From Farming to Pharma: How a Focus on Education Fueled Ireland's Economic Boom

E. Mellon[1,2] and S. Curran[1,3]

1. CNRG, Science and research Building 1, University of Houston, Houston 77204

2. Integricote, 18906 E Industrial Pkwy, New Caney, TX 77357

3. Physics Department, Science and research Building 1, University of Houston, Houston 77204

Ireland is known for its rain, its green fields and, right now, its reputation as an economic powerhouse that has positioned the country as one of the major players in the EU, despite a lack of exploitable natural resources and a small population. In 2024, the World Bank estimated Ireland's GDP to be worth US$577B, a whopping 0.54% of the world economy [1].

For comparison, Ireland has just 0.07% of the world's population, and in 2021 its income from natural resources was just 0.1% of GDP, compared to a world average of 6.8% [2].

To understand how a small country on the outskirts of Europe became an economic powerhouse, it is important to explore its economic and social history.

After World War 2, Europe was in a state of economic collapse. Destroyed infrastructure, loss of life, and displacement led to massive debt and hyperinflation. The human and economic resources of the region were decimated [3], and Ireland was similarly affected. Recognizing that prolonged deprivation would lead to further unrest, and to discourage the spread of communism, the US invested in Europe's recovery via the Marshall plan. This plan, more formally known as the European Recovery Program, injected capital into Western Europe to aid the rebuilding of its industrial operations, the reestablishment of its production output, and introduced stability to the region [4]. This also established a strong connection and collaborative relationship between the US and Europe. The Marshall plan required that European countries collaborate on the use of the available funds and so led to the foundation of the Organization of European Economic Cooperation (OEEC) [5]. This organization laid the groundwork of cooperation that eventually became formalized into the European Union some 50 years later.

The Marshall plan introduced a 25 year period of economic stability and growth in Europe, but in the early 1950s it was a 'go-slow-go' growth pattern in the UK. The UK government used various fiscal measures, bank rate changes, import controls, rationing of goods, to try and manage the economy and its recovery [6]. The preparations for the Korean war led to rising inflation of over 9% in 1951 and 1952 [6], and in response the UK raised its bank rates.

Since independence from the UK in 1921 [7] Ireland's leadership was hyper focused on highlighting Ireland as a country that was not beholden to the UK in any way, even though the Irish economy was very much linked to the UK's economy [8]. During the 1920s and 30s the UK took over 90% of Irish exports, so any fluctuation in the UK economic performance had a swift impact on the Irish economy. When UK banks raised rates to manage the rising inflation of the early 1950s, Ireland purposefully took a different policy approach. And 'what had been an underperforming economy slid into deep recession' [9].

This is a significant moment in Irish economic history—the consequences of that decision caused Ireland to reorient its manufacturing approach to focus on attracting Direct Foreign Investment [9], which is the basis upon which its economic success today rests. The immediate impact was a rise in unemployment, and then an increase in emigration.

During the early 1900's the education system in Ireland was legislated from the UK, and when the Belmore Commission was established to determine the structure of Elementary schooling, this was introduced into the Irish educational system also. The Belmore Commission was heavily influenced by the New Education Movement, and it ultimately idealized school as an ‘interesting and humane place for children’ [10], with an ‘emphasis on development from within, rather than molding from the outside’ [10]. During the 1920s and 1930s the Catholic Church took a leadership role in the operation of schools, as part of their insistence that the state had no place interfering in family life [10]. However, the government kept responsibility for the curriculum that was to be taught. The church promoted an education focused on literacy and morality, and rather uniquely for the time, allowed equal participation of boys and girls [10]. After independence, the Irish government was determined to promote the use of the Irish language and, in order to expose Irish children to Irish language instruction, mandated compulsory education from age 6-14. This mandate increased school attendance to 83% in 1930. Eventually it became clear that mandating Irish language in schools had failed to produce a generation of children that spoke it fluently and as their day-to-day language; English remained the dominant language. However, the Vocational Education Act of 1930 established a basis for technical education which catered to 14-16 year olds, and being free, encouraged less well-off families to keep their children in education [12]. However, the focus on education continued and attempts were made to update the schooling system to reflect more advanced thinking about children and their educational needs. These updates also sought to structure the educational system in a manner that best supported the changing needs of the economy [10]. Despite these changes, the economy continued through to cycle through strong activity to recession, and at each downturn emigration followed higher unemployment numbers, and was used as a ‘relief valve’ to mask the systemic economic issues.

However, Ireland was not just a nation of emigrants. It was a nation of well-educated emigrants. And a nation of equal opportunity emigrants. By the end of the 19th century, Irish women were 53% of the Irish immigrating to the US. And these women worked hard to establish support networks to sustain the next female emigrant from Ireland [11]. Education allowed for entrance into the workforce, and for social mobility. Second generation Irish emigrants entered the professional workplace at higher rates than any other immigrant group. 'By 1939, 70% of Chicago's schoolteachers were Irish American women' [11]. Irish women were used to being in education at any equal level to men, and they brought that view to the US, championing unions as a weapon against discrimination, entering higher education to become writers and journalists. They brought education to bear on issues of social equality and justice [11]. This was unusual maybe for the times, but not surprising, since the 1916 Proclamation of the Republic clearly guaranteed equal rights and equal opportunities to all its citizens [12]. Combined with the equal access to education through the 20th century, Irish women were equipped to be fully participating members of the workforce.

In the 1930's, the then new Irish Prime Minister, Éamon De Valera or Taoiseach looked to have an Irish economy that was insular based adopting protectionist policy rather than a free state. While this protected Ireland from the worst of the great depression, it led to a small economic growth of 1.4% that was reflected in the business of the country, beef farming and dairy products [13]. Many industries became state owned and ended up being abandoned, strangling any change in economic performance. All in all, the new educated workforce had nowhere to go to work in Ireland and so the country experienced its next great human exodus of the 1950s. Over ½ a million or 16% of the country left for England and sometimes the US where labor paid better and being an educated group, made opportunities for advancement more likely. By 1970 this number grew to over 1 million young people, devastating the home economy by taking away a 'lost generation'. This forced the Irish government to look towards a more open foreign investment-based economy and a move from traditional farming practice as the backbone of the economic machine [14].

In 1950 only 4500 students completed their high school equivalent qualification, about 10% of all highschoolers. Leaving education to the religious groups, while serving a purpose in national politics, left a hole in the educated populace to help with a changing economy. It was the most qualified of these students that left the country, leaving the region barren of new entrepreneurial workers. In the 1960s Ireland went through a huge change in education, children were able to go to free schools for free, comprehensive and skill-based schools were started and economics was not a factor for education, but attendance seen as a must amongst Irish families. While Ireland joined the European Union in the 1970s, this did not lead to the economic lift, this was more a consequence of many political and economic conflicts around the world that did not let up until the 1990s [15]. However, at that stage Ireland had established educational powerhouses for a country of its size and wealth, including a school in the top 50 in the world despite a lack of funding endowments or industrial assistance, Trinity College Dublin. With a huge outreach to the backdoor financial services for Europe, semiconductor industry, followed by medical devices and pharma, this has led by virtue of education alone a new economic power in Europe [16].

To show how powerful an educated workforce can be in the pharmaceutical arena, Ireland exports to the US ($65.7 billion, 28.1% of total imports), followed by Switzerland ($19.3 billion, 8.2%) and Germany ($17.4 billion, 7.4%) of the US market needs. This makes in part Ireland's position as the 4th largest pharmaceutical manufacturer in the world. In addition, it also boasts of being the 17th largest exporter of semiconductor manufacturing equipment, it also ranks just behind China in global exports in software and IT, making it 2nd largest in the world, the rise being coined the 'Celtic Phoenix' [17].

This is a transformative effect where education at a poor level in the 1950s, has changed an economy and wealth of a nation in 75 years. From beef to books!

References

[1] Trading Economics. (2026). *Ireland GDP*. https://tradingeconomics.com/ireland/gdp (accessed May 23, 2026).

[2] The Global Economy. (2026). *Ireland: Natural resources income*. https://www.theglobaleconomy.com/Ireland/Natural_resources_income/ (accessed May 23, 2026).

[3] Eichengreen, B. (n.d.). Recovery and reconstruction in Europe after WWII. *VoxEU/CEPR*. https://cepr.org/voxeu/columns/recovery-and-reconstruction-europe-after-wwii (accessed May 23, 2026).

[4] U.S. National Archives. (n.d.). *The Marshall Plan*. https://www.archives.gov/milestone-documents/marshall-plan (accessed May 23, 2026).

[5] Organisation for Economic Co-operation and Development. (n.d.). *The Organisation for European Economic Co-operation (OEEC)*. https://www.oecd.org/en/about/history/the-organisation-for-european-economic-co-operation-oeec.html (accessed May 23, 2026).

[6] House of Lords Library. (n.d.). *The UK economy in the 1950s*. UK Parliament. https://lordslibrary.parliament.uk/the-uk-economy-in-the-1950s/ (accessed May 23, 2026).

[7] O'Doherty, M. (2025, April 19). De Valera's vanishing Ireland. *The Irish Post*. https://www.irishpost.com/comment/de-valeras-vanishing-ireland-289472 (accessed May 23, 2026).

[8] Documents on Irish Foreign Policy. (1931). *Impact of economic depression* (Vol. 3). https://www.difp.ie/volume-3/1931/impact-of-economic-depression/1264/ (accessed May 23, 2026).

[9] Honohan, P.; Ó Gráda, C. The Irish macroeconomic crisis of 1955–56: How much was due to monetary policy? *Irish Economic and Social History* **1998**, *25*, 52–80. https://researchrepository.ucd.ie/server/api/core/bitstreams/fe3bed5a-fc4c-4e30-8b12-52d3e8f4b24d/content (accessed May 23, 2026).

[10] Walsh, T. (2005). Constructions of childhood in Ireland in the twentieth century: A view from the primary school curriculum 1900/1999. *Child Care in Practice*, *11*(2), 253–269. https://mural.maynoothuniversity.ie/id/eprint/5519/1/TW-Constructions-Childhood.pdf (accessed May 23, 2026).

[11] National Women's History Museum. (2017, March 14). *Raising a glass to Irish American women*. https://www.womenshistory.org/articles/raising-glass-irish-american-women (accessed May 23, 2026).

[12] Fleming, B.; Harford, J.; Hyland, Á. Reflecting on 100 years of educational policy in Ireland: was equality ever a priority? *Irish Educational Studies* **2022**, *41*(3), 441–455. https://doi.org/10.1080/03323315.2022.2085765 (accessed May 23, 2026).

[13] Documents on Irish Foreign Policy. (1938). *British-Irish tripartite agreement on trade, finance and defence* (Vol. 5). https://www.difp.ie/volume-5/1938/british-irish-tripartite-agreement-on-trade-finance-and-defence/2321/ (accessed May 23, 2026).

[14] University College Dublin Archives. (n.d.). *T.K. Whitaker papers: Descriptive catalogue*. https://www.ucd.ie/archives/t4media/p0175-whitaker-tk-descriptive-catalogue.pdf (accessed May 23, 2026).

[15] European Commission Representation in Ireland. (n.d.). *Ireland's EU membership*. https://ireland.representation.ec.europa.eu/about-us/irelands-eu-membership_en (accessed May 23, 2026).

[16] Dorgan, S. (n.d.). *How Ireland became the Celtic Tiger*. The Heritage Foundation. https://www.heritage.org/europe/report/how-ireland-became-the-celtic-tiger (accessed May 23, 2026).

[17] Agarwal, A. (2022). *Predicting the rise of the Celtic Phoenix: A multivariate logistic regression analysis* [Undergraduate honors thesis, Hollins University]. Hollins Digital Commons. https://digitalcommons.hollins.edu/ughonors/45 (accessed May 23, 2026).