

Research Bulletin 23/3 | Business Dynamism in NI: Business Births, Deaths and Implications for Productivity

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Summary

Business dynamism in its narrowest sense, reflects the rate at which new firms (business births) enter the market and existing firms (business deaths) leave the market. Increasing rates of dynamism in the form of business births and deaths are regarded as an indication of a healthy economy due to their positive impacts on innovation, competition, productivity and job creation.

Recent research from Ulster University Economic Policy Centre (UUEPC)ⁱ suggests that business churn (births plus deaths) has increased in Northern Ireland (NI) since 2010 but, due to the combination of a lower business birth rate and a lower business death rate, the economy is less dynamic than other regions of the UK. Further analysis shows that there is often little difference in the productivity levels of business births and deaths in Northern Ireland. In fact, in several sectors the productivity levels of business deaths exceed that of births.ⁱⁱ

At the sectoral level, the highest business birth rates annually are typically in lower productivity sectors. In fact, Information & Communication, which is one of the 10X priority sectors (Software & AI, including cyberⁱⁱⁱ), is the only sector which recorded all three of: higher than average business birth rates, higher than average sectoral productivity and births with higher productivity than deaths.

Of the individual components of business dynamism, the birth rate is found to have a stronger relationship with Northern Ireland's productivity, although overall the correlation is weak. As a result, the components of business dynamism, in the form of births and deaths, appear to have a negligible impact on improving Northern Ireland's productivity levels.

Introduction

Business dynamism, in its narrowest sense, reflects the rate at which new firms enter the market and existing firms leave the market. While this has an impact on jobs, the churn, or turnover, of these businesses itself acts as an important economic indicator. It is related to the concept of creative destruction whereby it is theorised that those who enter the market are more innovative and productive and those that leave are least productive. A more dynamic economy is therefore viewed as a positive and one which is associated with economic growth through higher rates of innovation and productivity.

Existing evidence shows that the business birth rate in Northern Ireland has increased over the last decade. The business death rate has simultaneously decreased over the same period. Business churn (the birth rate plus the death rate) has increased which is important but, to date, little is known about the detail underlying this dynamic nor how this corresponds to wider innovation or productivity impacts. Indeed, survey evidence indicates that Northern Ireland consistently has a low share of firms engaged in innovation activity while productivity levels are persistently among the lowest in the UK.

Assessing the individual productivity and innovation levels of entering and exiting businesses is difficult due to a lack of data. But, by drawing on existing published data, the research aims to enable a better understanding of the elements of business entry and exit in Northern Ireland by taking a sectoral approach and analysing how the trends impact the economy.

This article summarises those sectoral trends in NI business births and deaths and analyses what churn means for productivity in the economy. The results are important as Northern Ireland seeks to deliver its decade of innovation as per the 10X Vision, as it helps to show whether business creation is in those sectors that add most value.^{iv}

Business Births

The number of business births in Northern Ireland rose by 45% between 2010 and 2021, reaching 6,655 in 2021 - a peak for the region. In the UK over the same period, there was a 55% increase with births reaching nearly 364,000 in 2021. Northern Ireland typically accounts for around 2% of all business births in the UK, which is reflective of the size of the business population.

The business birth rate (births as a percentage of the active business population) in Northern Ireland increased from 7.8% to 10.3% over the same 2010-21 period. The business birth rate in Northern Ireland has, however, been the lowest of the UK constituent countries throughout this period, with the UK's rate standing at 12.4% in 2021.

In terms of the sectoral breakdown for Northern Ireland, and when looking at the absolute numbers, the largest number of business births across all years was in the Construction sector with an average of over 900 births annually between 2010-21. However, when controlling for sector size by utilising the birth rate, Transport & Storage has had the highest birth rates since 2020, reaching 24.4% in 2021, more than double the NI average.

Three sectors, namely Education, Arts, Entertainment & Recreation, and Finance & Insurance, all experienced a decline in their birth rate since 2010 with Finance & Insurance contracting by 5 percentage points to a birth rate of 6% in 2021.

When examining the contribution to business births by sector, Construction, and the Professional, Scientific & Technical sector account for 30% of business births combined, a figure that has been consistent since 2010. Retail, Production, Business Administration & Support Services, and Accommodation & Food Services further contribute just under 10% each, on average. Typically, service industries experience higher business births due to lower barriers to entry.

Transport & Storage experienced the largest growth in terms of contribution to births over the period, accounting for 4% of business births in 2010, rising to 15% in 2021. The largest fall was in the Arts, Entertainment and Recreation sector which contributed 10% of business births in 2010, falling to 5.4% by the end of the period.

Business Deaths

The number of business deaths in Northern Ireland reached 5,200 in 2021, virtually unchanged from 5,185 in 2010, or just a 0.3% increase. In contrast, the UK experienced a 10% increase in deaths, rising from 297,400 to 327,390 over the same period. Similar to business births, Northern Ireland typically accounts for around 2% of business deaths in the UK overall.

While the business birth rate in NI increased between 2010-21 the business death rate (deaths as a percentage of the active business population) decreased, from 8.8% to 8%, over the same period. As is the case for the business birth rate, the business death rate in NI is the lowest of the UK constituent countries.

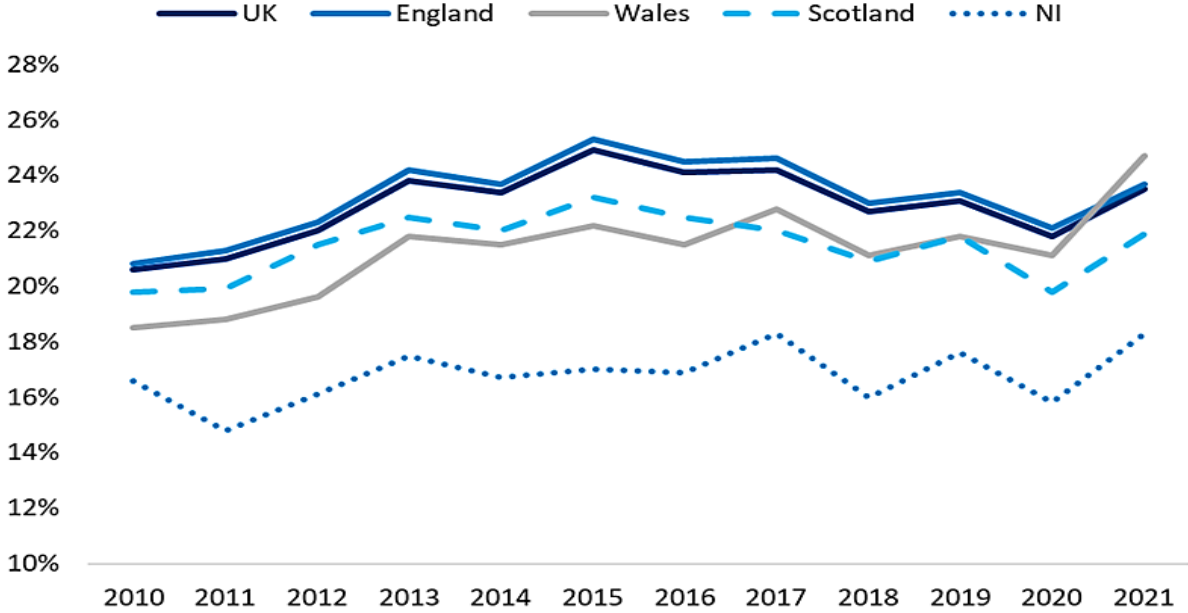
Business births and deaths are highly correlated, in part due to the fact that not all start-ups survive. As a result the sectoral breakdown of deaths is similar to that of business births. Construction has generally had the highest number of business deaths annually with an average of 958 deaths per year, although actual numbers have declined since 2010 from 1,420 deaths to 775 in 2021. In 2021 Transport & Storage overtook it with 805 business deaths, the highest for that year.

Business Churn

Business churn is measured as the business birth rate plus the business death rate. It provides an indication of how frequently businesses are created and closed down, thus reflecting the degree of creative destruction.

The overall churn rate for Northern Ireland in 2021 was 18.3%, a small increase on the 2010 rate of 16.6%. The UK had a higher churn rate of 23.5% in 2021, with a persistent gap between Northern Ireland and the UK over the decade (Figure 1).

Figure 1: Business Churn Rates in the UK Constituent Countries 2010-21



Sources: NISRA, ONS & UUEPC

The combination of a low business birth rate and a low business death rate indicates that Northern Ireland’s economy is less dynamic in terms of business churn than other regions of the UK. Despite this, its churn rate performs well in relation to other small advanced economies such as Switzerland and Finland, although lags that of the more dynamic countries including Estonia and Denmark.

Productivity of Business Births and Deaths

The process of firm entry and exit, along with business expansion and contraction, should increase productivity in the long run as resources are reallocated from declining or exiting unproductive businesses to the more productive and efficient. New business start-ups are particularly associated with this type of creative destruction as they are said to replace outdated incumbents with better products and services and/or reduced production costs, thereby adding to economic growth via enhanced productivity and innovation.

Using a proxy of turnover per employee by sector to measure the productivity of births and deaths¹, the research shows that the average labour productivity of NI business births was £73,000 in 2021, down from £83,000 in 2015. Business births in the UK also experienced a decline of the same magnitude during this period, dropping from £104,000 in 2015 to £93,000 in 2021. Despite the fall in both, the productivity of business births is around 25% higher in the UK than in NI, both in 2015 and 2021.

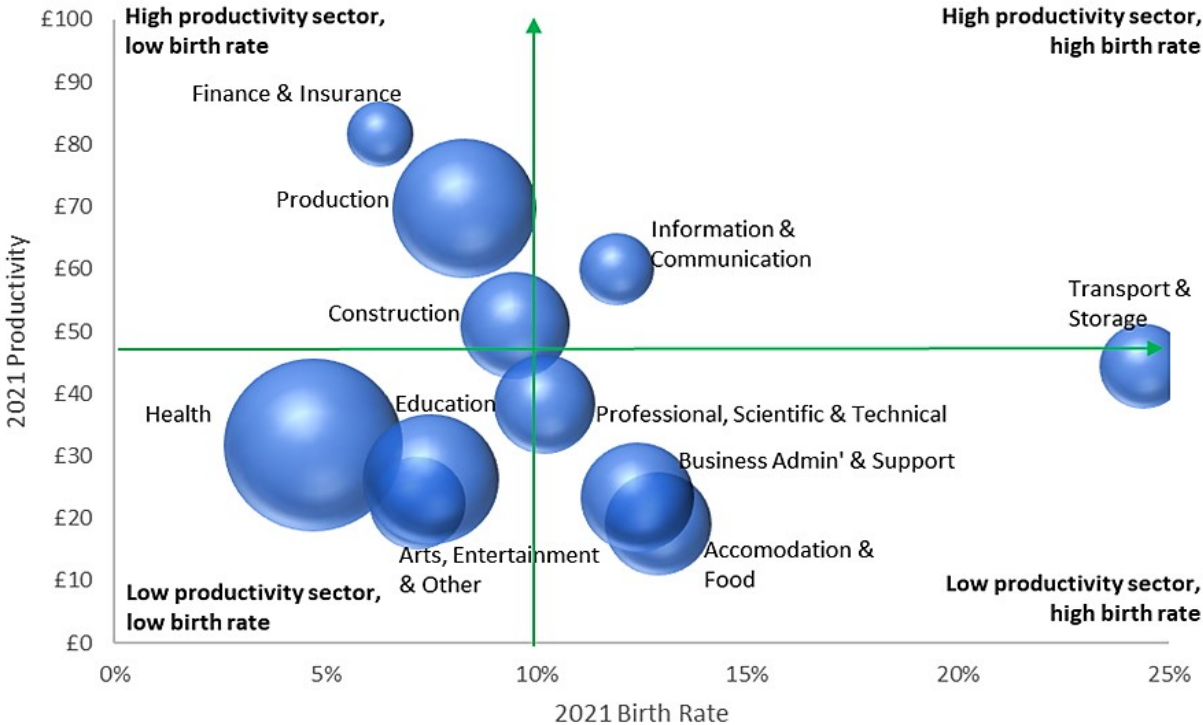
¹ In their respective birth and death year.

The findings further indicated little difference in the productivity levels of births and deaths in Northern Ireland. In 2021, for example, the productivity of NI births was £73,000 compared to £75,000 for deaths. However, the research did reveal differences by sector, with the Production and Transport and Storage sectors having business deaths with much higher productivity levels than the business births in those sectors.

It is not uncommon for new firms to enter with below-average productivity which subsequently increases through the process of learning-by-doing, although research suggests that the ability of new firms to reach industry-average productivity varies substantially across sectors. Furthermore, firms can experience a 'pick-up' in their productivity in their final years, becoming more efficient as they seek to avoid closure and/or receiving income from fire sales while running down labour inputs. As such, the higher productivity of firm deaths compared to births may not be unexpected.

Analysing birth rates against average sectoral productivity (measured as GVA per employee) also showed that Northern Ireland has higher birth rates in lower productivity sectors. Figure 2 plots the 2021 birth rate against productivity for that year. The green lines constructing the quadrant are based on the Northern Ireland averages for that year i.e. a NI birth rate of 10.3% and NI overall productivity of £48,000. The bubble size represents the size of the sector in employment terms for 2021.

Figure 2: Business Birth Rate (%) versus Productivity (000s) by Sector, Northern Ireland 2021



Sources: NISRA & UUEPC NI model

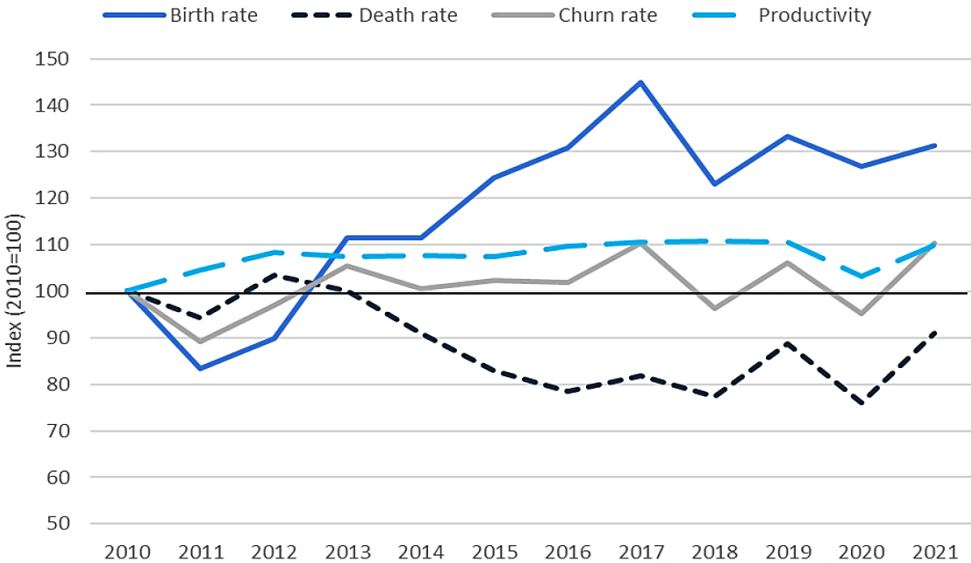
Ideally for the economy, there would be a higher share of entrants in high productivity sectors. Therefore, the top right hand corner of the quadrant represents the ideal scenario representing a high productivity sector and a high birth rate. In 2021, only one sector lies within this quadrant, Information & Communication, which has a birth rate of 11.9% and a sectoral productivity of £60,000. The sector with the highest birth rate in 2021, Transport & Storage, lies in the bottom right quadrant – a high birth rate but low productivity sector - with a sectoral productivity level just below the Northern Ireland average at £44,000. The two sectors with the highest productivity rates, Finance & Insurance, and Production, both have birth rates below the Northern Ireland average – lying in the high productivity but low birth rate quadrant.

Business Churn and Long-term Productivity

Northern Ireland’s real productivity (GVA per employee) increased by 9% over the 2010-21 period, from £44,000 to £48,000. Allowing for the downturn in 2020, the increase to 2021 reflected a return to 2019 levels. In fact, over the entire period, real productivity peaked at £49,000 in 2018 which was 11% above the 2010 figure, representing an annual change of just 1.3% per annum to 2018.

Tabulating the correlation between annual real productivity from 2010-21 against the annual business birth, death and churn rates provides an indication of the strength of the relationship between the variables. The birth and churn rate were found to be individually positively related to productivity, but the death rate negatively correlated. The only relationship with productivity which was statistically significant was the birth rate although it was only weakly significant (at the 10% level). Plotting these components over the period reinforces this lack of relationship (Figure 3). Productivity has remained relatively flat in real terms regardless of the dynamics of business entry and exit.

Figure 3: Change in Birth Rate, Death Rate, Churn Rate and Productivity 2010-21 (2010=100)



Sources: NISRA, UUEPC

Conclusion

This article summarises research on business dynamism in Northern Ireland, recently undertaken by UUEPC. The main report can be found at: [Business Dynamism in Northern Ireland \(ulster.ac.uk\)](#).

The components of business dynamism are thought to contribute to productivity via the concept of creative destruction, whereby resources are reallocated from less productive exiting businesses to more productive entrant businesses. This evolution is thought to improve overall levels of productivity in the economy.

Overall, the analysis points to an economy with a slowly changing business dynamic. The business birth rate in Northern Ireland has increased over the decade to 2021 whilst there has been a slight drop in the death rate. Business churn, which reflects the birth and death rates combined, has increased but Northern Ireland remains the least dynamic part of the UK in terms of this churn, with lower birth and death rates than the other nations.

The highest business birth rates are typically in low productivity sectors. Only the Information & Communication sector, one of the 10X priority sectors (Software & AI, including cyber^v), recorded all three of: higher than average business birth rates, higher than average sectoral productivity and births with higher productivity than deaths. Notably, the sector which recorded the highest growth in business births over the decade, Transport & Storage, has low productivity entrants and has also seen the productivity level of its new entrants fall. Meanwhile sectors which are high productivity have lower than average birth rates and, in some cases, have seen birth rates fall, such as in Finance & Insurance, again one of the 10X priority sectors (FinTech/ Financial Services^{vi}).

The research indicates little difference in the productivity of business births and deaths. In fact, in some sectors the productivity levels of deaths exceed that of births. More widely, the research suggests that of the individual components of business dynamism the birth rate has a stronger relationship with productivity, although overall the correlation is weak. Given these features it is perhaps unsurprising that the components of business dynamism have little impact on productivity and so policy interventions are required to support a more dynamic, productive, and innovative business environment.

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- i [Economic Policy Centre \(ulster.ac.uk\)](http://ulster.ac.uk)
 - ii [Business Dynamism in Northern Ireland \(ulster.ac.uk\)](http://ulster.ac.uk)
 - iii [10X Delivery Plan 2023/24 \(economy-ni.gov.uk\)](http://economy-ni.gov.uk)
 - iv [10X Economy - an economic vision for a decade of innovation \(economy-ni.gov.uk\)](http://economy-ni.gov.uk)
 - v [10X Delivery Plan 2023/24 \(economy-ni.gov.uk\)](http://economy-ni.gov.uk)
 - vi [10X Delivery Plan 2023/24 \(economy-ni.gov.uk\)](http://economy-ni.gov.uk)