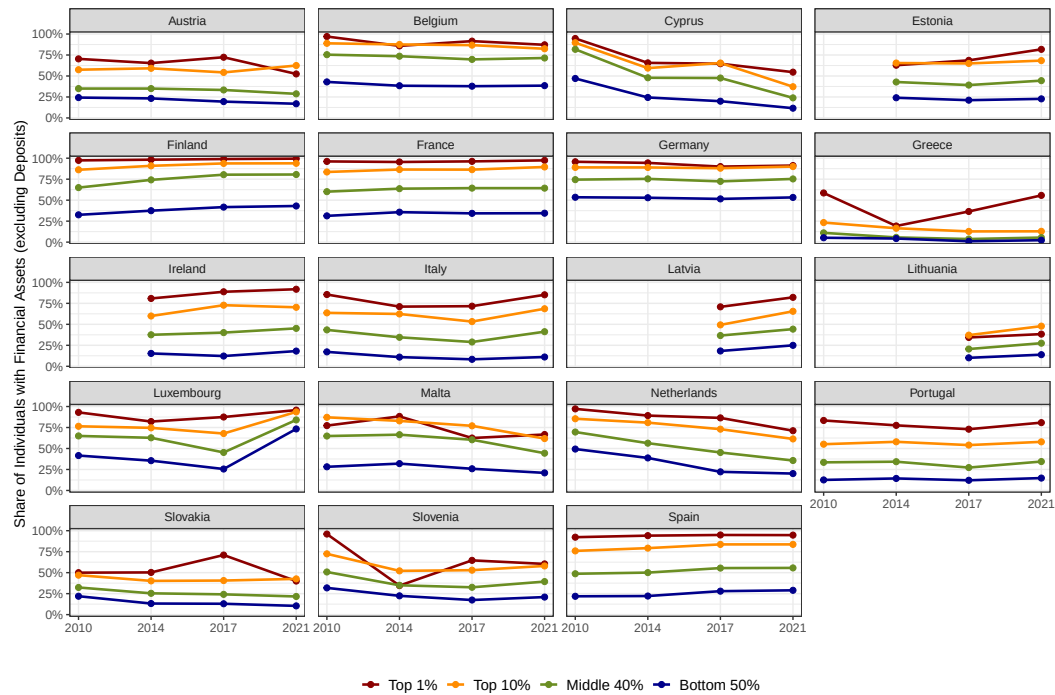


Figure 10: Financial Asset Ownership by Wealth Group and Country. The figure displays the share of households with financial assets (excluding deposits) across wealth groups and euro area countries, for all survey years.

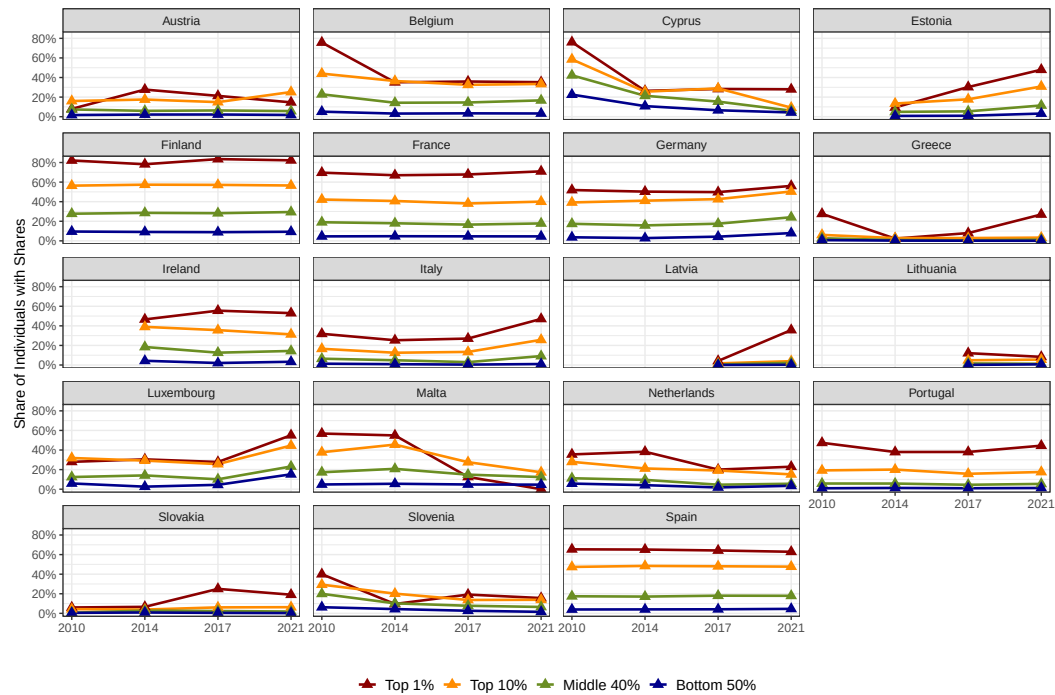


Figure 11: Share Ownership by Wealth Group and Country. The figure reports the share of households holding shares (directly) across wealth groups and countries, distinguishing the Top 1%, Top 10%, Middle 40%, and Bottom 50% of the distribution.

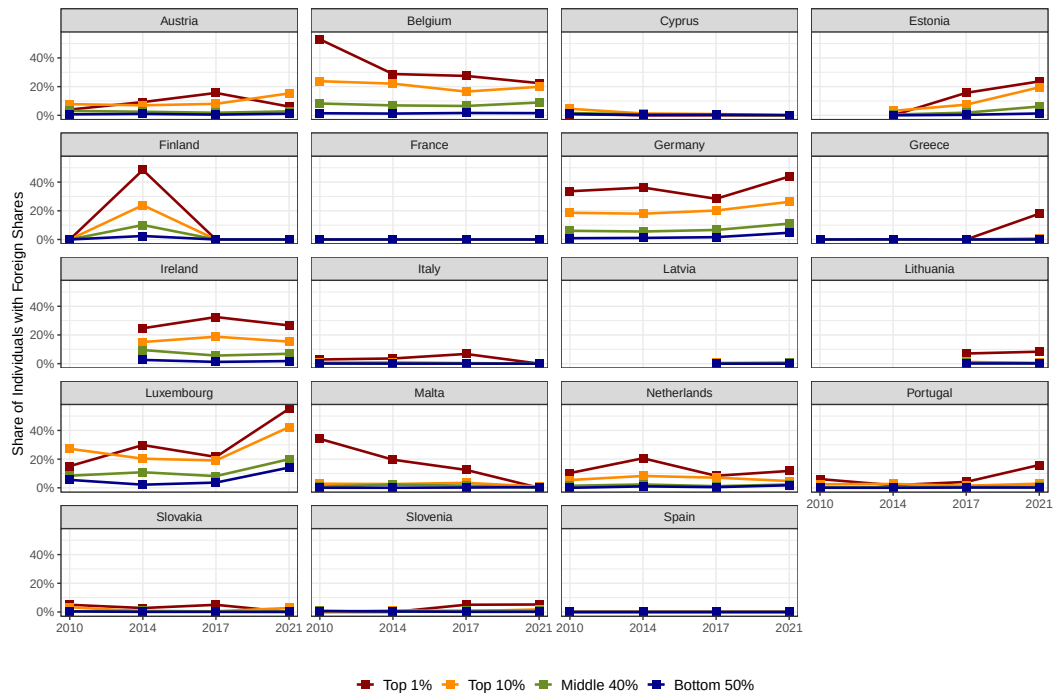


Figure 12: Foreign Share Ownership by Wealth Group and Country. The figure shows the share of households holding foreign shares across wealth groups and euro area countries, for all HFCS waves (2010–2021).

2 Limited Evidence of Diversification at the Household Level

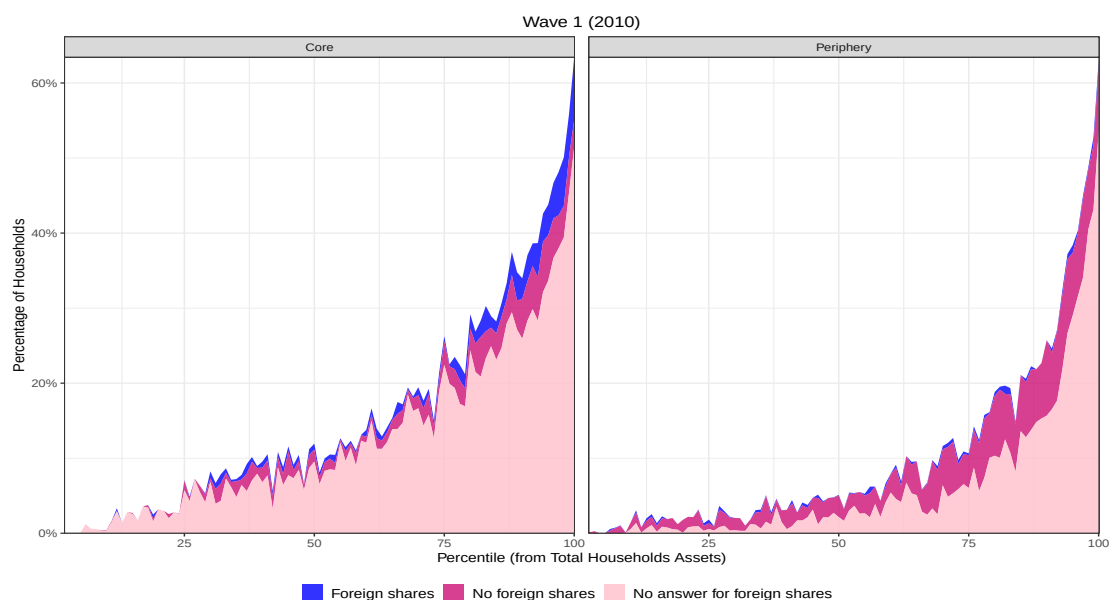


Figure 13: Decomposition of Foreign Share Ownership Responses (2010). The figure shows, by wealth percentile, the share of households reporting ownership of foreign shares (“Yes”), no foreign shares (“No”), and missing responses (“No answer”) for the Core and the Periphery.

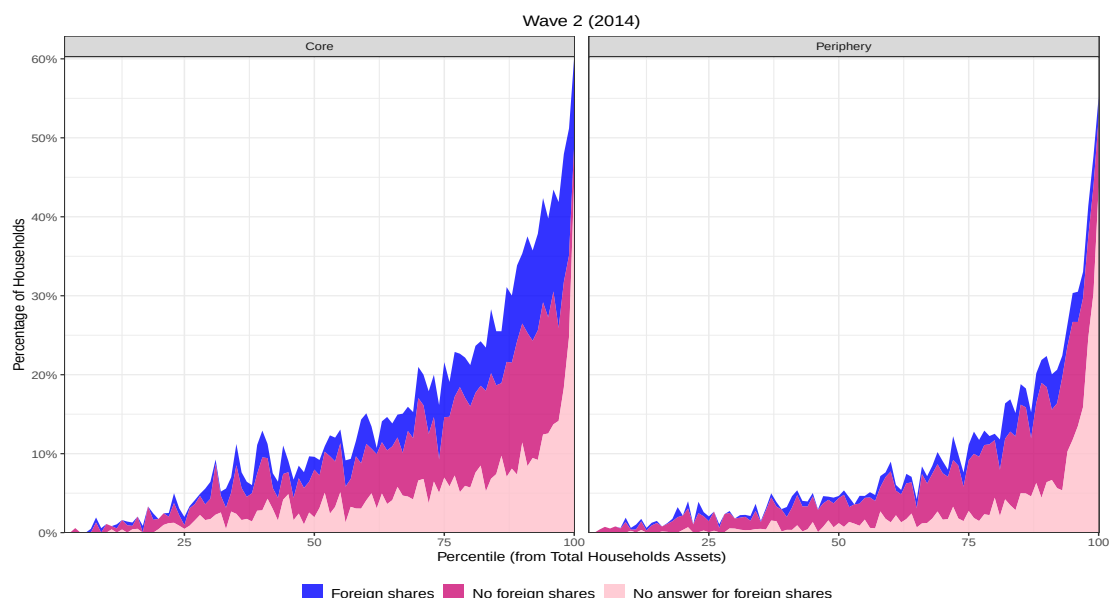


Figure 14: Decomposition of Foreign Share Ownership Responses (2014). The figure shows, by wealth percentile, the share of households reporting ownership of foreign shares (“Yes”), no foreign shares (“No”), and missing responses (“No answer”) for the Core and the Periphery.

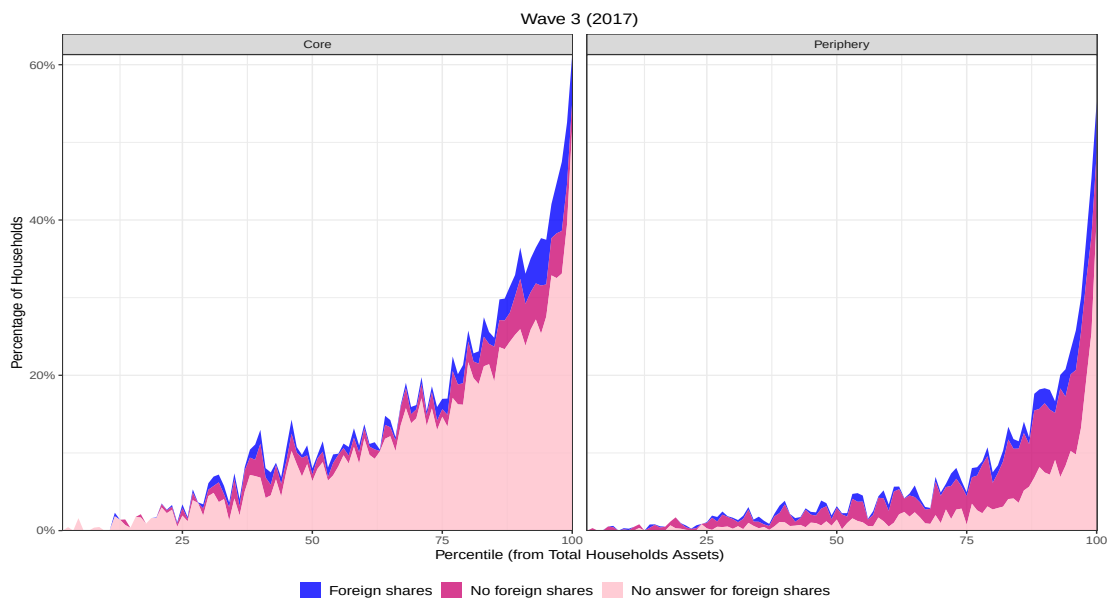


Figure 15: Decomposition of Foreign Share Ownership Responses (2017). The figure shows, by wealth percentile, the share of households reporting ownership of foreign shares (“Yes”), no foreign shares (“No”), and missing responses (“No answer”) for the Core and the Periphery.

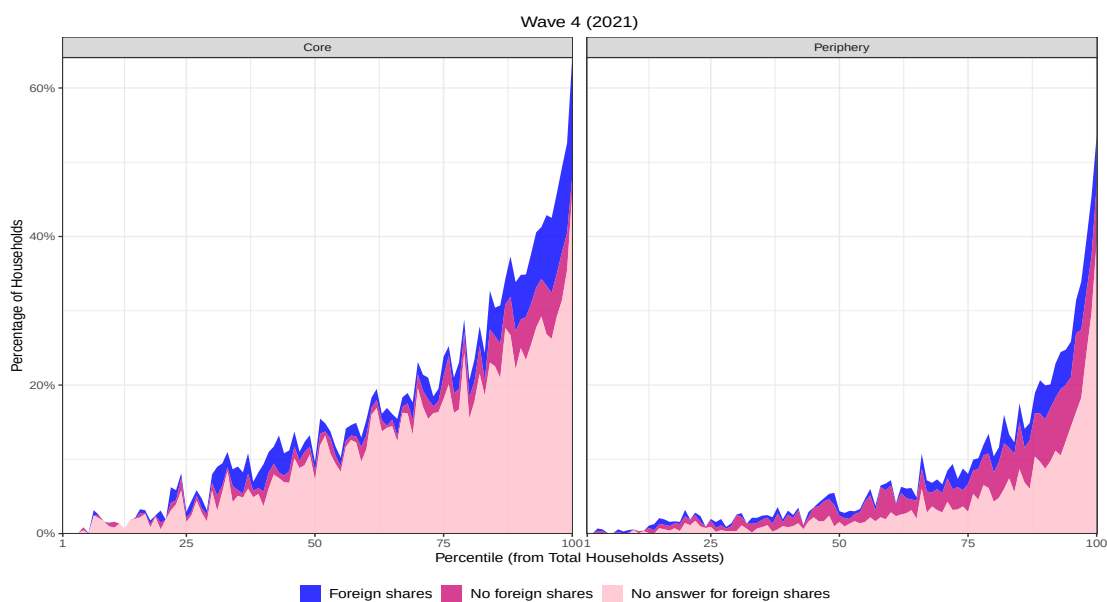


Figure 16: Decomposition of Foreign Share Ownership Responses (2021). The figure shows, by wealth percentile, the share of households reporting ownership of foreign shares (“Yes”), no foreign shares (“No”), and missing responses (“No answer”) for the Core and the Periphery.

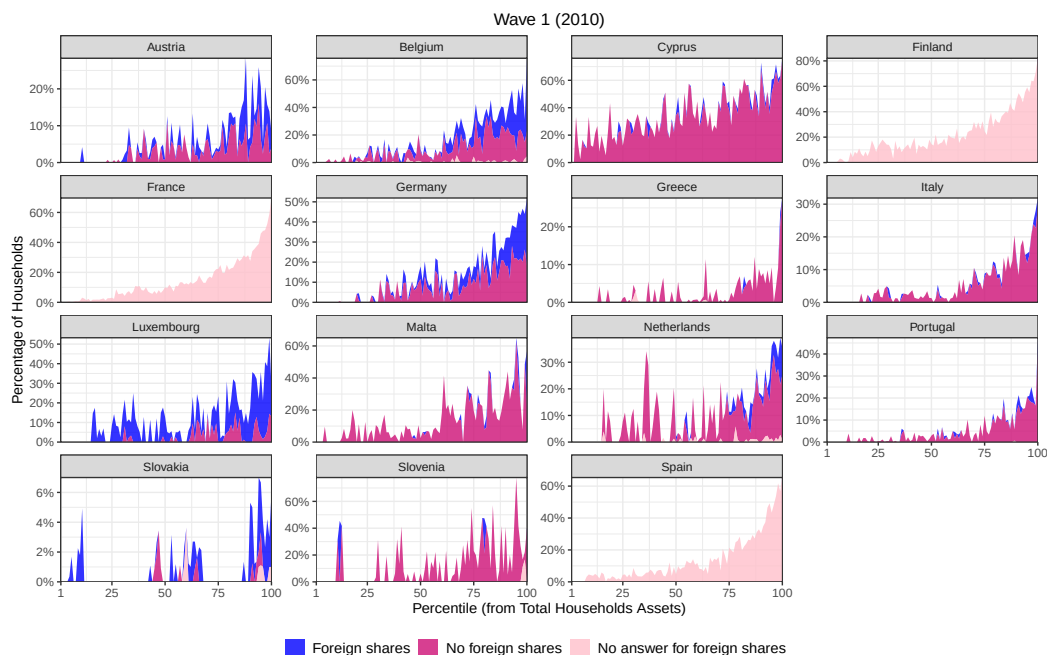


Figure 17: Foreign Share Ownership by Country (2010). The figure reports, for each euro area country, the percentage of households holding foreign shares (“Yes”), domestic shares only (“No”), or not responding (“No answer”), along the wealth distribution.

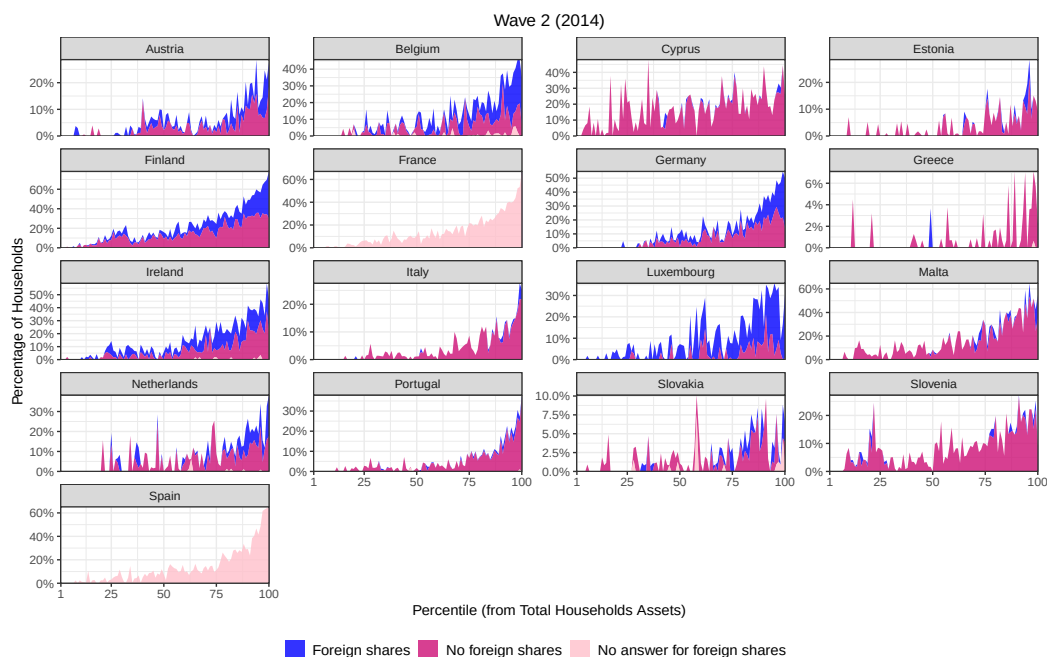


Figure 18: Foreign Share Ownership by Country (2014). The figure reports, for each euro area country, the percentage of households holding foreign shares (“Yes”), domestic shares only (“No”), or not responding (“No answer”), along the wealth distribution.

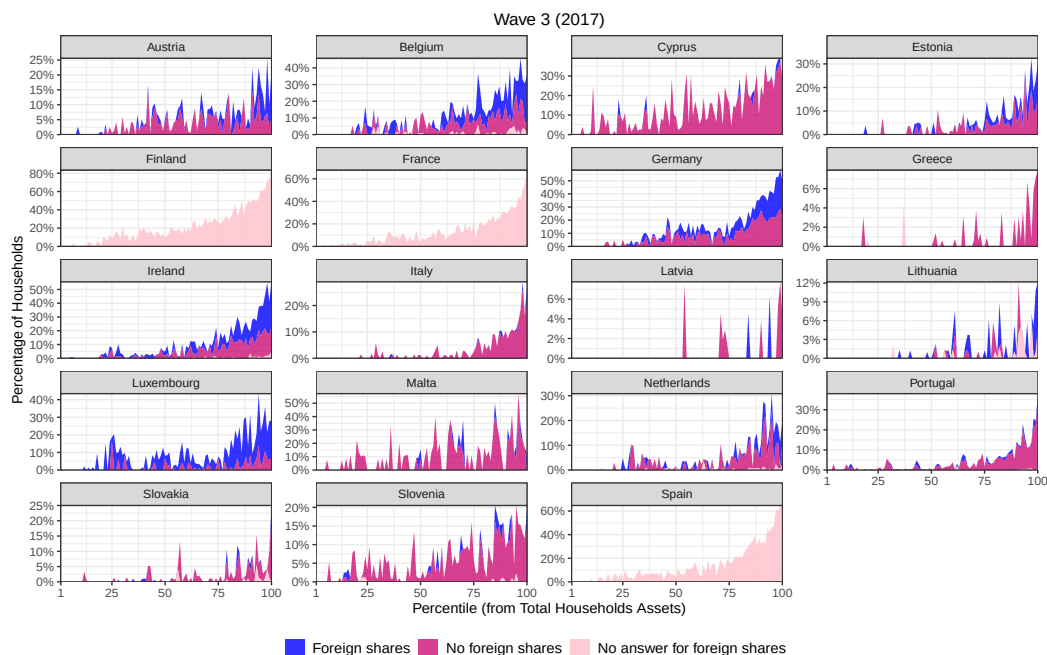


Figure 19: Foreign Share Ownership by Country (2017). The figure reports, for each euro area country, the percentage of households holding foreign shares (“Yes”), domestic shares only (“No”), or not responding (“No answer”), along the wealth distribution.

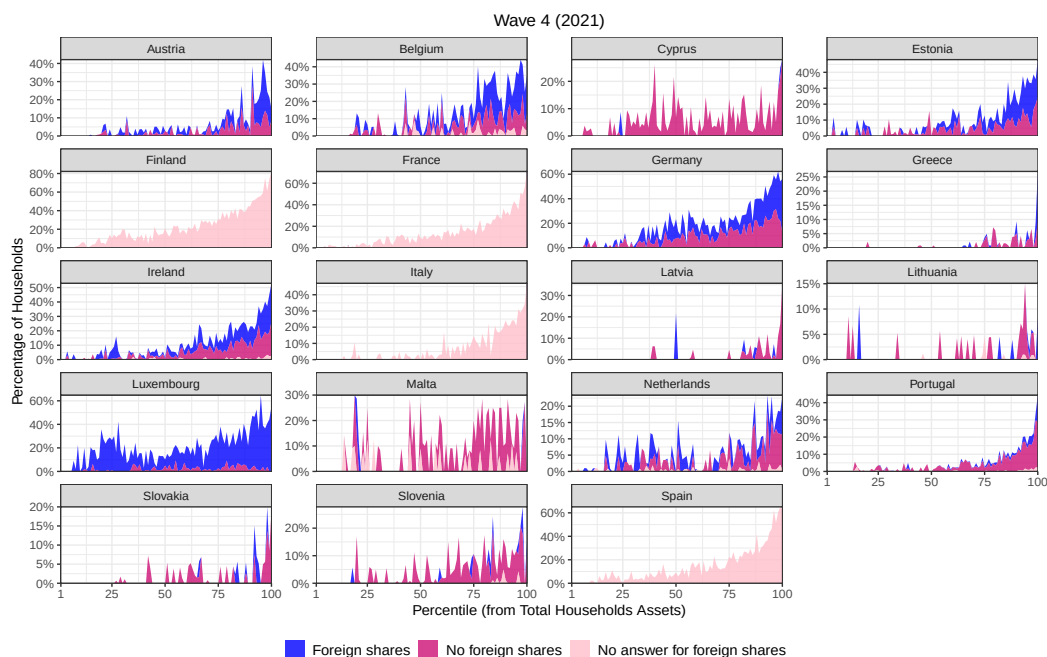


Figure 20: Foreign Share Ownership by Country (2021). The figure reports, for each euro area country, the percentage of households holding foreign shares (“Yes”), domestic shares only (“No”), or not responding (“No answer”), along the wealth distribution.

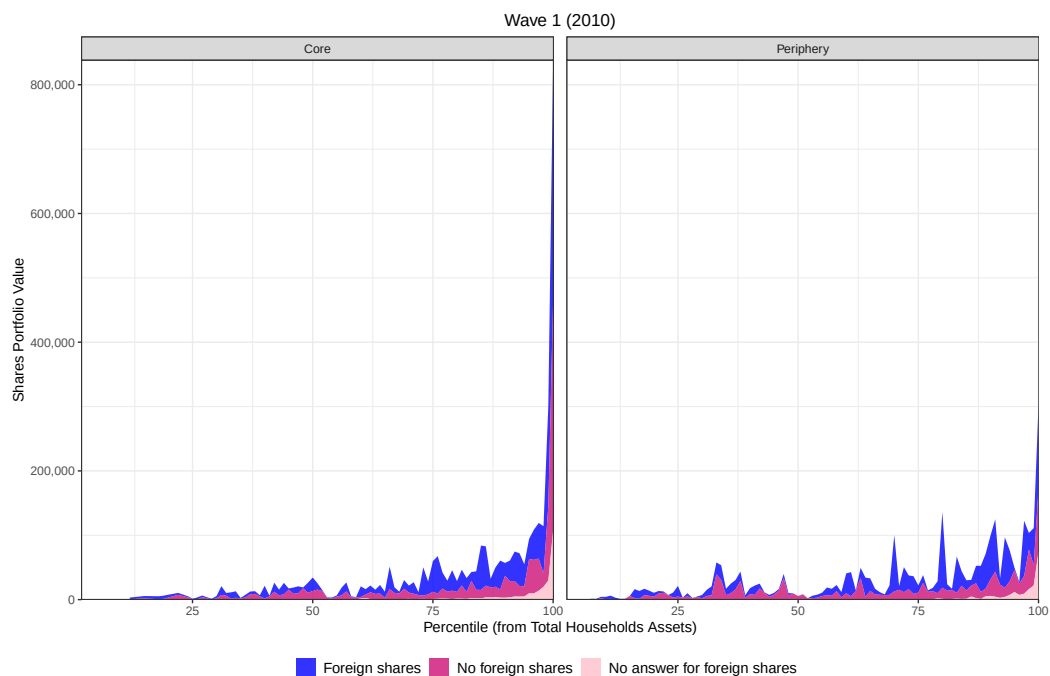


Figure 21: Share Portfolio Value by Foreign Share Ownership (2010). The figure plots the total value of share portfolios across wealth percentiles for households reporting foreign share ownership (“Yes”), no foreign shares (“No”), and no response, separately for the Core and the Periphery.

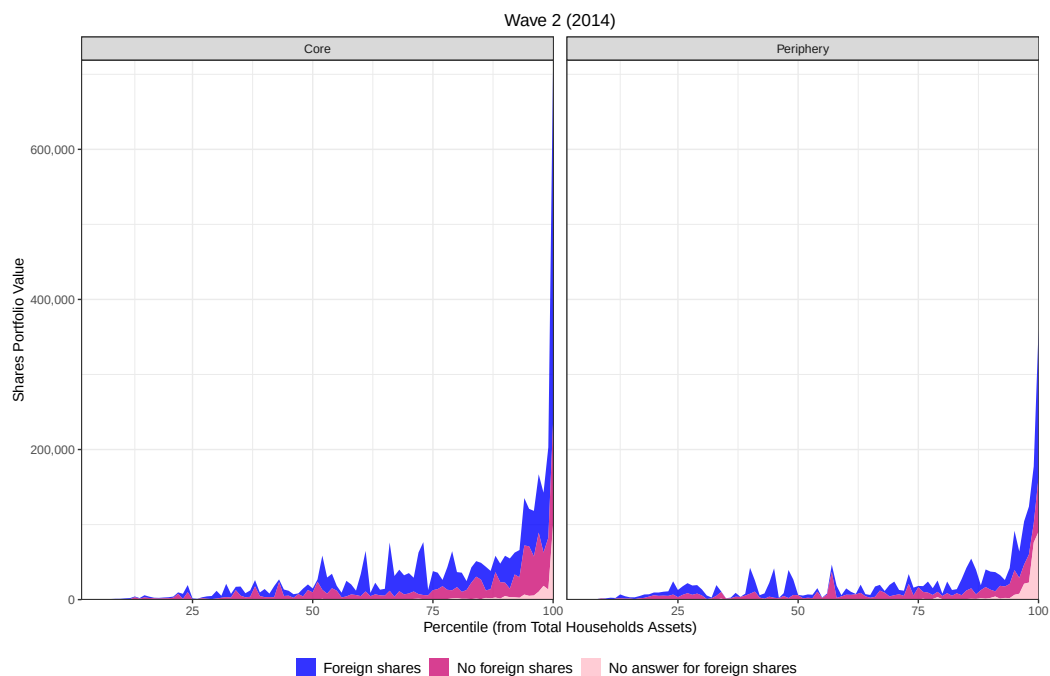


Figure 22: Share Portfolio Value by Foreign Share Ownership (2014). The figure plots the total value of share portfolios across wealth percentiles for households reporting foreign share ownership (“Yes”), no foreign shares (“No”), and no response, separately for the Core and the Periphery.

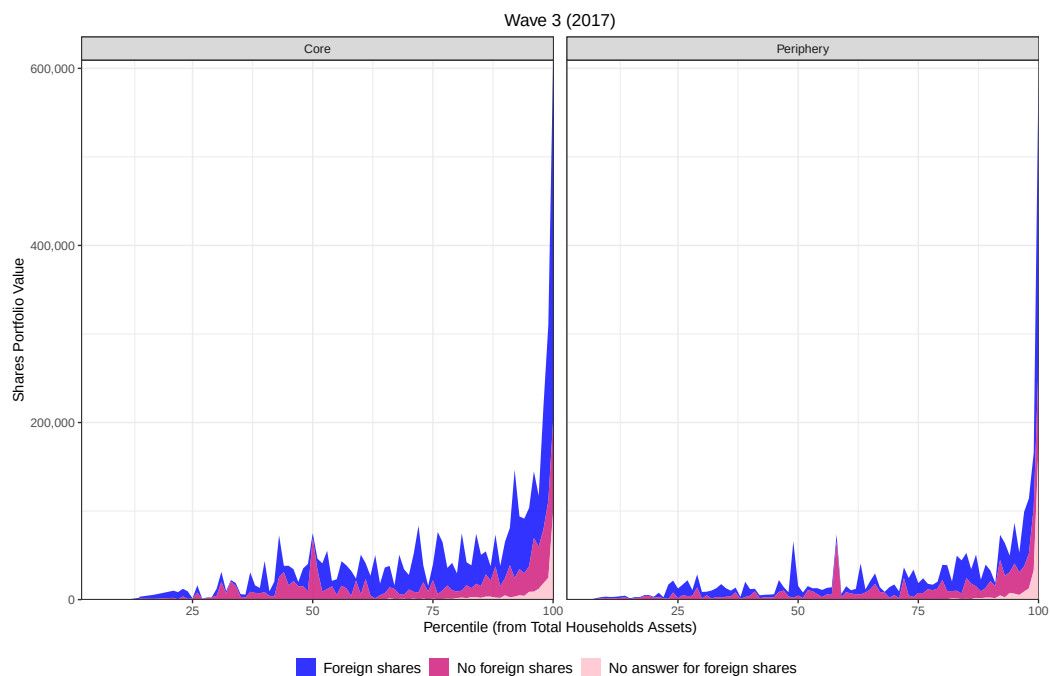


Figure 23: Share Portfolio Value by Foreign Share Ownership (2017). The figure plots the total value of share portfolios across wealth percentiles for households reporting foreign share ownership (“Yes”), no foreign shares (“No”), and no response, separately for the Core and the Periphery.

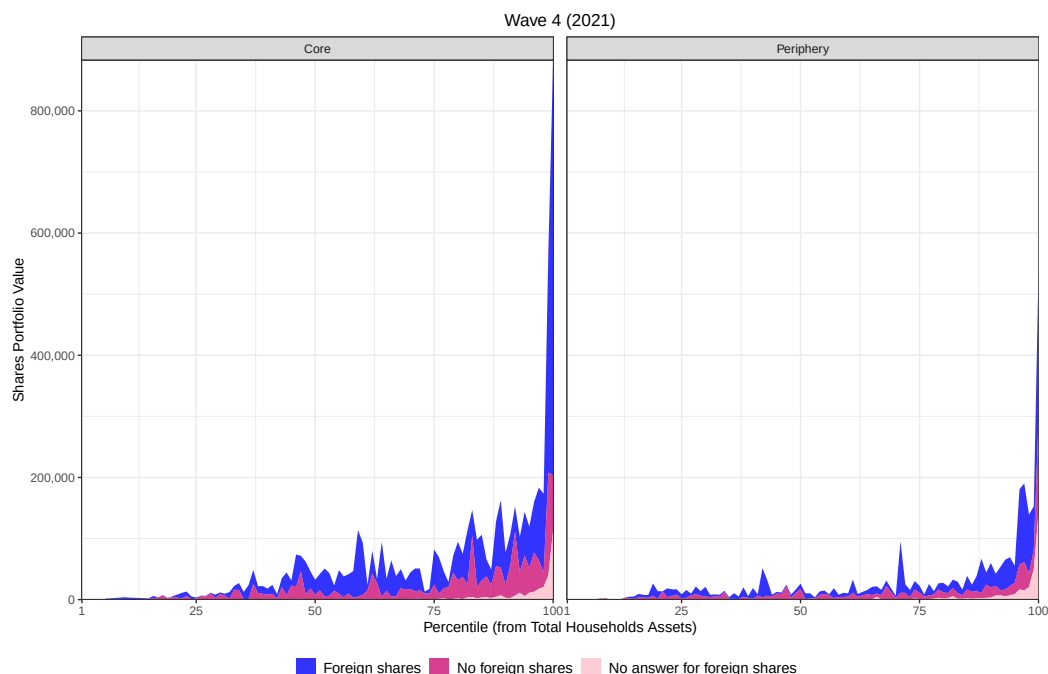


Figure 24: Share Portfolio Value by Foreign Share Ownership (2021). The figure plots the total value of share portfolios across wealth percentiles for households reporting foreign share ownership (“Yes”), no foreign shares (“No”), and no response, separately for the Core and the Periphery.

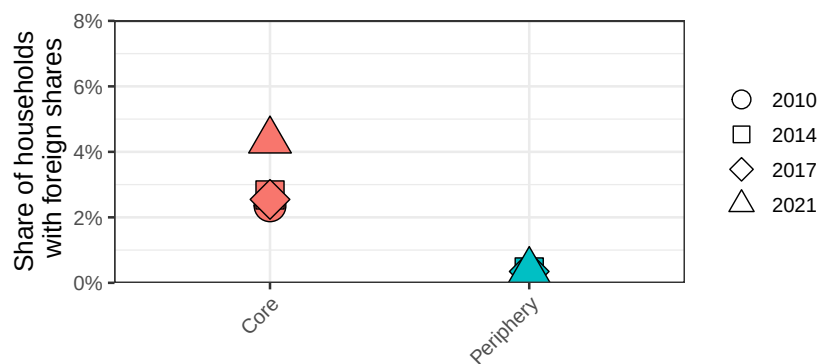


Figure 25: Share of Households with Foreign Shares by Year. The figure displays the share of households reporting ownership of foreign shares for the Core and the Periphery across HFCS waves (2010–2021).

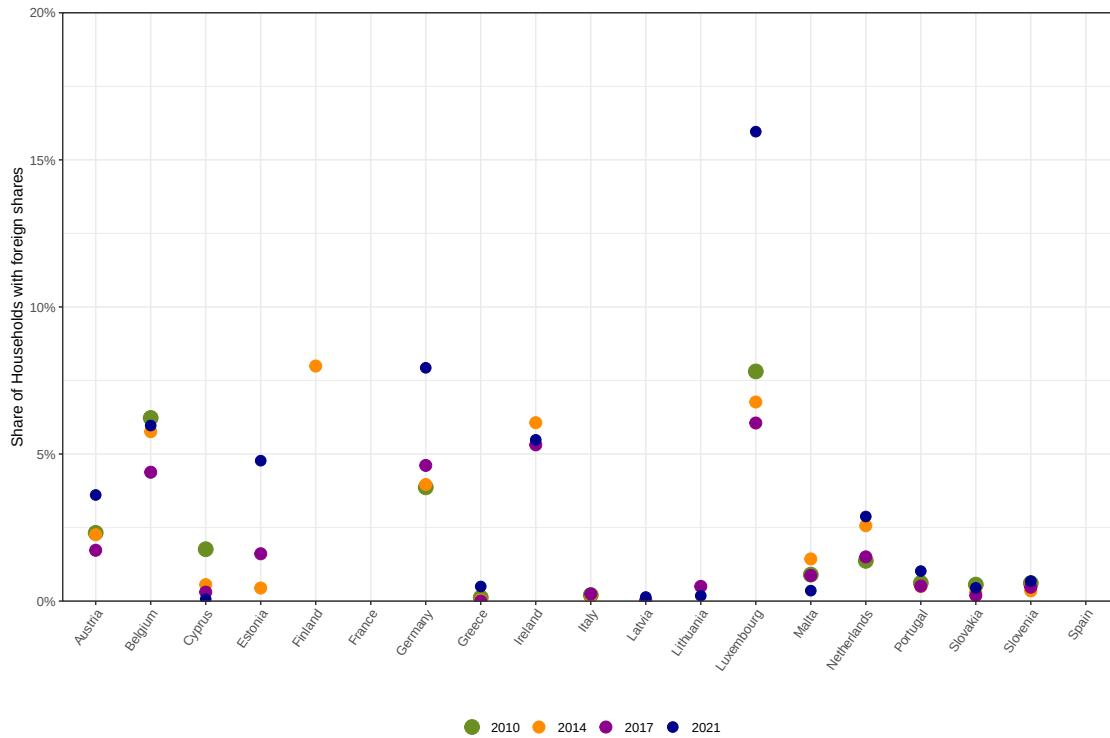


Figure 26: Share of Households with Foreign Shares by Country and Year. The figure reports the proportion of households owning foreign shares across euro area countries and survey years (2010, 2014, 2017, 2021).

3 Portfolios and Liabilities



Figure 27: Portfolio Share by Group (2010–2021). The figure reports the share of total equity portfolios held by Core and Periphery countries from 2010 to 2021, restricted to euro area assets. Each bar represents the decomposition of portfolio holdings between domestic assets (pink), assets issued by Core countries (red), and assets issued by Periphery countries (blue). The left panel corresponds to the Core and the right panel to the Periphery.

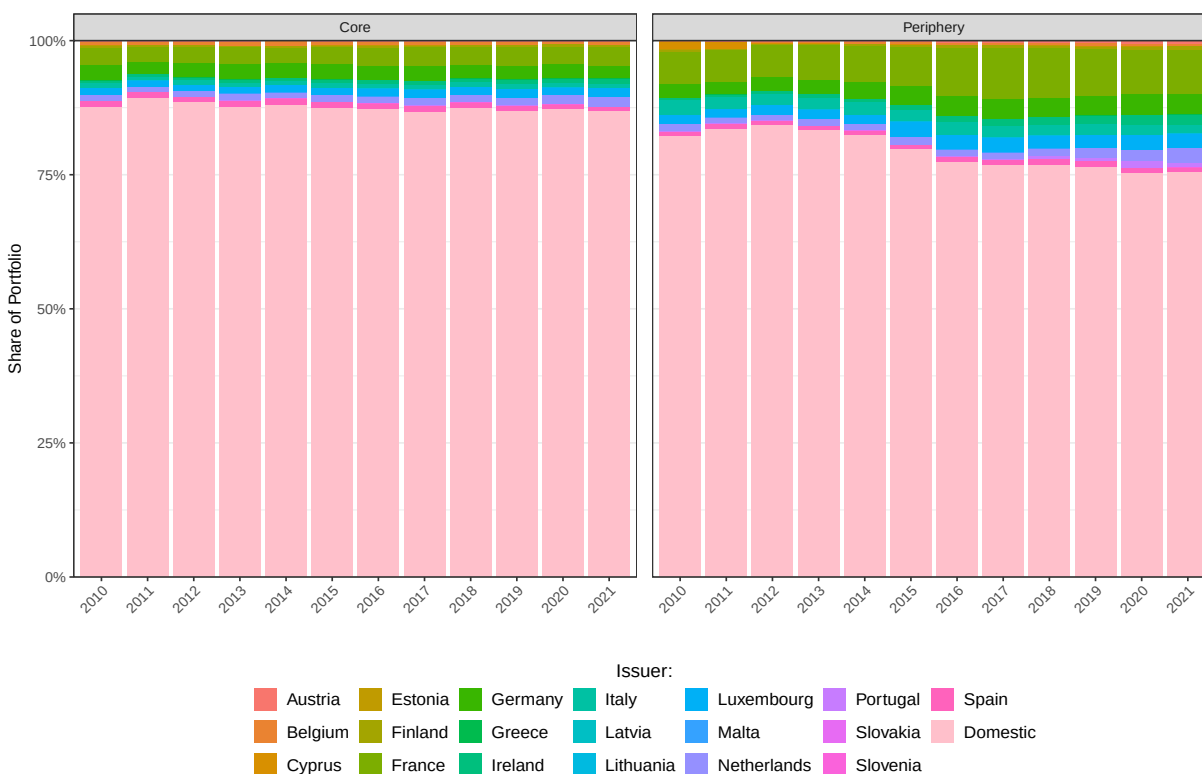


Figure 28: Portfolio Share by Group decomposed by Country (2010–2021). The figure decomposes Core and Periphery portfolios by issuer country from 2010 to 2021. Each stacked bar displays the share of total equity holdings invested in domestic assets (pink) and in assets issued by each euro area country. The left panel corresponds to the Core, and the right panel to the Periphery.

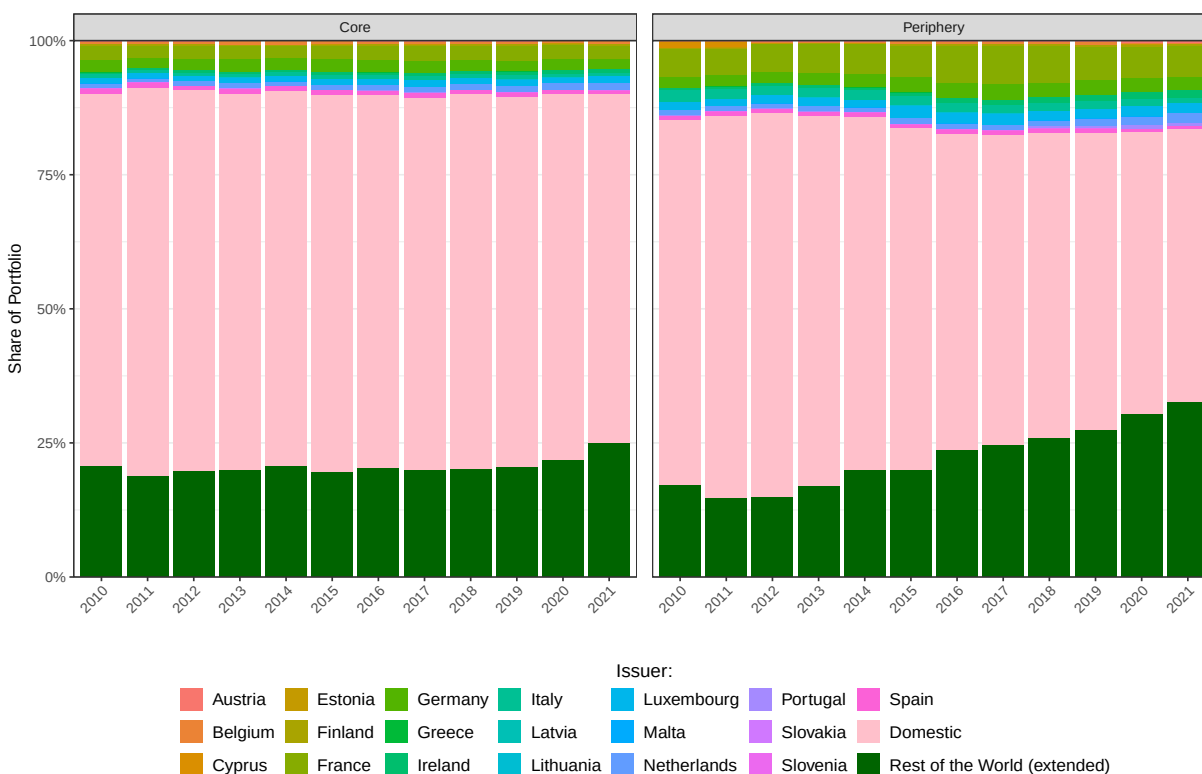


Figure 29: Portfolio Share by Group decomposed by Country, including the Rest of the World (2010–2021). The figure decomposes Core and Periphery portfolios, including exposures to the Rest of the World (RoW), from 2010 to 2021. Each stacked bar displays the share of total equity holdings invested domestically (pink), in euro area countries (colored segments), and in the Rest of the World (dark green). The left panel corresponds to the Core and the right panel to the Periphery.

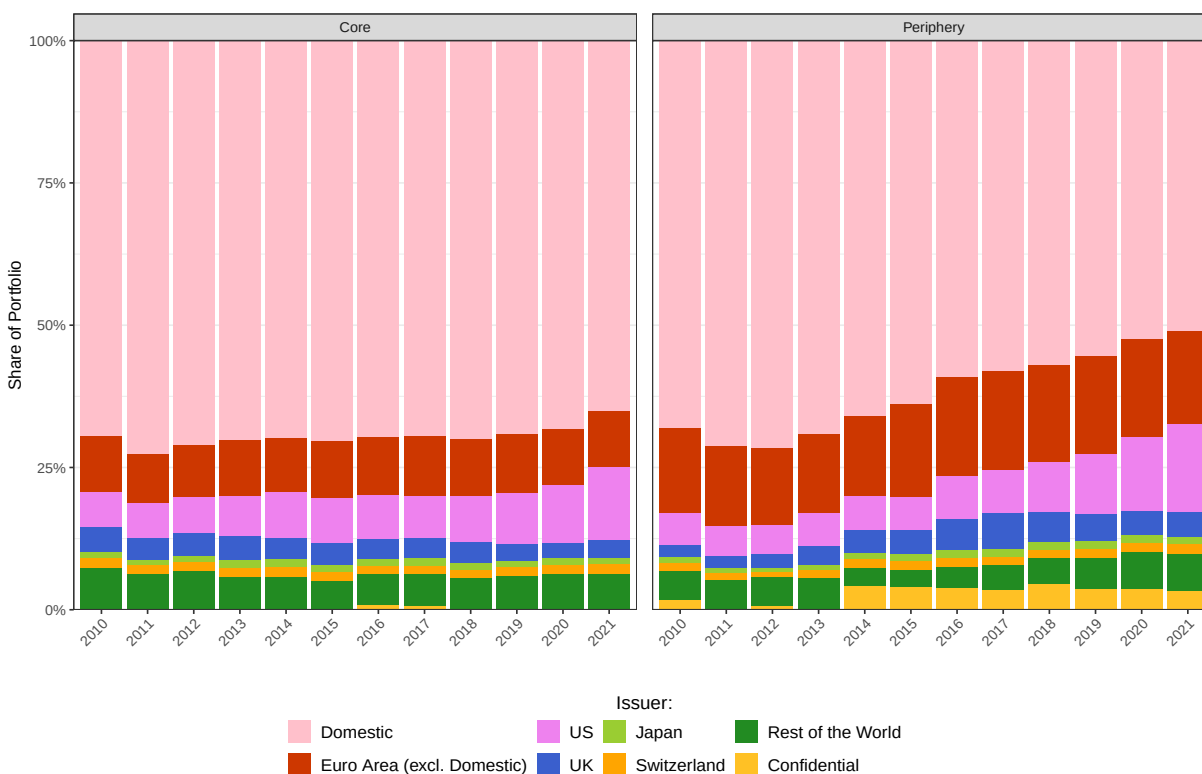


Figure 30: Portfolio Share by Group decomposed by Country, including the Rest of the World, detailed (2010–2021). The figure provides a detailed breakdown of Core and Periphery portfolios by issuer region from 2010 to 2021. Each stacked bar shows the share of total equity holdings invested in domestic assets, euro area assets (excluding domestic), and major extra-euro-area destinations: the United States, the United Kingdom, Japan, Switzerland, and the Rest of the World. The left panel corresponds to the Core and the right panel to the Periphery.

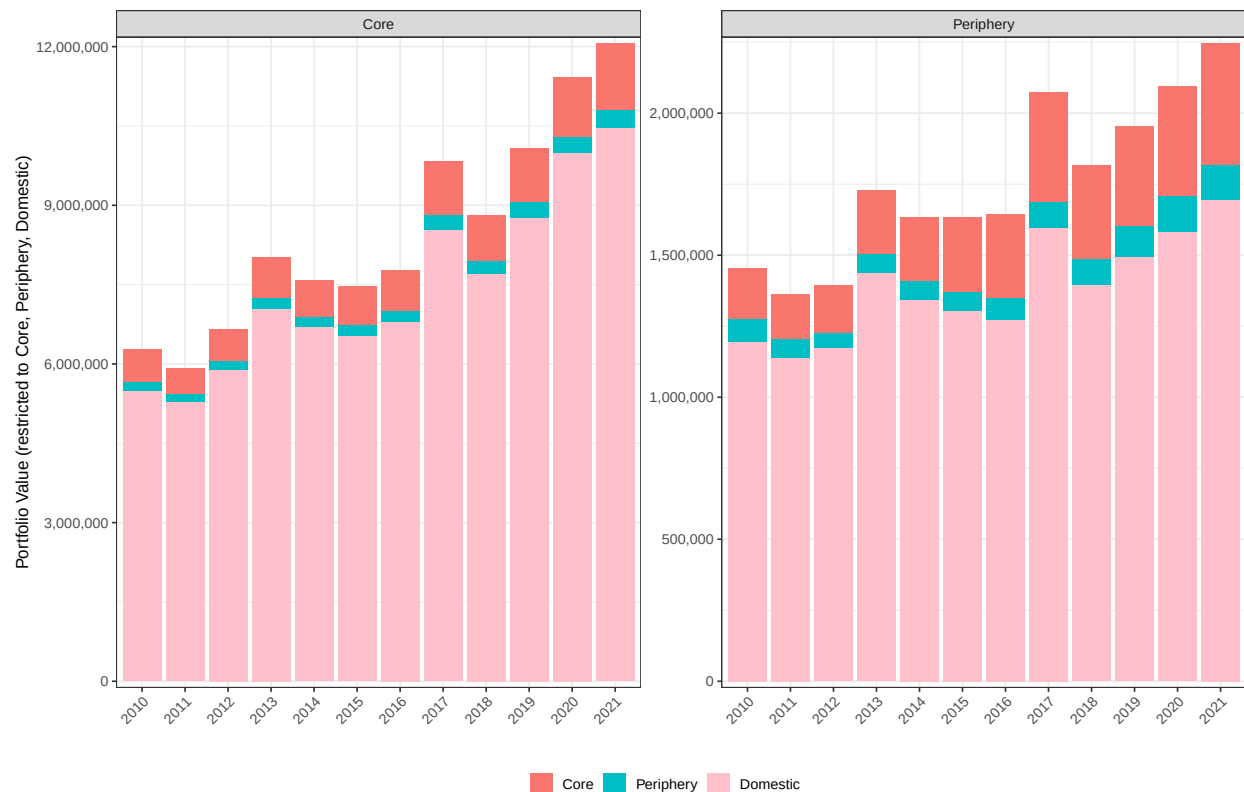


Figure 31: Portfolio Share by Group, in Values (2010–2021). The figure reports the total equity portfolios held by Core and Periphery countries from 2010 to 2021, restricted to euro area assets and expressed in values. Each stacked bar shows the decomposition of portfolio holdings between domestic assets (pink), assets issued by Core countries (red), and assets issued by Periphery countries (blue). The left panel corresponds to the Core and the right panel to the Periphery.

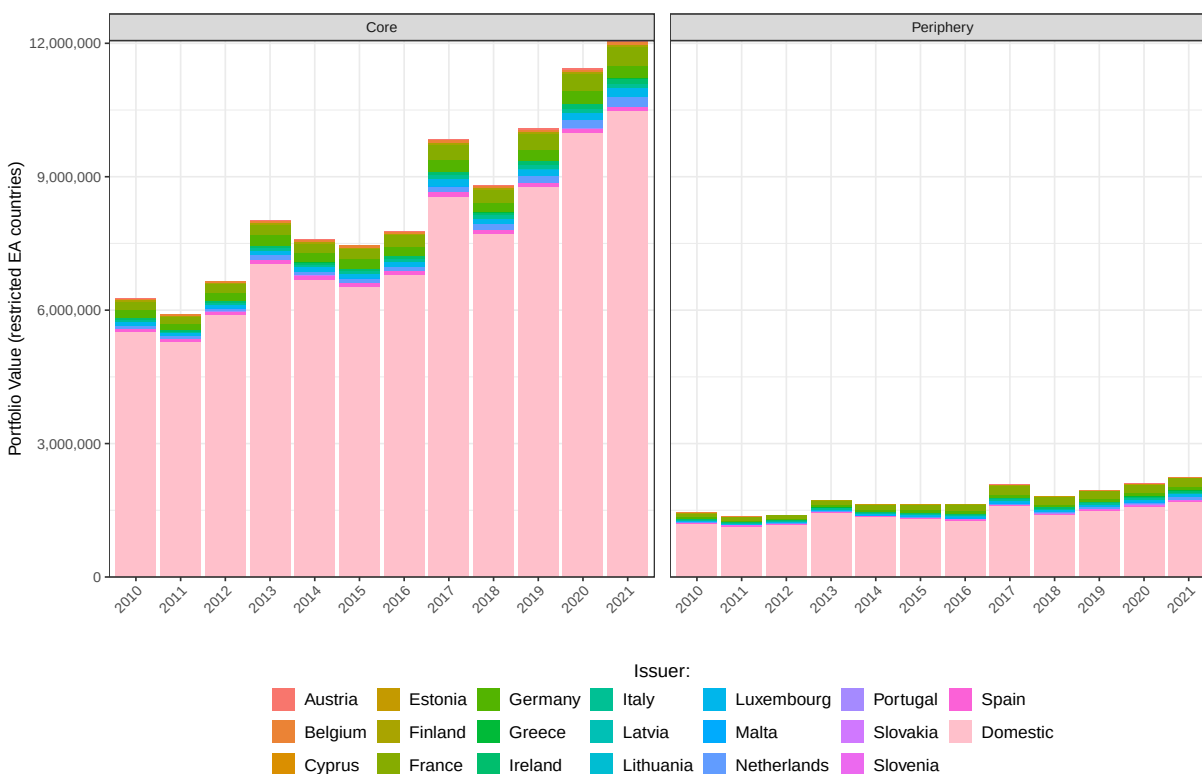


Figure 32: Portfolio Share by Group decomposed by Country, in Values (2010–2021). The figure decomposes Core and Periphery portfolios by issuer country from 2010 to 2021. Each stacked bar displays the values of total equity holdings invested in domestic assets (pink) and in assets issued by each euro area country.

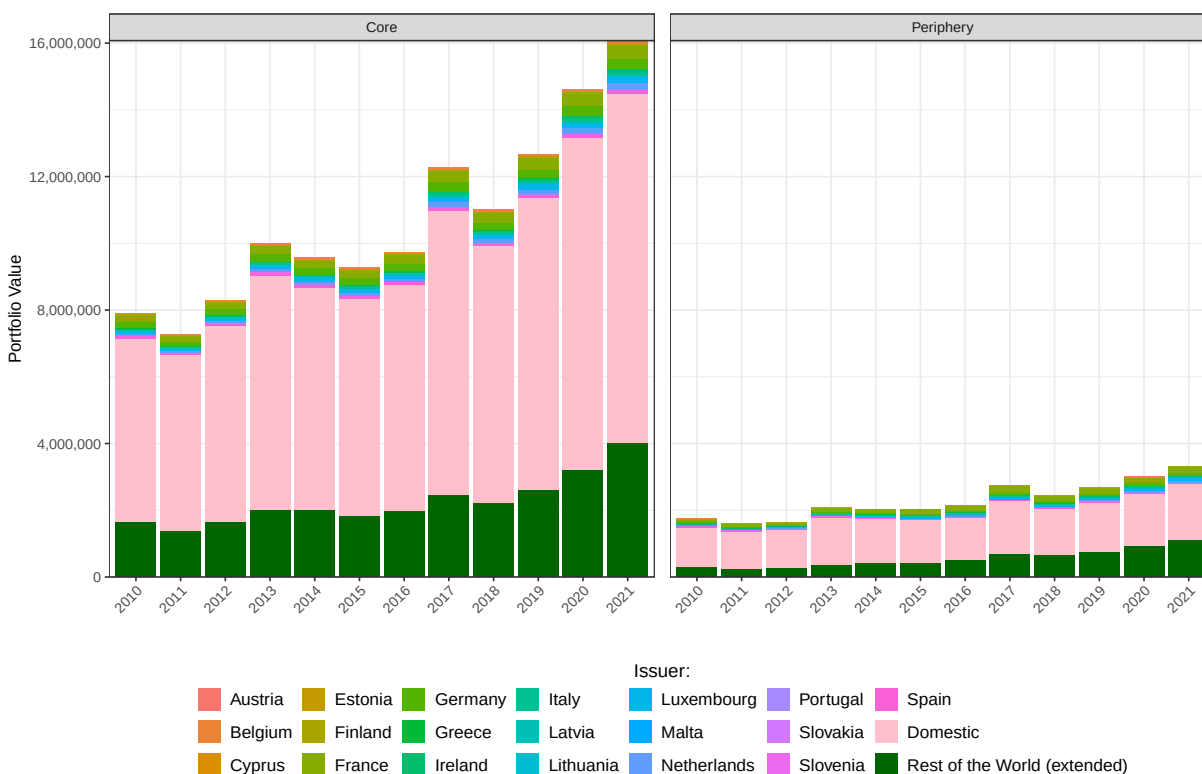


Figure 33: Portfolio Share by Group decomposed by Country, including the Rest of the World, in Values (2010-2021). The figure decomposes Core and Periphery portfolios, including exposures to the Rest of the World (RoW), from 2010 to 2021. Each stacked bar displays the values of total equity holdings invested domestically (pink), in euro area countries (colored segments), and in the Rest of the World (dark green). The left panel corresponds to the Core and the right panel to the Periphery.

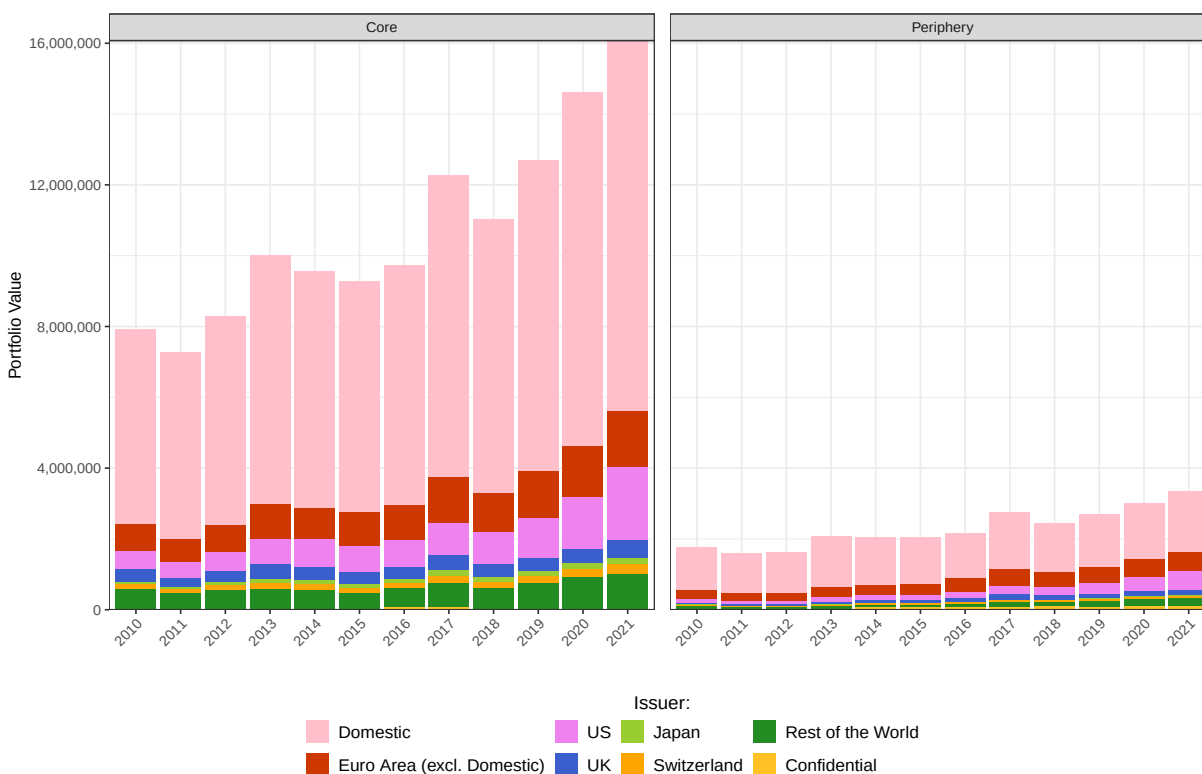


Figure 34: Portfolio Share by Group decomposed by Country, including the Rest of the World, detailed, in Values (2010-2021). The figure provides a detailed breakdown of Core and Periphery portfolios by issuer region from 2010 to 2021. Each stacked bar shows the values of total equity holdings invested in domestic assets, euro area assets (excluding domestic), and major extra-euro-area destinations: the United States, the United Kingdom, Japan, Switzerland, and the Rest of the World. The left panel corresponds to the Core and the right panel to the Periphery.

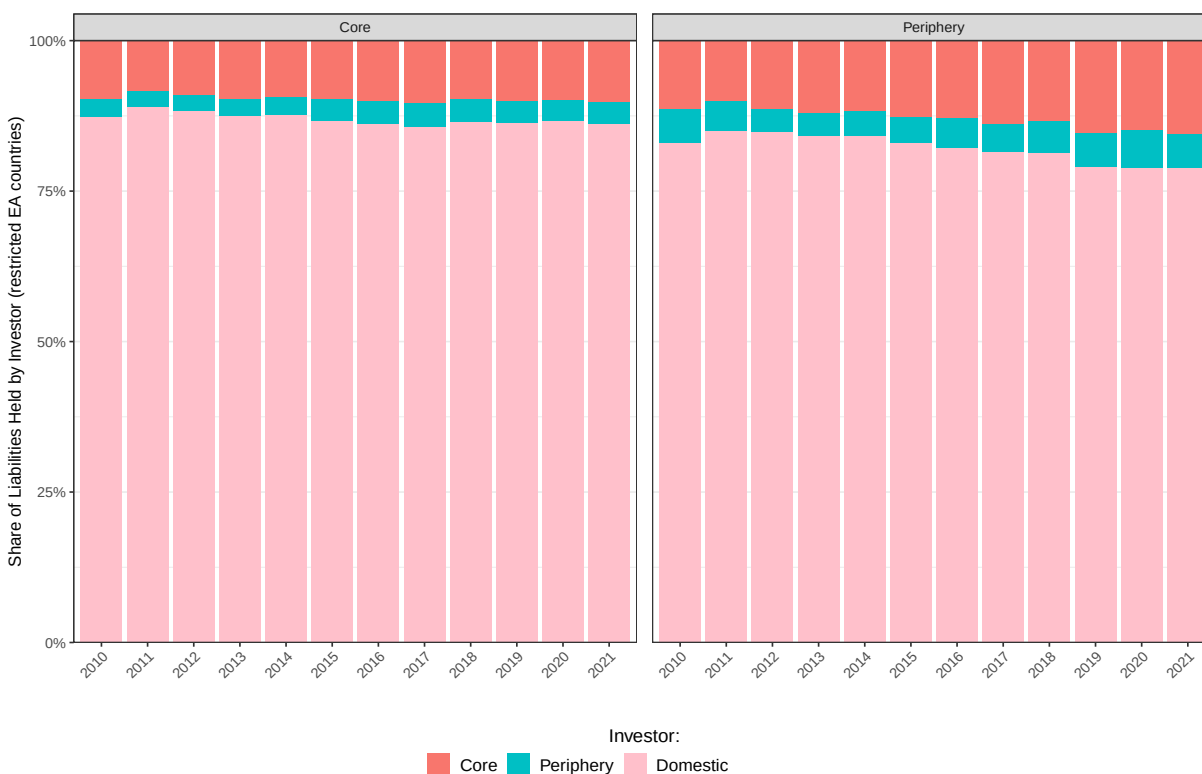


Figure 35: Liabilities Share by Group (2010-2021). The figure reports the share of total equity liabilities issued by Core and Periphery countries from 2010 to 2021, restricted to euro area assets. Each stacked bar decomposes total liabilities between domestic investors (pink), investors from Core countries (red), and investors from Periphery countries (blue). The left panel corresponds to the Core and the right panel to the Periphery.

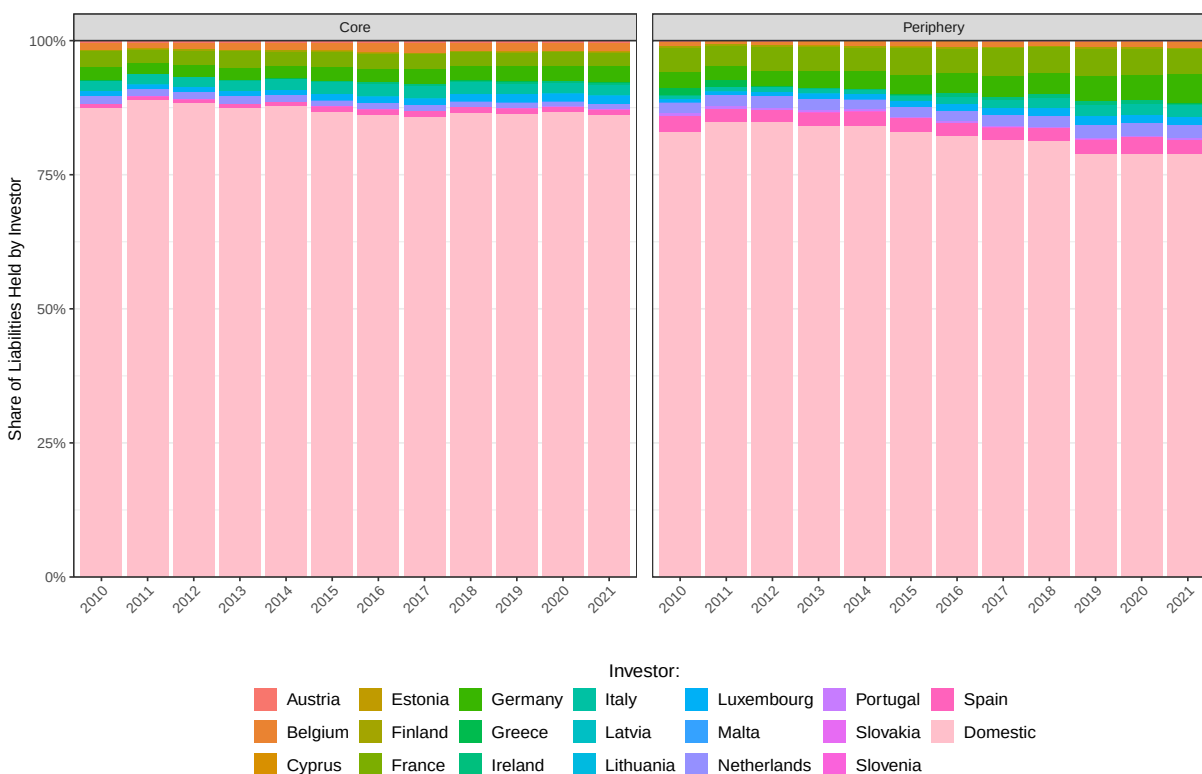


Figure 36: Liabilities Share by Group, decomposed by Country (2010-2021). The figure decomposes Core and Periphery equity liabilities by the country of the investor from 2010 to 2021, restricted to euro area investors. Each bar displays the share of total liabilities held domestically (pink) and by each euro area country. The left panel corresponds to the Core and the right panel to the Periphery.

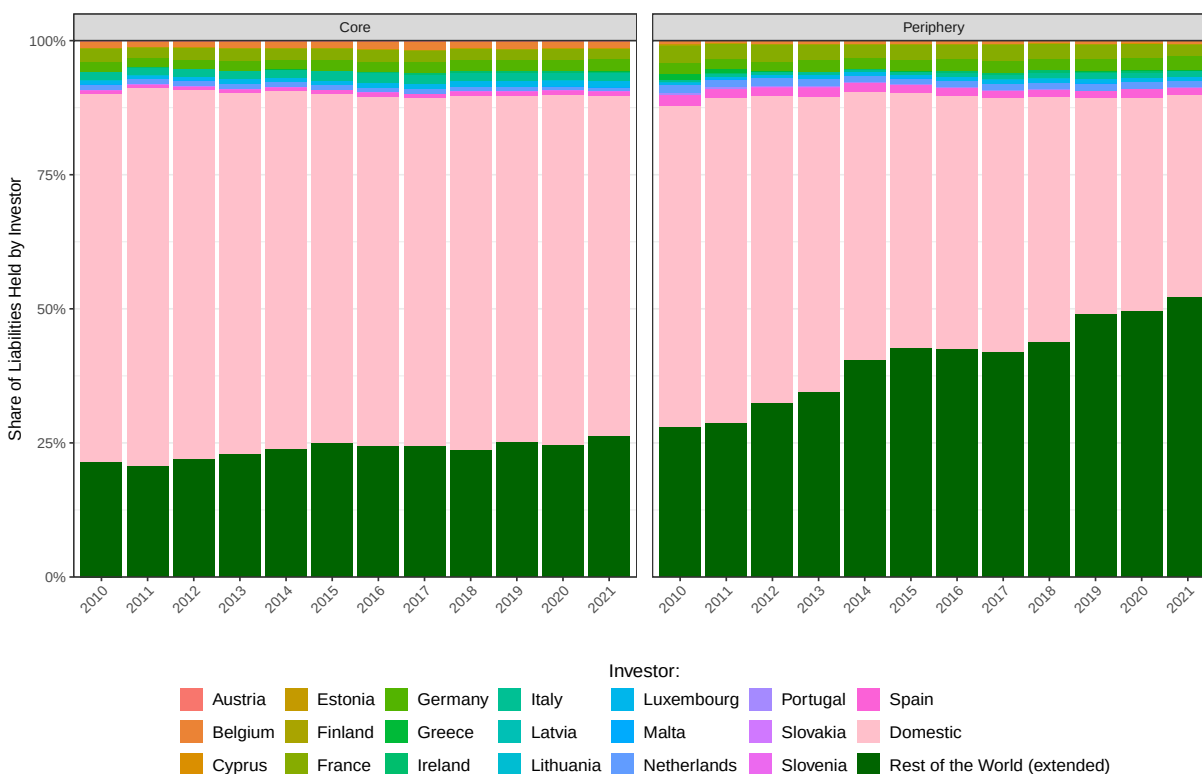


Figure 37: Liabilities Share by Group, including the Rest of the World (2010-2021). The figure decomposes Core and Periphery equity liabilities between domestic investors (pink), euro area investors (colored bars), and the Rest of the World (dark green). The left panel corresponds to the Core and the right panel to the Periphery.

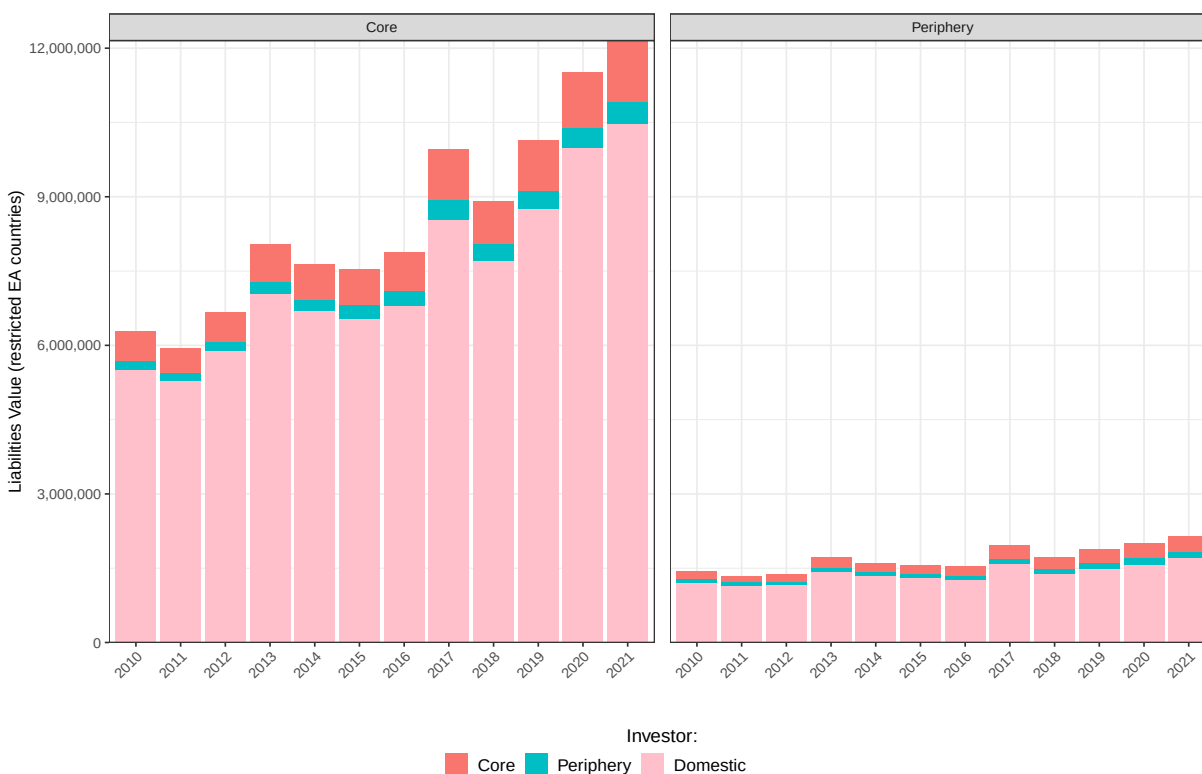


Figure 38: Liabilities by Group, in Values (2010-2021). The figure reports the total equity liabilities issued by Core and Periphery countries from 2010 to 2021, restricted to euro area investors and expressed in values. Each stacked bar decomposes total liabilities between domestic investors (pink), investors from Core countries (red), and investors from Periphery countries (blue). The left panel corresponds to the Core and the right panel to the Periphery.

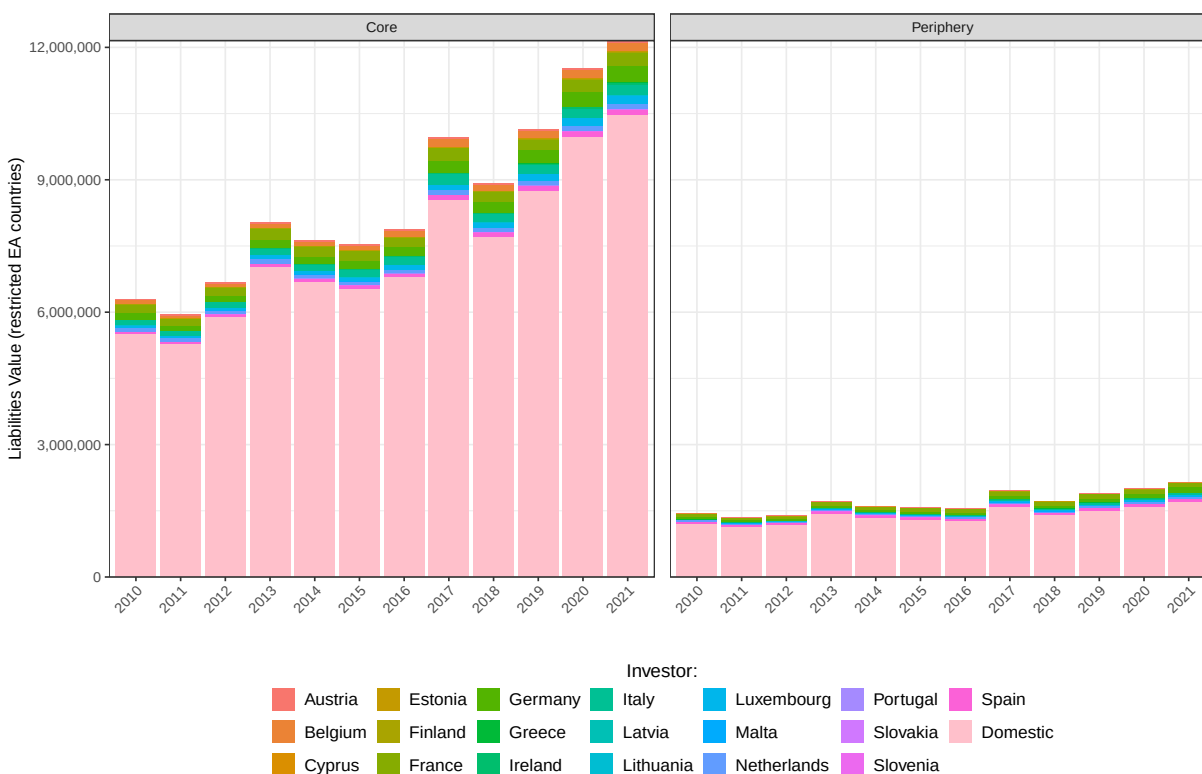


Figure 39: Liabilities by Group, decomposed by Country, in Values (2010-2021). The figure decomposes Core and Periphery equity liabilities by the country of the investor from 2010 to 2021, restricted to euro area investors. Each bar displays the values of total liabilities held domestically (pink) and by each euro area country. The left panel corresponds to the Core and the right panel to the Periphery.

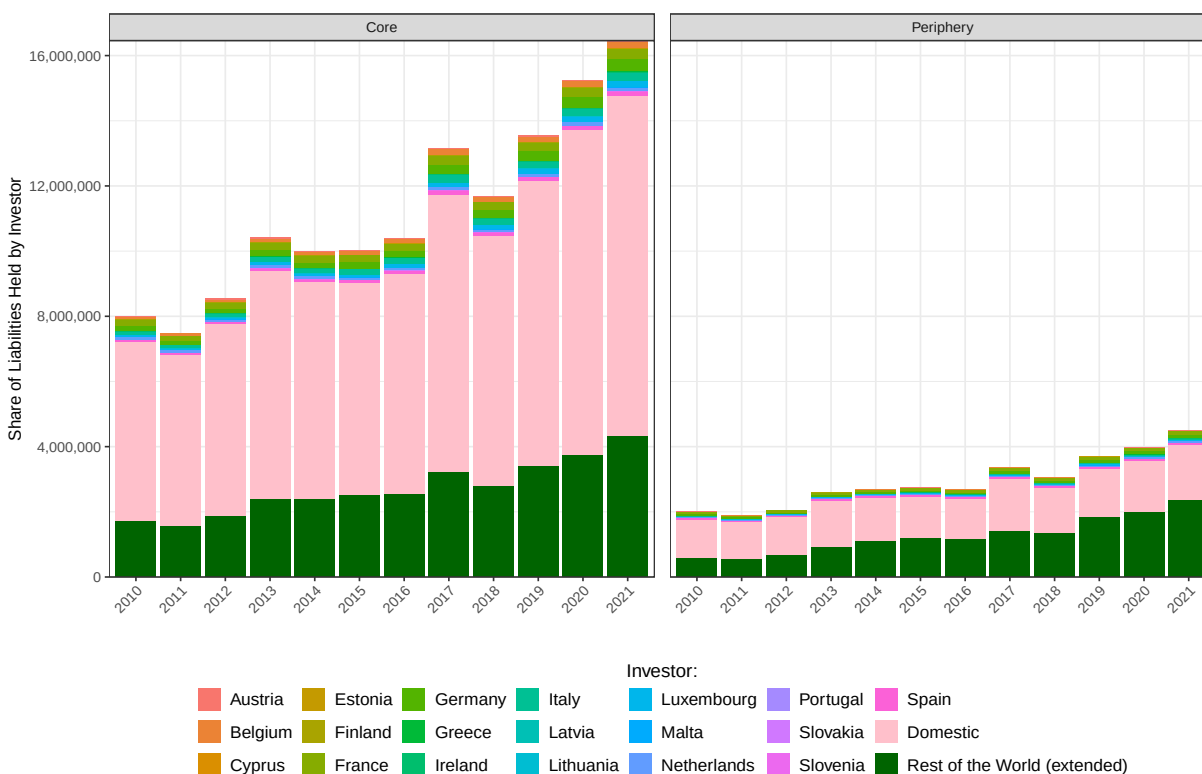


Figure 40: Liabilities Share by Group, including the Rest of the World, in Values (2010-2021). The figure decomposes Core and Periphery equity liabilities between domestic investors (pink), euro area investors (colored bars), and the Rest of the World (dark green). The left panel corresponds to the Core and the right panel to the Periphery.

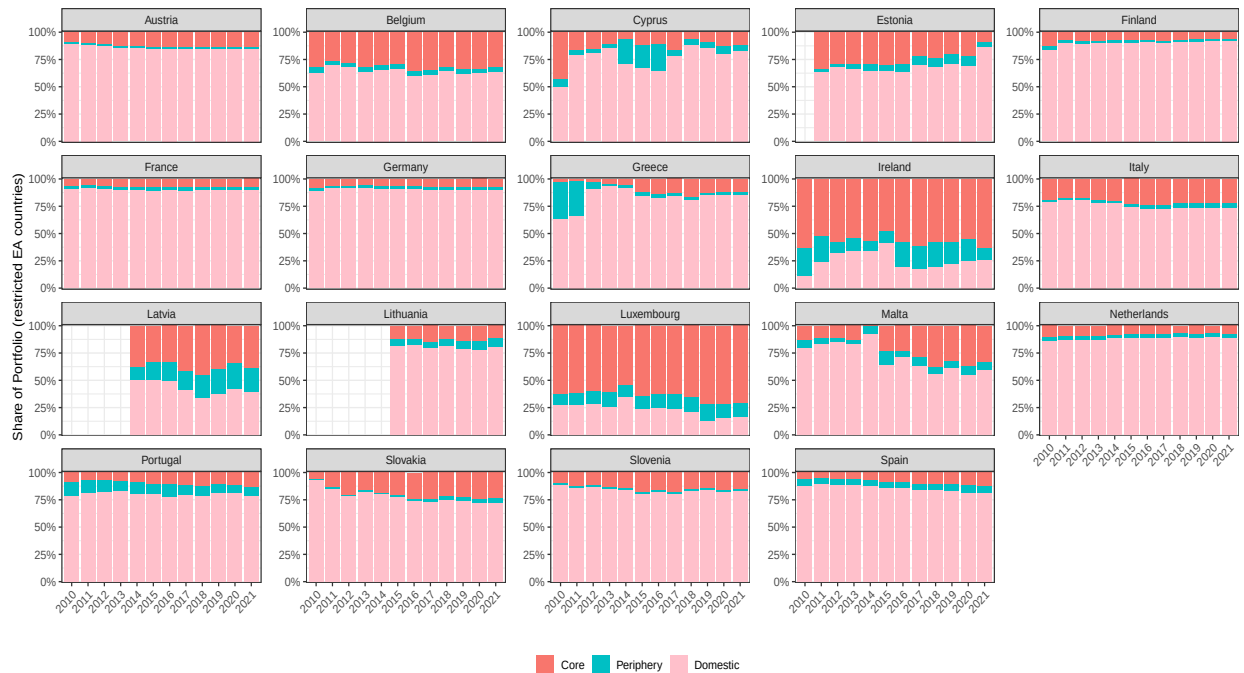


Figure 41: Portfolio Share by Country (2010-2021). The figure reports the share of total equity portfolios held by each euro area country from 2010 to 2021, restricted to euro area assets. Each bar represents the decomposition of portfolio holdings between domestic assets (pink), assets issued by Core countries (red), and assets issued by Periphery countries (blue).



Figure 42: Portfolio Share by Country, decomposed by Issuer (2010-2021). The figure decomposes the portfolio holdings of each euro area country by issuer country from 2010 to 2021. Each stacked bar shows the share of total equity portfolios invested domestically (pink) and in other euro area countries (colored bars).



Figure 43: Portfolio Share by Country, decomposed by Issuer, including the Rest of the World (2010-2021). The figure reports portfolio allocations across domestic, euro area, and Rest of the World assets for each euro area country from 2010 to 2021. Each bar decomposes total equity holdings between domestic (pink), euro area (colored), and Rest of the World (dark green) exposures.



Figure 44: Portfolio Share by Country, including the Rest of the World, detailed (2010-2021). The figure reports portfolio allocations from 2010 to 2021 across domestic assets, euro area assets (excluding domestic), and major extra-euro-area destinations: the United States, the United Kingdom, Japan, Switzerland, and the Rest of the World. Each bar decomposes total equity holdings between domestic (pink), euro area (colored), and Rest of the World (dark green) exposures.

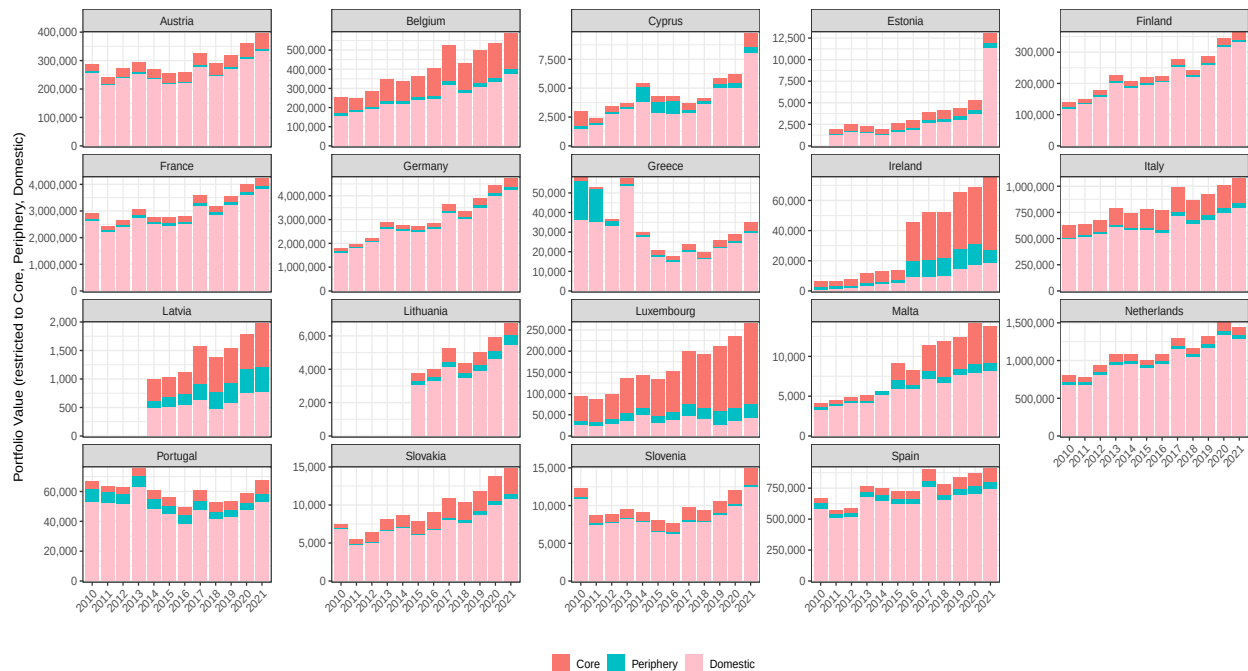


Figure 45: Portfolio Value by Country (2010-2021). The figure reports the total value of equity portfolios held by each euro area country from 2010 to 2021, restricted to euro area assets and expressed in billions of euros. Each bar represents the decomposition of portfolio holdings between domestic assets (pink), assets issued by Core countries (red), and assets issued by Periphery countries (blue).



Figure 46: Portfolio Value by Country, decomposed by Issuer (2010-2021). The figure decomposes the total equity portfolios of each euro area country by issuer country from 2010 to 2021, restricted to euro area assets and expressed in values. Each stacked bar shows the total value of equity holdings invested domestically (pink) and in other euro area countries (colored bars).



Figure 47: Portfolio Value by Country, decomposed by Issuer, including the Rest of the World (2010-2021). The figure reports the total equity portfolio values across domestic, euro area, and Rest of the World assets for each euro area country from 2010 to 2021. Each bar decomposes total equity holdings between domestic (pink), euro area (colored), and Rest of the World (dark green) exposures.

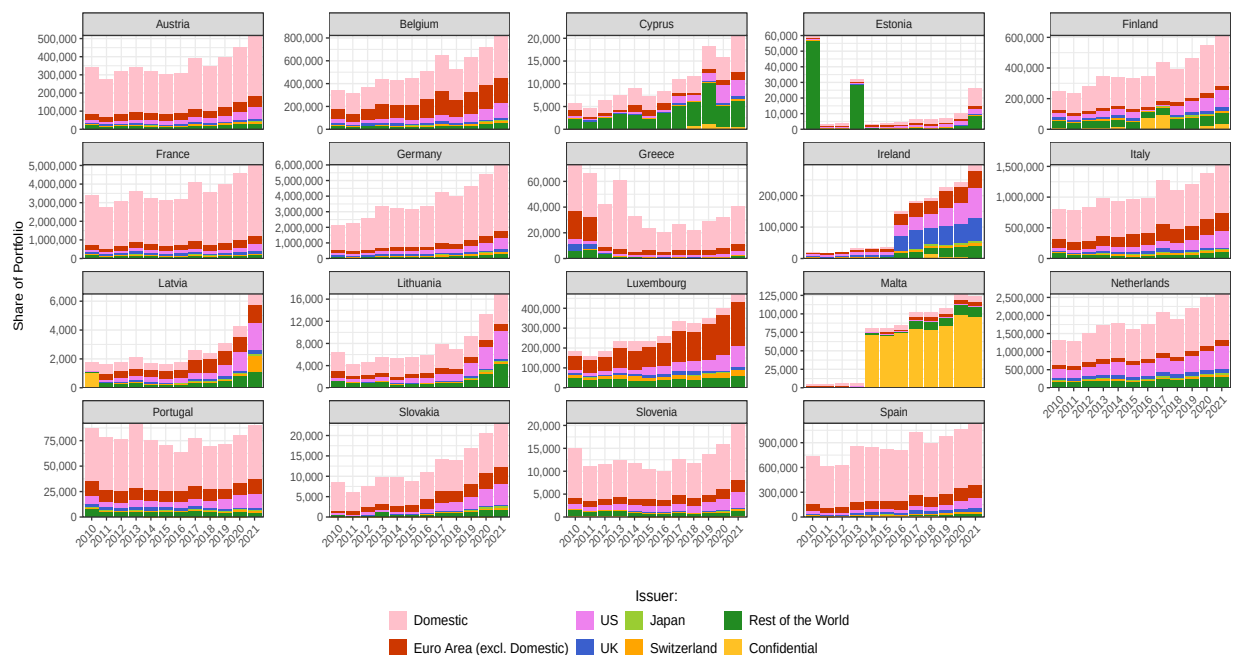


Figure 48: Portfolio Value by Country, including the Rest of the World, detailed (2010-2021). The figure reports the total equity portfolio values across domestic assets, euro area assets (excluding domestic), and major extra-euro-area destinations — the United States, the United Kingdom, Japan, Switzerland, and the Rest of the World. Each bar decomposes total equity holdings between domestic (pink), euro area (colored), and Rest of the World (dark green) exposures.



Figure 49: Liabilities Share by Country (2010-2021). The figure reports the share of total equity liabilities issued by each euro area country from 2010 to 2021, restricted to euro area investors. Each bar represents the decomposition of liabilities between domestic investors (pink), investors from Core countries (red), and investors from Periphery countries (blue).



Figure 50: Liabilities Share by Country, decomposed by Investor (2010-2021). The figure decomposes the total equity liabilities of each euro area country by investor country from 2010 to 2021. Each stacked bar shows the share of total liabilities held domestically (pink) and by other euro area investors (colored bars).



Figure 51: Liabilities Share by Country, decomposed by Investor, including the Rest of the World (2010-021). The figure reports the decomposition of each euro area country's total equity liabilities between domestic investors (pink), euro area investors (colored bars), and the Rest of the World (dark green).

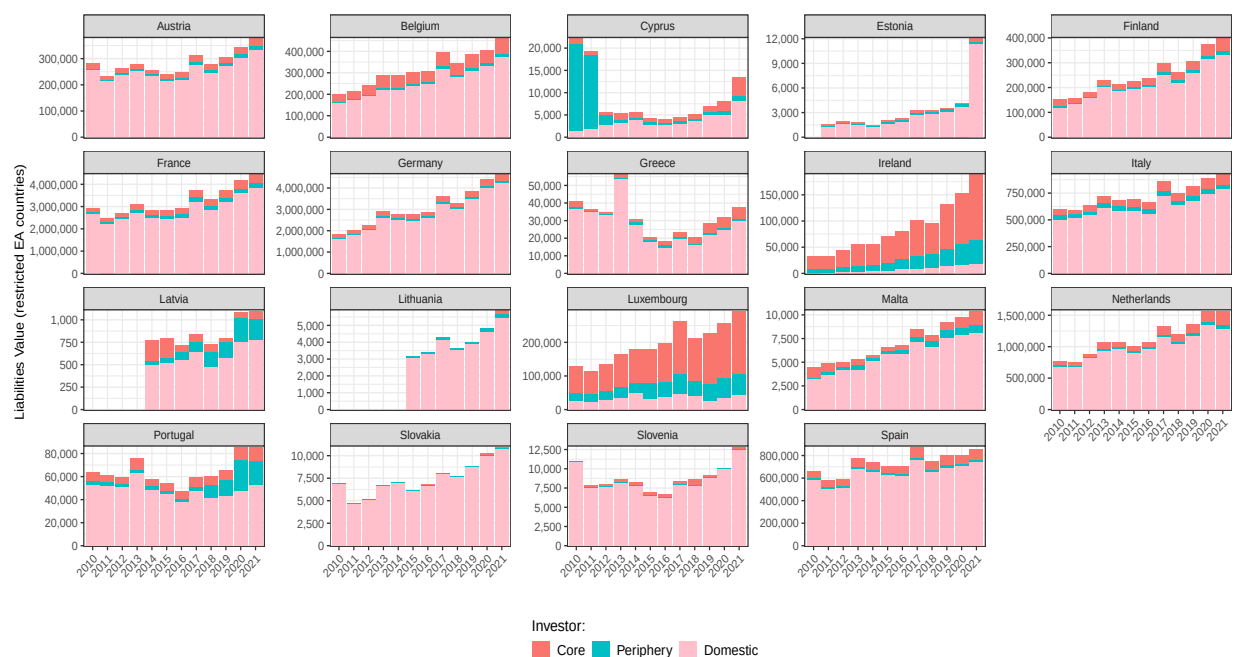


Figure 52: Liabilities by Country, in Values (2010-2021). The figure reports the total value of equity liabilities issued by each euro area country from 2010 to 2021, restricted to euro area investors and expressed in billions of euros. Each bar represents the decomposition of liabilities between domestic investors (pink), investors from Core countries (red), and investors from Periphery countries (blue).



Figure 53: Liabilities by Country, decomposed by Investor, in Values (2010-2021). The figure decomposes the total equity liabilities of each euro area country by investor country from 2010 to 2021, restricted to euro area investors and expressed in values. Each stacked bar shows the total value of liabilities held domestically (pink) and by other euro area investors (colored bars).



Figure 54: Liabilities by Country, decomposed by Investor, including the Rest of the World, in Values (2010-2021). The figure reports the total value of equity liabilities for each euro area country, decomposed between domestic (pink), euro area (colored), and Rest of the World (dark green) investors.

4 Sharpe Ratios

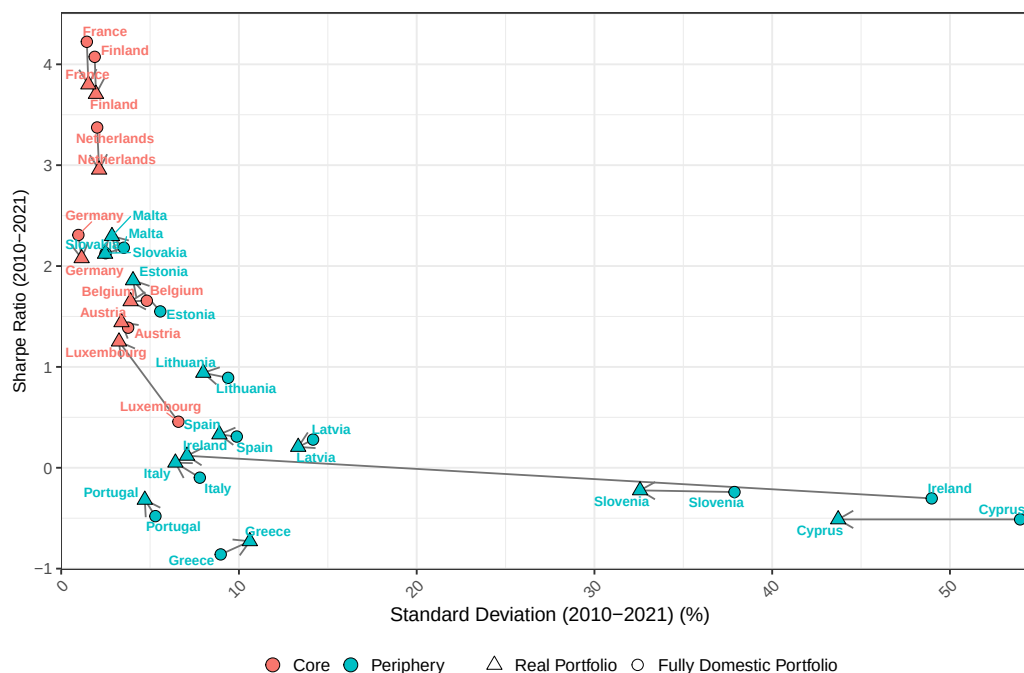


Figure 55: Sharpe Ratio and Standard Deviation of Portfolios (2010-2021). The figure plots the average Sharpe ratio against the standard deviation of equity portfolios for euro area countries over the period 2010-2021. The Sharpe ratio is computed using the 1-month Euribor as the risk-free rate, and equity returns are sourced from the European System of Central Banks (ESCB). Two portfolios are shown: the *real portfolio* (triangles), based on countries' actual cross-border equity holdings as reported in the CPIS (including domestic and corrected offshore positions), and the *fully domestic portfolio* (circles), which assumes that countries only hold their own domestic equity. Red markers correspond to Core countries and blue markers to Periphery countries.

5 Consumption correlation puzzle

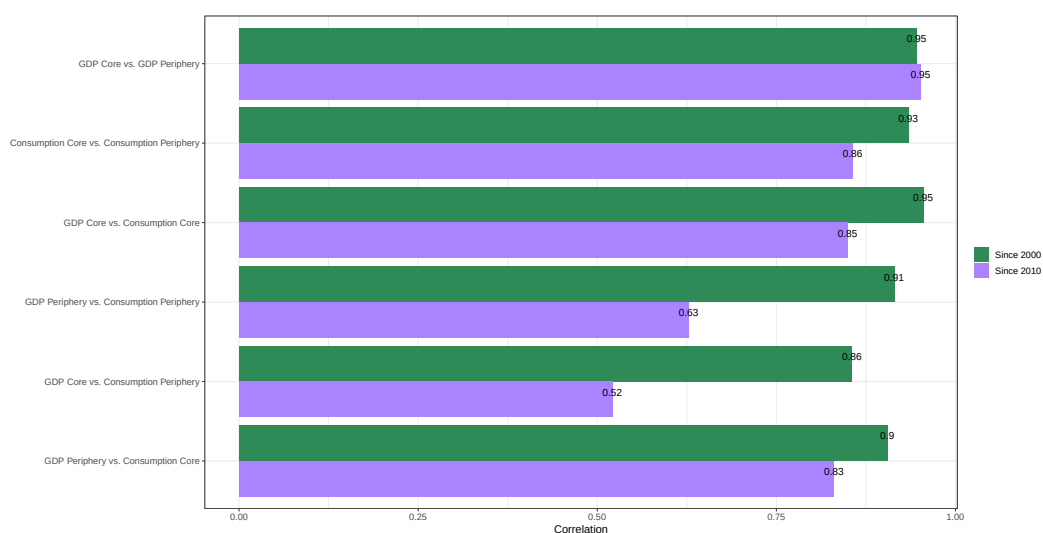


Figure 56: Within- and Cross-Group GDP/Consumption Correlations. The figure reports average within-group and cross-group correlations of GDP and consumption growth between Core and Periphery countries.

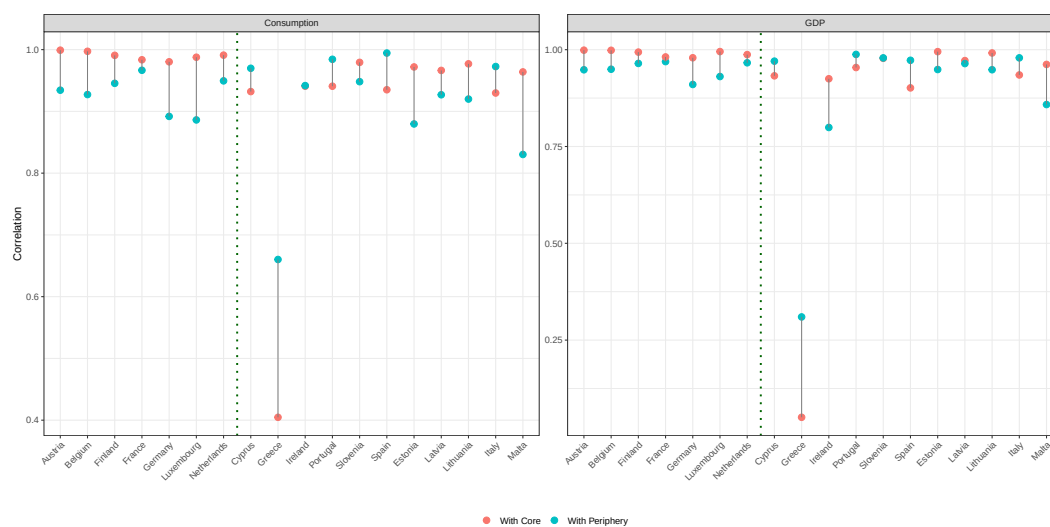


Figure 57: Within- and Cross-Group GDP/Consumption Correlations by Country. The figure decomposes GDP and consumption growth correlations by country pairings, distinguishing Core–Core, Periphery–Periphery, and cross-group relationships.

6 Financial Analysis: Correlations

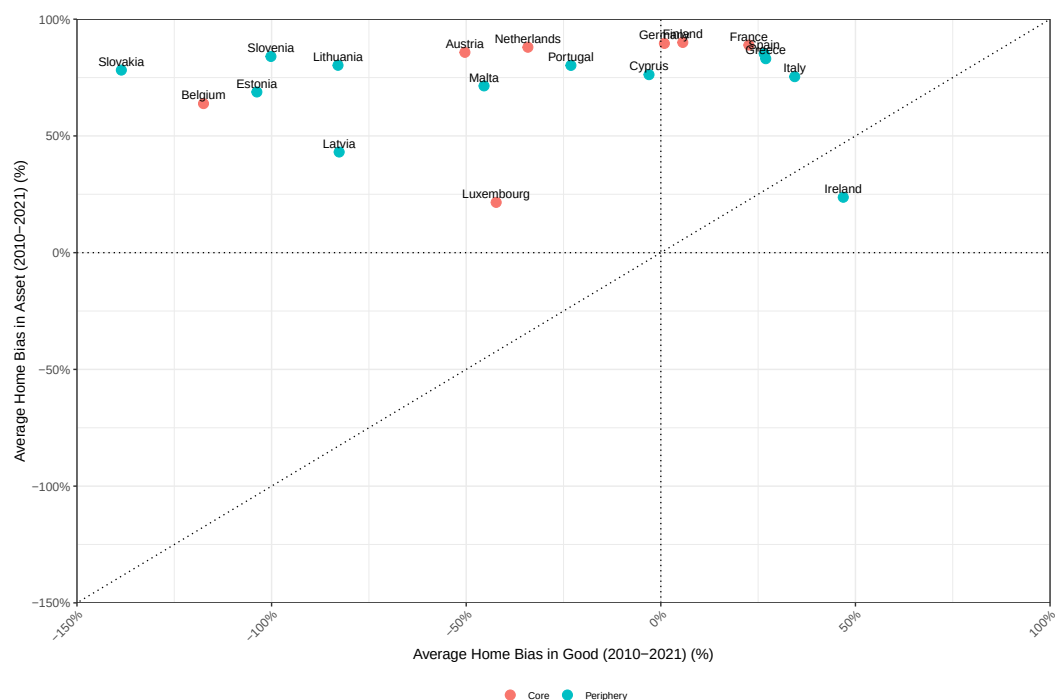


Figure 58: Home Bias in Assets vs. Home Bias in Goods. The figure compares the home bias in equity holdings with the home bias in goods, measured as the home bias in domestic assets and home bias in imports, respectively, over 2010-2021. Each point corresponds to a euro area country, illustrating the relationship between financial and trade integration within the monetary union.

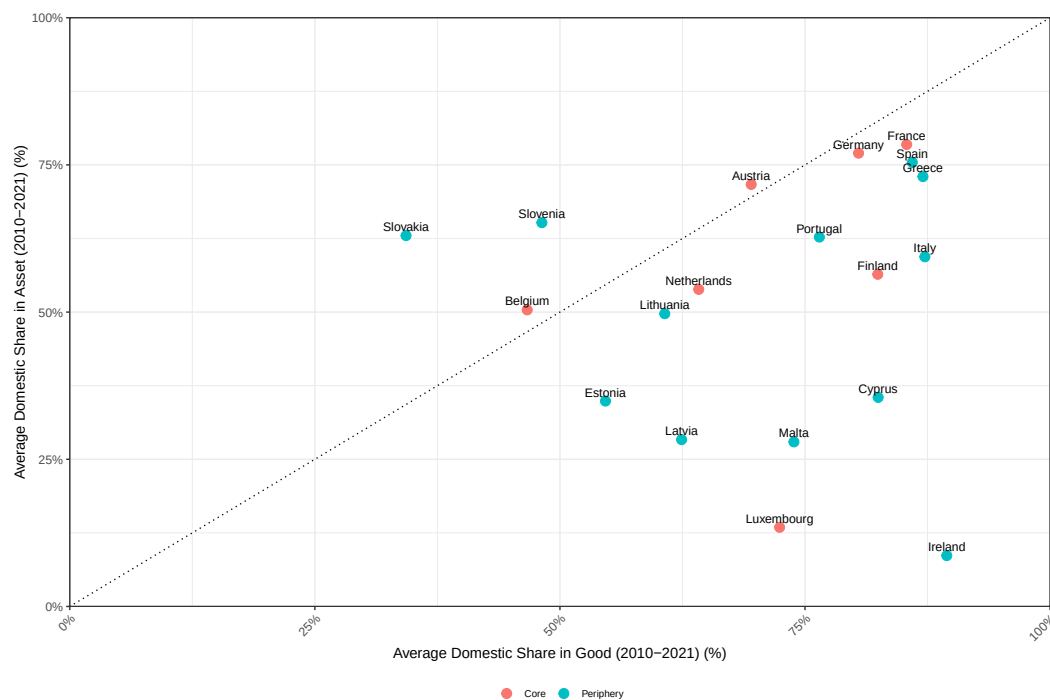


Figure 59: Average Domestic Share in Assets vs. in Goods. The figure plots the average domestic share of equity holdings against the domestic share of imports for euro area countries over 2010–2021.

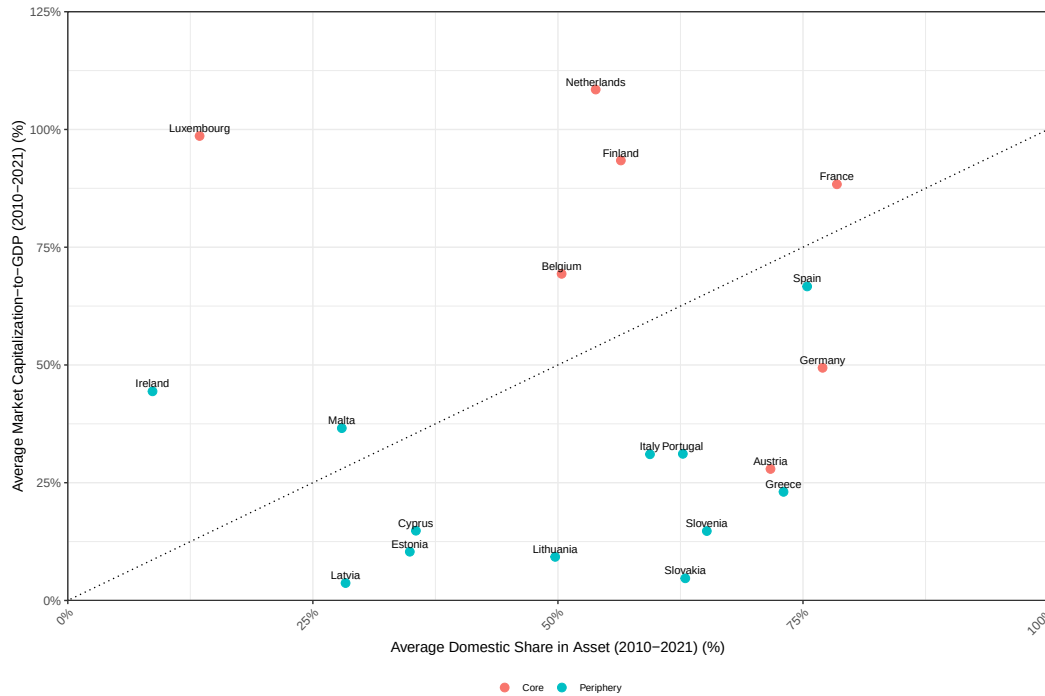


Figure 60: Market Capitalization vs. Average Domestic Share in Assets. The figure plots countries' average market capitalization (as a share of GDP) against their average equity home bias from 2010–2021.

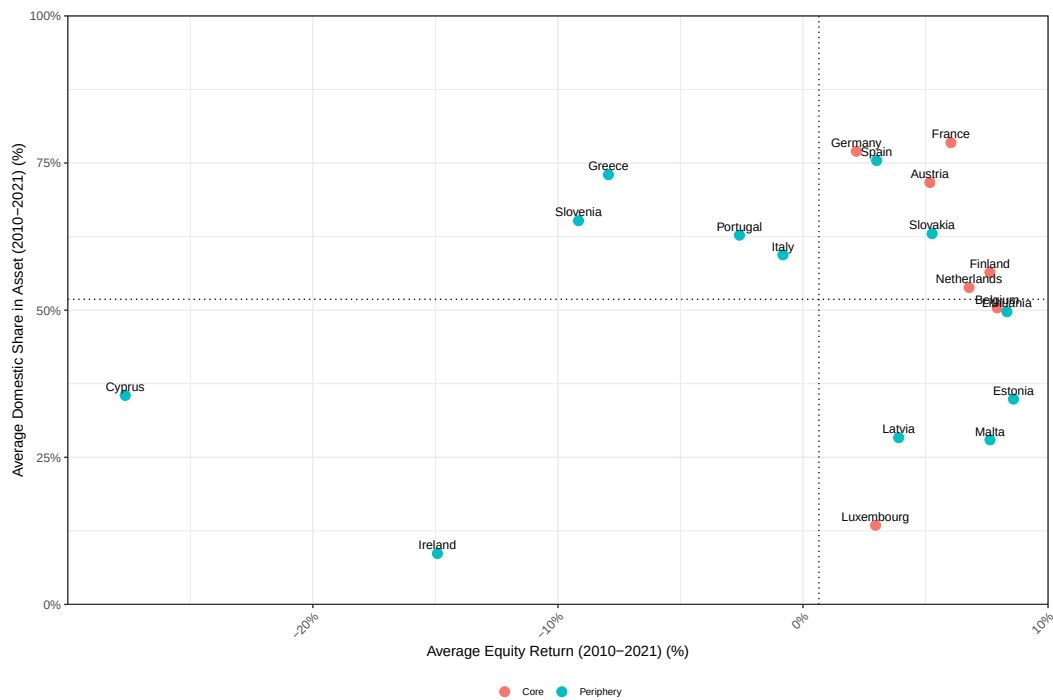


Figure 61: Domestic Share in Assets vs. Average Equity Return. The figure compares average equity returns (2010–2021) with the level of home bias in equity holdings for euro area countries.

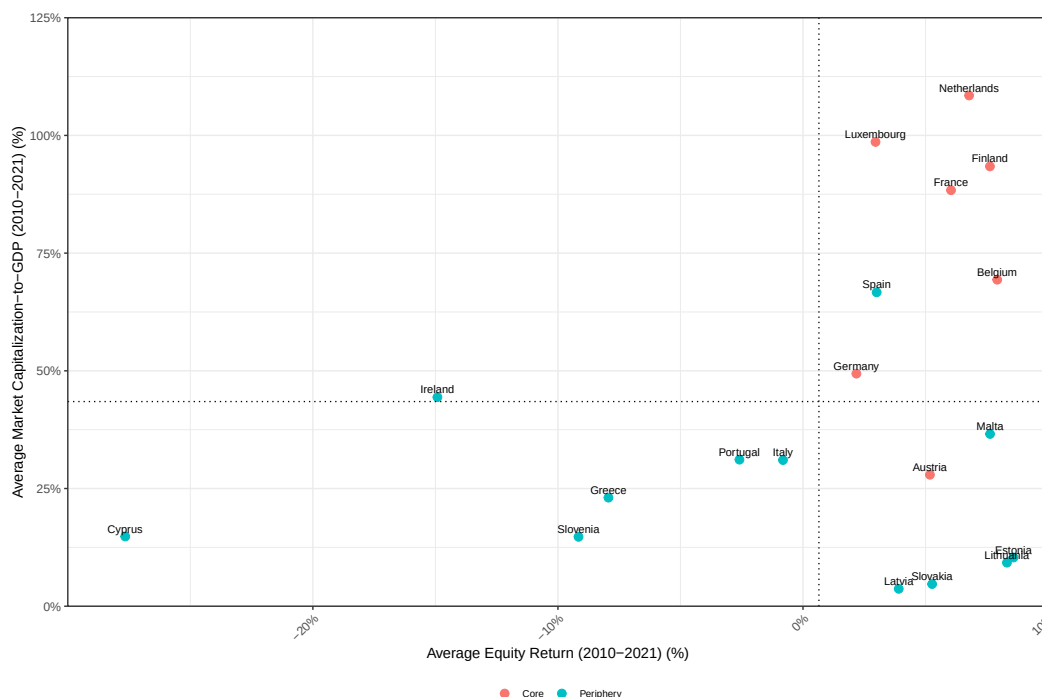


Figure 62: Market Capitalization vs. Average Equity Return. The figure plots the relationship between market capitalization (in % of GDP) and average equity returns (2010–2021) across euro area countries.

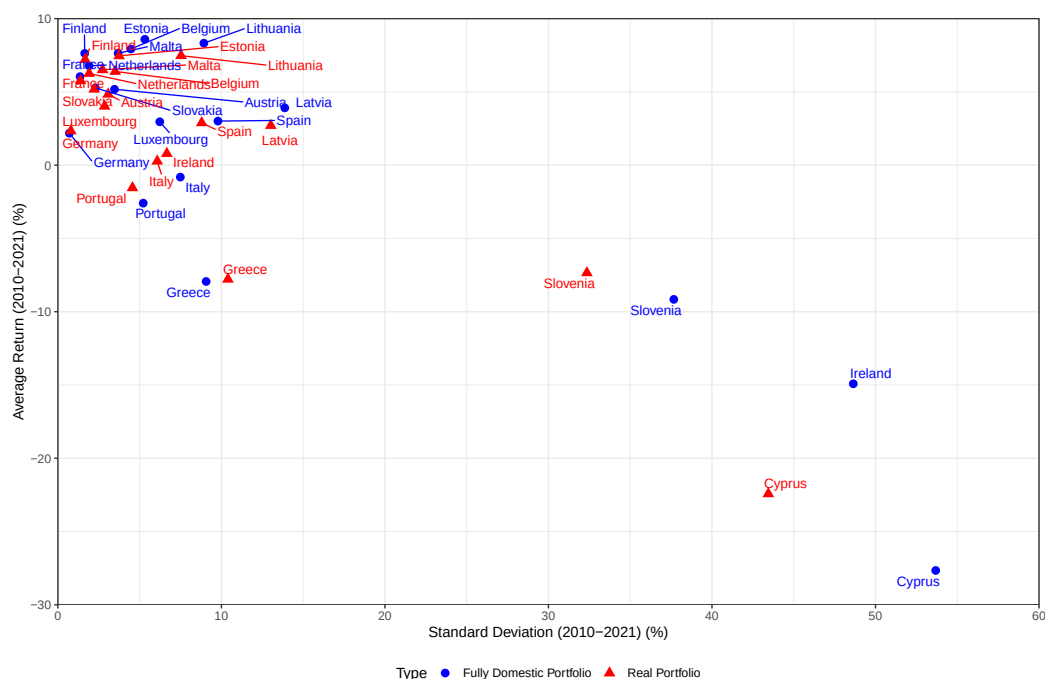


Figure 63: Average Equity Return vs. Standard Deviation (2010–2021). The figure plots average equity returns against their standard deviations for euro area countries, based on ESCB data.

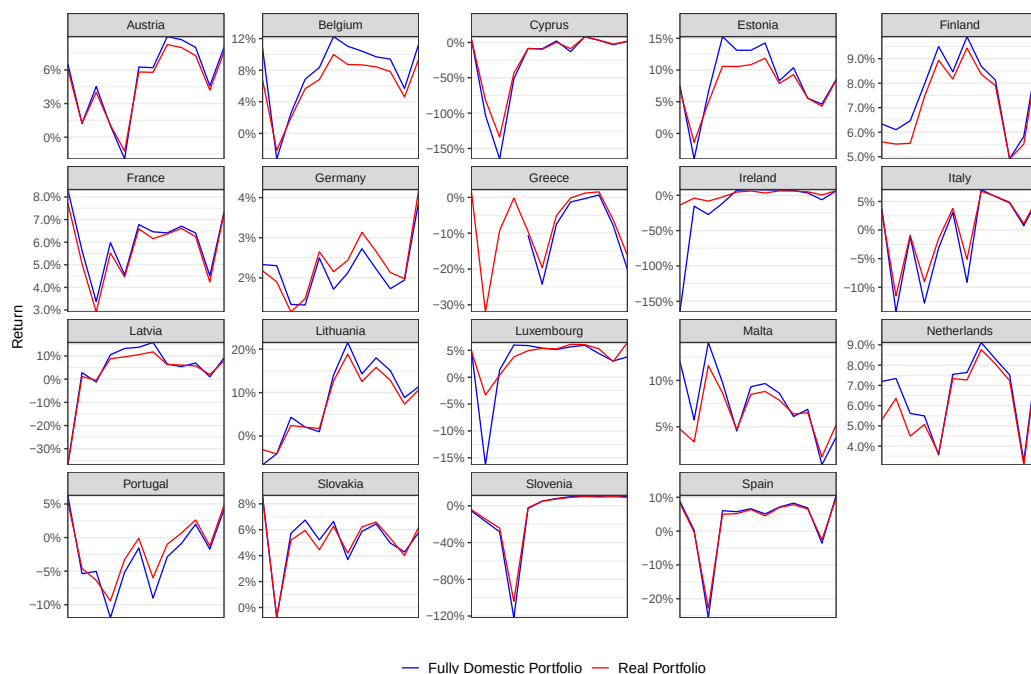


Figure 64: Equity Returns Comparison (2010–2021). The figure compares average equity returns across euro area countries and groups (Core and Periphery). Returns are computed using ESCB data and expressed as annualized averages over 2010–2021.

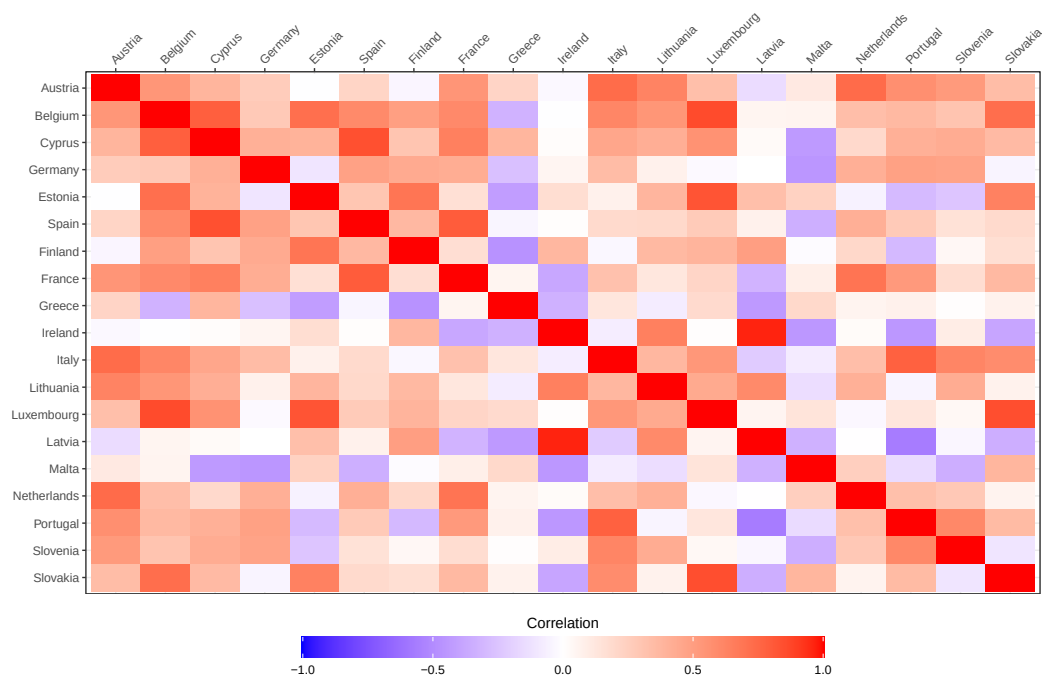


Figure 65: Equity Return Correlations (2010–2021). The figure shows the pairwise correlations of equity returns between euro area countries, using ESCB data over 2010–2021.

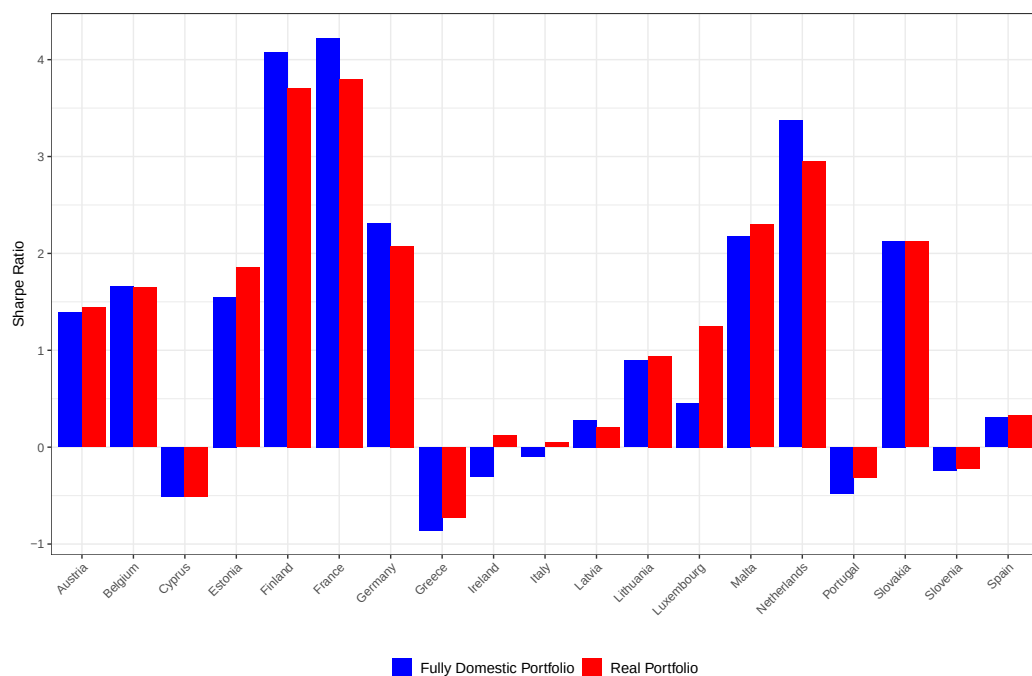


Figure 66: Sharpe Ratios Comparison (2010–2021). The figure compares Sharpe ratios across euro area countries, computed using the 1-month Euribor as the risk-free rate and ESCB equity returns.

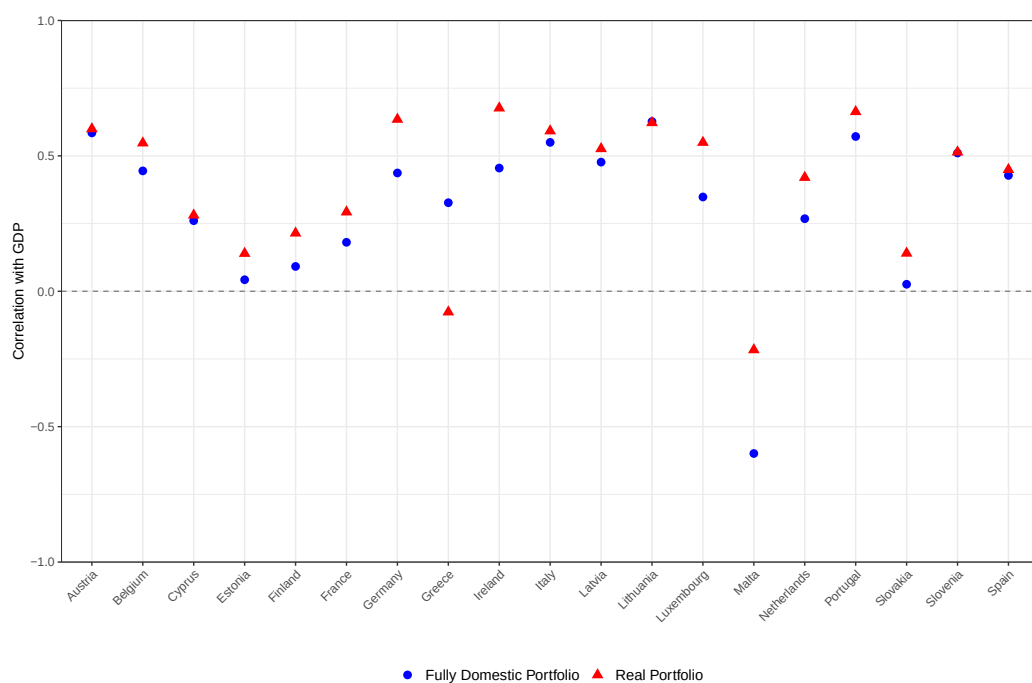


Figure 67: GDP–Equity Return Correlation (2010–2021). The figure reports the correlation between real GDP growth and equity returns for each euro area country.



Figure 68: GDP and Equity Return Series (2010–2021). The figure plots the time series of real GDP growth and domestic equity returns for euro area countries.

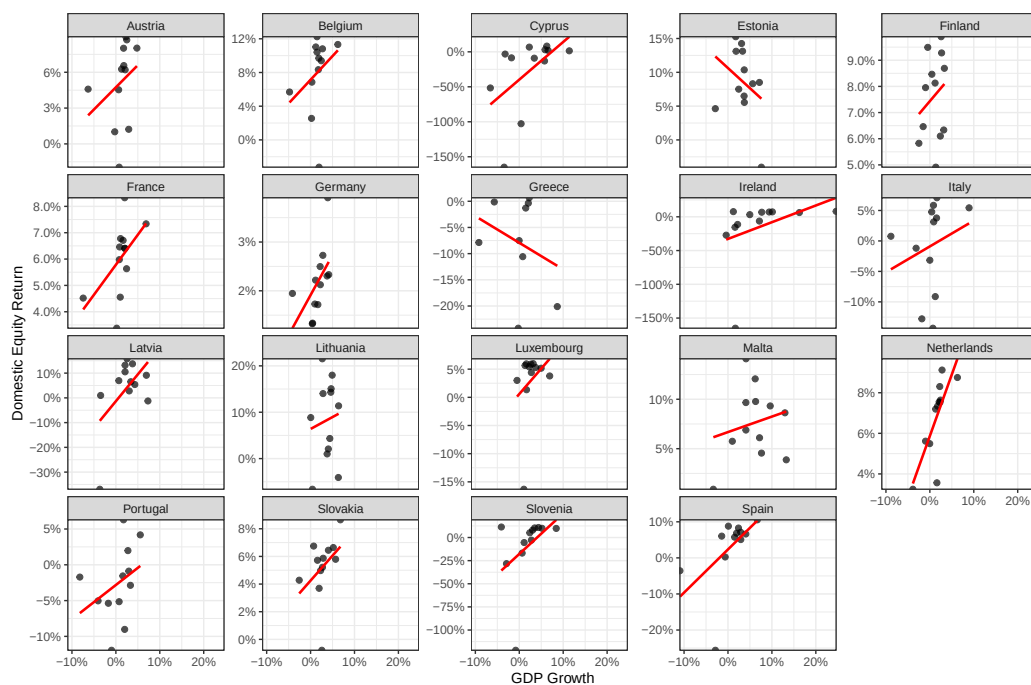


Figure 69: GDP–Equity Return Correlation by Country (2010–2021). The figure presents cross-country correlations between GDP growth and equity returns, comparing Core and Periphery members.

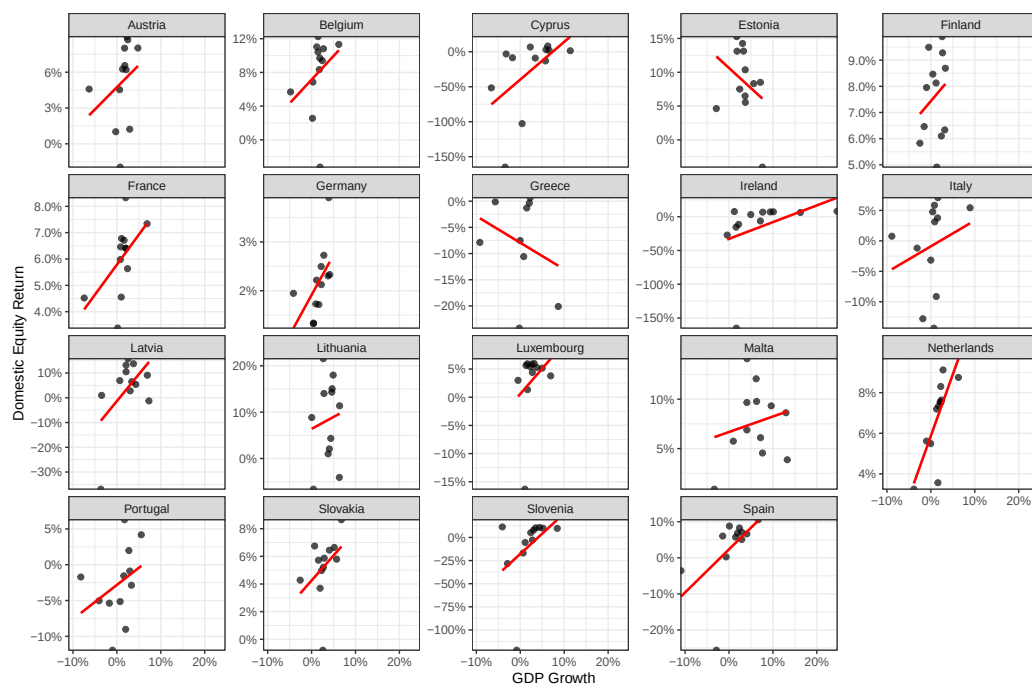


Figure 70: GDP–Equity Return Correlation by Country (2010–2021). The figure presents cross-country correlations between GDP growth and equity returns, comparing Core and Periphery members.