Since the 2008 recession, we’ve witnessed the rise of unusual economic creatures. Hiding in plain sight, they employ thousands of people in the UK and operate across almost all sectors of the economy. Yet these apparently benign beings have a dark side, limiting domestic productivity growth and threatening to exacerbate a future economic downturn. They are the zombie firms.

**What are zombie firms?**

For a term which is so evocative, there is no one definition on what a zombie firm actually is. One view is it’s a business which is unable to cover its debt servicing costs from current profits over an extended period\(^1\), another definition describes any company receiving subsidised credit as a zombie\(^2\).

We take a more nuanced approach, identifying companies where turnover is static or falling, profitability is persistently low, margins are being squeezed, cash and working capital reserves are limited, leverage levels are high and there’s a limited ability to invest in new equipment, products or processes. Not every zombie will display every symptom, but consistent with the plot cornerstone in every George A Romero flick, even a few early symptoms tend to indicate trouble ahead.

**How have we got to this?**

The rise in the number of zombie firms over the past decade has been precipitated by an unprecedented set of economic circumstances. The loose monetary policy environment over the past decade certainly accounts for much of it, allowing highly-leveraged companies to make their repayments which, under more ‘normal’ economic circumstances would be unaffordable\(^3\).

There’s a number of other factors at play, however. For various reasons lenders are exhibiting greater creditor forbearance. Increasingly, banks have
The threat that zombie companies pose to the wider economy is very real, regardless of what the post-Brexit environment looks like. Many unproductive businesses have been able to stumble on in recent times, generating just enough profits to continue trading but without the innovation, dynamism or investment necessary to sustain bottom-line growth. This has, and will continue to, create a drag on UK productivity, which continues to lag our peers in the G7 and much of Europe.

Why does it matter?
In previous recessions, businesses that were not productive enough would have ceased trading, being replaced in time with new dynamic companies and ensuring capital is invested most effectively in high-growth, high-productivity businesses. Yet this time round, many of these businesses have been able to stagger on, generating just sufficient profits to continue trading but without the innovation, dynamism or investment necessary to sustain bottom-line growth. This has created a drag on UK productivity, which continues to lag our peers in the G7 and much of Europe.

The risks to the wider economy are very real, regardless of what the post-Brexit environment looks like. If interest rates rise further, highly-leveraged businesses may soon find that the borrowing which was once affordable soon becomes difficult to repay. If the economy continues to stutter, these businesses with very little headroom are left especially vulnerable to adverse market forces or a tightening of liquidity.

What's the situation in the UK?
We started looking at companies listed on either FTSE or AIM, using information from their last three annual accounts. These companies represent the UK’s largest businesses and provide a rich set of data for analysis.

We initially used two established definitions for a zombie firm - the interest cover ratio (the ‘wide’ definition) and further added Tobin’s Q, the divergence between book and market value (the ‘narrow’ definition). On the narrow measure, which includes Tobin’s Q, we identified that the number of zombie firms represents around 8% of listed UK companies. However, based on the latest data in 2018 alone, and taking account of the recent increase in BoE interest rates, the share of zombie companies could be as high as 14%.
Some notable sector observations:

The automobile manufacturing sector ranked highly in our analysis. This sector is undergoing a significant period of change and technological disruption, with the increased take-up of electric vehicles and the move away from diesel undoubtedly changing the sales mix and placing pressure on those who supply into manufacturing operations. Uncertainties around the sustainability of established supply chains post Brexit are adding pressure on the industry.

The utilities sector also ranked highly. Competition has been growing significantly in the energy supply sector over recent years and eating into the market share of large and established ‘big 6’ players in the market, as new entrants offer customers more choice, and significant savings on their bills.

The energy sector has the majority of its zombies in the core oil and gas exploration and production category. The 23% metric noted under the wide definition is perhaps understandable given the oil market is only recently emerging from a significant downturn. The fact that just over a third of those business qualify under the narrow definition, highlights the long investment horizon of the industry.

However, whilst these wide and narrow definitions allow for easy cross-border comparison, they are open to challenge. For instance, low interest cover ratio may not in itself indicate a zombie firm if the sector typically is highly leveraged.

The single-variate metrics also have the potential to exclude some key flags that might indicate a business is beginning to struggle. For example, 28% of listed companies publishing accounts have had a liquidity ratio less than 1 for each of the past three years. Nearly 30% have had gross margin of less than 5% in each of the last three years, and over 11% have seen their cash balance repeatedly decrease year-on-year.

Whilst not within the population above, the point is illustrated by the example of American electric car maker Tesla and TV streaming behemoth Netflix, both of which could be classified as zombie firms under the global definition. They are both established businesses each turning over billions of dollars and generating very little in the way of cash or profits. Despite all this, it would be hard to classify either of these as zombies given their growth profiles.

What lurks beneath: private companies

Equally interesting but not included in the analysis above is the private company population where the Tobin’s Q metric cannot be applied.

Private company zombie firms are, if anything, likely to be more vulnerable to succumbing to the disease as they are perhaps less able to raise capital. For unlisted entities we have developed a series of additional metrics (or ‘symptoms’) to identify potential vulnerabilities, covering areas such as turnover, cash reserves and margins. For simplicity were are classifying any company which displays three or more symptoms as ‘qualifying’ as a zombie.

We sampled c21,000 of the largest private companies and found that 60% displayed one or more symptoms of zombie firms. But perhaps more surprisingly, found just 8% of the businesses displaying three or more flags and meeting our threshold definition. As the private company result does not illustrate any more zombie concentration than the listed company equivalent it would suggest that capital remains more freely available to this population than one might assume. Again, we would observe that lender forbearance and government policy have played a crucial role in this regard.

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Looking at specific sectors within the private company population, we offer the following observations:

- **Travel and Leisure** has the largest percentage share of zombie companies, at almost 12%. Broader economic pressures reducing discretionary consumer spending appetite is likely a key factor in this result.

- **Real Estate** also has a high proportion of zombies. Retail landlords in particular are finding income and asset value under significant pressure as a result of the demise of many significant high street names.

- **Financial and professional services** companies are also showing some signs of zombie behaviour. Ongoing economic uncertainty is likely to be playing a role, though this sector contains a diverse range of businesses and some sub-sectors are likely to be performing far worse.

**Waking the dead**

Zombies have been allowed to sleep walk for the past decade largely undisturbed, thanks to an extraordinary monetary and political environment that is unlikely to persist indefinitely.

When they awake, the potential for contagion is very real, creating broader challenges for an economy already struggling to deal with a range of challenges.

A zombie apocalypse can be avoided. It is up to policymakers, businesses and lenders to act swiftly in order to understand how they, their customers, and (where relevant) their suppliers may be exposed to zombie companies, and take mitigating action now to limit their exposure.
Contact us

Yael Selfin  
Chief Economist  
KPMG in the UK  
T: +44 (0)20 7311 2074  
E: yael.selfin@kpmg.co.uk

Blair Nimmo  
UK Head of Restructuring  
KPMG in the UK  
T: +44 (0)141 300 5588  
E: blair.nimmo@kpmg.co.uk


3 The number of zombies has largely risen across the developed world. In the UK, the share of listed zombie firms fell between 2007 and 2010, and the share of employment in zombie companies fell further by 2013. But the proportion of capital tied up in zombie firms remained material, at 75% by 2013 (see R Banerjee and B Hofmann, *The rise of zombie firms: causes and consequences*, BIS (2018), and AM McGowan D Andrews and V Millot, *The walking dead? Zombie firms and productivity performance in OECD countries*, OECD (2017).

4 Although Creditors’ voluntary liquidations have started to rise since 2015.

5 Our wide definition classified a company as zombie if its Interest Coverage Ratio was less than one in the last three years and the company was older than ten years; and the narrow definition added a third requirement that the company had its Tobin’s Q lower than the median for the sector, pointing to relatively low growth expectations.

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