Environmental Investment spending: A comparison across three states

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Summary:
Environmental protection investment is essential for sustainability, but the three comparators of the Republic of Ireland (ROI), Austria and Sweden show widely differing trends and investment levels. Sweden shows the greatest real growth trend between 2010 and 2019, and the highest price adjusted investment per person in 2019. ROI and Austria showed declines in real spending after 2010, and only returned to 2010 levels in 2019. ROI was the lowest total spender, which was explained by low levels of corporate spending. Sweden and Austria showed far more investment on the corporate side.

Introduction

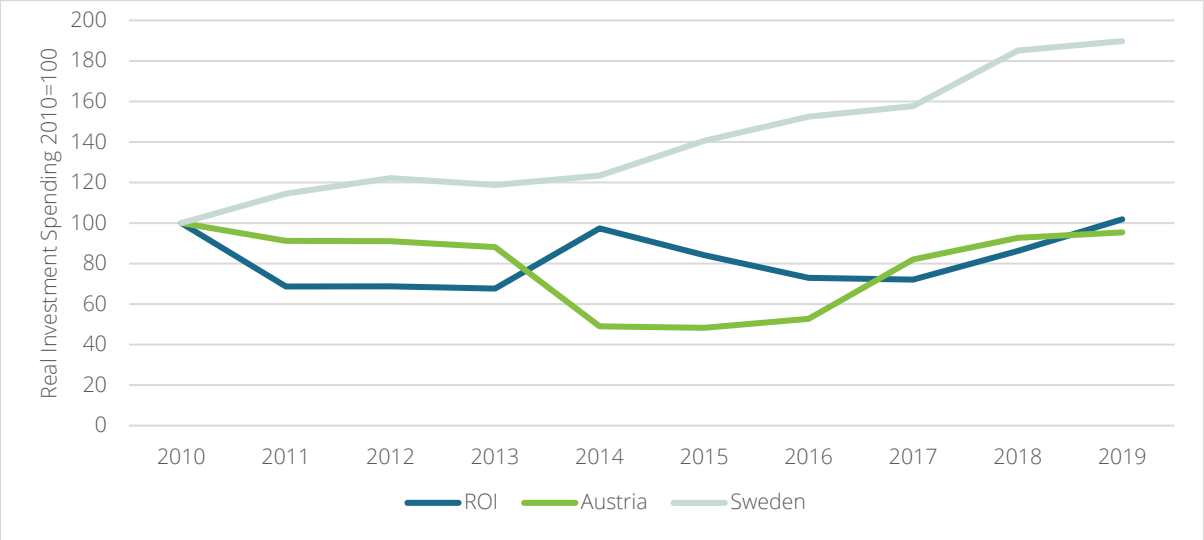
Persson et al. (2022) have shown we face a series of connected ecological crises that will require major economic and social changes. Significant investment on the part of states and other entities will be an essential component of these efforts. The EU's (2023) Environmental Protection Expenditure Accounts (EPEA) measure funds directed to preventing and reducing or eliminating pollutants and other forms of environmental degradation. This *InBrief* uses these investment data to compare investment efforts in three comparable EU states, Austria, The Republic of Ireland (ROI) and Sweden.

The data show that Sweden had consistent real growth in aggregate environmental investment between 2010 and 2019, whereas investment in ROI and Austria declined in the first years of the decade. In ROI by 2019, investment had slightly increased over 2010 levels, while this hadn't occurred in Austria. When adjusted for respective price levels, Irish investment spending per person was significantly below comparator levels in 2019, particularly Sweden's. However, this was explained by the relative lack of corporate investment spend to either produce for market or own use, as governmental expenditure exceeded Swedish and Austrian spending in real terms.

Comparison of environmental investment spending

Chart 1 reveals divergent environmental real investment trends for the comparator states between 2010 and 2019. In the case of Austria and ROI, real investment spending fell significantly after 2010. In Austria's case, real spending more than halved, from just over €1.3 billion to approximate €640 million at 2010 prices. While spending recovered from its mid-decade lows, by 2019 overall environmental investment spending was still some €60 million below 2010 levels in real terms, or 4.6 per cent – amounting to a 10 per cent fall in per capita terms. The Irish series shows volatility following an initial drop of close to a third relative to 2010, from €550 million to a low of just over €370 million in 2013. Spending again fell off after a relatively large annual increase between 2013 and 2014 which saw real investment nearly return to 2010 levels. From 2017, investment grew by over 40 per cent, from €400 million to €560 million by 2019, just under 2 per cent above 2010 levels (though this was about 6 per cent below real per head investment spending in 2010).

Chart 1: Environmental Investment trend 2010-2019 (chain linked 2010 €)



Sources: Environmental protection investments of total economy (Eurostat 2023); Gross capital formation by industry (up to NACE A*64) (Eurostat 2023) ; Author's calculations
Note: These data are adjusted using the 2010 chain-linked volume deflator for Gross fixed capital formation.

Real environmental investment in Sweden, in contrast, showed a consistent upwards trend between 2010 and 2019, with real growth averaging nearly 7.4 per cent annually, or nearly 90 per cent cumulatively. In 2010 euro terms, aggregate spending grew from €1.2 billion to

€2.2 billion. In per capita terms, real environmental investment increased by more than 73 per cent.

Chart 2: Breakdown of Environmental Investment by institutional sector 2019

Sources: Environmental protection investments of general government by environmental protection activity (Eurostat 2023); Environmental protection investments of corporations as specialist and secondary producers by environmental protection activity (Eurostat 2023); Environmental protection investments of corporations as ancillary producers by environmental protection activity and NACE Rev. 2 activity (Eurostat 2023; Health Nutrition and Population Statistics: Population estimates and projections (World Bank 2023); Purchasing power parities (PPPs), price level indices and real expenditures for ESA 2010 aggregates (Eurostat 2023); Author's calculations
Note: The data are adjusted using the deflator for Gross Fixed Capital Formation, with the EU27 price level set at 100.

Purchasing Power Parity (PPP) indices allow for adjustments to be made for relative cost levels, and hence the spending power of investment spending. In this case, data are adjusted so that each euro of spending is expressed at EU27 price levels. Chart 2 shows that despite a relatively high cost level, which would adjust the value of investment spending downwards, PPP adjusted spending per person in Sweden was the highest in the comparator group, at just over €188 EU27 PPP in 2019. This significantly exceeded overall investment per capita in the ROI and Austria, where spending amounted to €129 and €156 per head or 45 and 21 per cent below Swedish values.

However, these differences in aggregate spending mask even greater differentiation by institutional sector. EPEA investment data distinguish three sources of investment spending: *General Government*, *Corporations as specialist and secondary producers* and *Corporations as*

ancillary producers of environmental protection activity. The latter categories describe investment on the part of firms who produce environmental protection services for sale (specialist and secondary) and investment from firms engaged in other activities who invest in environmental protection for their own use (ancillary producers).

The data show that Irish data, though low in aggregate, are dominated by investment from general government, which made up nearly 89 per cent of the overall spend in 2019. This amounted to nearly €115 per head at EU27 price levels, significantly above Sweden's values of about €97 (about half its aggregate spend) and dwarfing Austria's €10 (only 6 per cent of its total). Austria and Sweden show more significant levels of corporate investment in environmental services. In Austria's case, corporate investment spending (and spending overall) is dominated by investment from primary and secondary producers, which made up nearly three quarters of the aggregate total at approximately €115 PPP per capita in 2019. Spending in this category made up just under a fifth of Swedish spending at €35 PPP, while in Ireland it was just over a twentieth of investment spending at under €7. Sweden was the most significant ancillary investment spender in absolute and proportionate terms, at approximately €57 PPP or 30 per cent of overall spending. Austrian firms invested about €32 PPP per person in the state on the production of environmental protection for their own use, or a fifth of their total, while Irish firms spent €8 per head or just over 6 per cent of total spending.

Conclusion

Environmental protection investment varied significantly between three otherwise comparable states. Sweden was the best performer in terms of trend growth – nearly doubling between 2010 and 2019 - and the real value of investment per person at purchasing power parity. Irish and Austrian data show significant declines with 2019 data only meeting or approaching 2010 levels. Adjusted for price levels per person, Irish spending was lowest, though this was explained by comparatively low levels of corporate spend since government spending was highest in the comparator group. In Austria, corporate (and total spending) was dominated by primary/secondary production whereas Sweden showed a more even spread between investment for production for sale and within firm use.