

Quinn, Martin; Feeney, Orla

Working Paper

Domestic Waste Management in Ireland - the Journey Towards Financialization

QMS Research Paper

Provided in Cooperation with:

Queen's University Belfast, Queen's Business School

Suggested Citation: Quinn, Martin; Feeney, Orla (2022) : Domestic Waste Management in Ireland - the Journey Towards Financialization, QMS Research Paper, Queen's University Belfast, Queen's Management School, Belfast, <https://doi.org/10.2139/ssrn.4081062>

This Version is available at:

<https://hdl.handle.net/10419/271266>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Domestic waste management in Ireland - the journey towards financialization

Abstract

Successive Irish government policies have followed a neoliberal approach, whereby market-based institutions have replaced what has traditionally been a public service. Efforts to charge domestic customers for water services in Ireland, resulted in protest and the abandoning of charges. However, domestic waste services have been transformed over time to such an extent that in early 2021, one private-owned waste company was valued at over €1 billion, and later sold. The last three decades has seen domestic waste services in the Republic of Ireland evolve from a service delivered by local authorities in each city/county area, to one delivered entirely by the private sector. A pay by weight/volume system was to be introduced in 2005, although it took until 2018 for a full system to be in place. The journey to this system has had many policy twists and turns and involves many actors. An outcome of the journey is a domestic waste collection market in effect, with some very large and profitable waste companies. This paper examines the policy changes over time, outlining how Ireland's domestic waste services reached a point where they can be termed not only economized, but financialized.

Keywords: domestic waste policy, Ireland, financialization.

1. Introduction

Since the 1990s, domestic waste policy in Ireland has evolved to a scenario where collection services are operated entirely by the private sector for a paid fee per household. This contrasts to other European countries where domestic waste collection remains a public service. Ireland's waste management infrastructure is increasingly owned and operated by these private firms, meaning competition and regulatory compliance have become the focus of government policy. Although Irish policy now embodies the polluter pays principle within this privately owned infrastructure, the journey has been a long one. While the journey started in the mid-2000s, full legislation was not enacted until 2015, whereby a statutory minimum pay-by-weight charge for all domestic waste types was imposed. The charges/system was postponed for one year due to concerns consumers would incur higher charges (Irish Times, 2016). By June 2017, the imposed minimum charges were abandoned in favour of a regulated market-based pricing system.

In the resulting market-based system, those firms within the market are for-profit and private (i.e. non-quoted) firms. Bresnihan (2016) in the context of domestic water supply, refers to the bio-financialization of such vital services in Ireland. Epstein (2005, p. 3) encompasses several prior definitions of financialization, noting it as a process that depicts the increasing influence of financial motives, markets, actors and institutions on economies, both domestic and international. In the context of domestic water service provision, the financial motives of Irish government policy have focused on covering costs and ensuring funding for future investment (Jollands and Quinn, 2017). Arguably, this is a mild version of financialization when compared to domestic waste services, which as stated, are now almost entirely in the hands of for-profit actors. This suggests a stronger form of financialization has occurred in the case of domestic waste service provision, Quinn and Feeney (2020) focus on and refer to the use of accounting concepts within domestic waste services in Ireland, and to its economization over time - see Çalışkan and Callon (2009, 2010). This paper explores the domestic waste policy journey in an Irish context. The objective of the paper is to focus on the policy decisions over time and how financialization - not only economization - has come to be in the Irish domestic waste context.

The paper is structured as follows. First we outline some extant literature on domestic waste management and the context of waste management in Ireland. The methods and sources used are then detailed, including an outline of financialization. Next, we outline the story of domestic waste in Ireland from 1996 to 2021, with a greater emphasis on the latter ten years or so. This is followed by some discussion, and we conclude with some points for future research, and note some limitations of the research.

2. Literature and context

This section fulfils two functions. First, it provides a brief review of relevant literature on domestic waste management policy in general, and some literature on Irish domestic waste policy. Second, an overview of financialization is given, which is linked to prior literature on financial/economic aspects of domestic waste management.

Domestic waste policy and the Irish context

A comprehensive review of literature on waste management policy is beyond the scope of this paper. We will however highlight some key concepts, with an emphasis on cost recovery/pricing mechanisms.

A useful start point is a study by Scharf and Vogel (1994), who noted waste collection methods in major European cities. They reported on various volume-based and flat rate pricing mechanisms. In contrast, a typical key policy aim is a weight-based charge, to reduce waste through recycling - a pay-as-you-throw (PAYT) system (Reschovsky and Stone, 1994). The literature on PAYT is extensive, and many strengths and weaknesses have been reported - see for example, Dijkgraaf and Gradus (2004) - and it is generally regarded as the most economically effective collection method (e.g. Husaini et al., 2007). Waste collection services can be provided by the public sector or private sector. Eggerth noted involvement of the private sector in providing [waste] services has become even more complex (2005. P. 229), citing a lack of public funds. Eggerth (2005) also suggests privatisation brings issues such as how are low-income families catered for? However, in general, researchers such as Eggerth (2005) and Ma and Hipel (2016) note the efficiencies and cost savings associated with privatisation. In the Irish context, Reeves and Barrow (2000) noted unit cost savings were quite substantial through privatising waste collection services (up to 45%). Curtis et

al. (2010) noted that little has been published on the costs of waste collection services in Ireland. Quinn and Feeney (2020) noted that a lack of cost data (even at a high level) was compounded due to many waste companies being private (i.e. not quoted on any stock exchange) and thus not required to publish detailed accounts. They also noted many companies in Ireland used an unlimited company structure, which until 2019 had very limited disclosure of accounting data to a company's registry. Of course, in a fully privatised sector, there is a need for oversight. As Ma and Hipel (2016, p.6) noted, local government still plays an important role in developing policies and strategic plans for private sector participation, monitoring service provisioning, assessing service quality. We will return to this point later.

An Irish economic boom in the 1990s impacted both the nature and quantity of waste generated (Boyle, 2001). By the late 1990s, Ireland was facing a waste crisis, with a poor infrastructure and under-developed policies to meet European Union (EU) regulations (Davies, 2003). At the time, the Irish government developed a national framework for waste management to reduce waste (Fagan, 2003). Policy instruments included landfill expansion, use of incinerators, creating a recycling infrastructure and charging for domestic waste collection (Davies et al., 2005). The latter policy approach is of particular interest here, as in 2003, the Protection of the Environment Act, 2003, legislated for the introduction of domestic waste collection charges (see later). As noted by Davies (2003) society's role in waste policy in Ireland has been regarded as confrontational or negative - in contrast to the positive impact reported in other countries (Liss, 2001).

The literature also explores individual and household (re-)actions to waste policy. A variety of social and institutional factors have been reported as potentially influencing individual attitudes to waste: national wealth and levels of industrialisation (Dunlap et al., 1993), personal norms and awareness of consequences (Hopper and Nielsen, 1991), and environmental concern and social norms (Minton and Rose, 1997) for example. In Ireland specifically, Davies et al. (2005) revealed influences such as personal characteristics and social and institutional factors. Purcell and Magette (2010) suggest that individual behaviours were spatially variable in Ireland. They also supported Davies et al. (2005) and reported that behaviours were significantly related to personal characteristics such as education level, type of accommodation and age.

Although a short summary of literature and the Irish context is given here, it is apparent that domestic waste management/policy is complex, with many actors at many levels. The detailed account of domestic waste management in Ireland between 1996 and 2021 provided later will highlight the complex relationships between the European, national and local authorities (Boyle, 2001, 2002; Fagan et al., 2001; Taylor, 2001; Davies, 2003) Irish society (Davies et al., 2005; Davies, 2007) and increased presence of private enterprise (Reeves and Barrow, 2000).

Economization, marketization and financialization

The business and management literature contains several concepts which can enlighten how public service management has changed in recent decades towards a more commercial orientation. A broad concept of New Public Management (NPM) has been noted - see Hyndman and Lapsley (2016) for a review. Hood (1991) described NPM as a marriage of two different streams of ideas (1991, p. 5) - New Institutional Economics and managerialism. NPM suggests that government policies focus on matters such as unbundling the public sector into units by product/service, more competitive markets and contracts for public goods/services, private sector management styles, visible top management and more formal and measurable performance standards (see Hood 1991, 1995; Hyndman and Lapsley, 2016).

Within the broader frame of public services and goods being increasingly commercialised over time as suggested by NPM, three concepts are worthy of further mention. First, economization as presented by Çalışkan and Callon (2009, 2010). Çalışkan and Callon (2009) proposed a formalist meaning of 'economic' (individual behaviours leading to decisions to fulfil needs) and a substantivist meaning (mechanisms through which society meets its needs). These individual and collective views can be brought together in considering what is 'economic'. For domestic waste, individual behaviours could, for example, increase financial means (i.e. personal wealth) by reducing waste; or as society by creating mechanisms and/or policy to encourage individual waste reduction. Çalışkan and Callon (2009) refer to economization as the processes that constitute the behaviours, organisations, institutions and, more generally, the objects in a particular society which are tentatively and often controversially qualified, by scholars and/or lay people, as 'economic' (p. 370). Quinn and Feeney (2020) used the concept of economization to explain how the Irish domestic waste sector can be considered economic, and we return to this point later. The second

concept is marketization. Çalışkan and Callon (2010) referred to marketization as a form of economization which resulted in the establishment of markets. For example, Warren and Seal (2018) studied electricity generation in the United Kingdom (UK), a sector which moved from public to private ownership over several decades. Quinn and Feeney (2020) did mention marketization but hinted that using the term for an Irish waste market may be overselling, suggesting such a market in Ireland was not comparable (in size terms) to markets for electricity in the UK/other countries. However, their work did suggest a domestic waste collection market exists in Ireland with competition and prices visible to end-consumers, thus suggesting marketization of domestic waste. Third, and finally is the concept of financialization. Epstein (2005) defined it as a process that depicts the increasing influence of financial motives, markets, actors and institutions on economies, both domestic and international. Thus, financialization encapsulates both economization and marketization. Warren et al. (2018) for example have argued that the British energy policy has been financialized. Concepts such as marketization and financialization appear to be not widely mentioned in waste policy literature, although the importance of financial sustainability has been noted - e.g. Bartiolacci et al. (2018), Lucato et al., 2017 and Qi et al. (2014). As mentioned in the introduction, the objective of this paper is to follow the policy decisions which have brought about financialization in the Irish domestic waste sector.

Method and sources

Quinn and Feeney (2020) reported how a profit motive entered Irish domestic waste policy through privatisation, and it has been noted above that it can also be considered marketized. They stopped short of suggesting the sector as financialized. In early 2021, the influence of financial motives in the sector became apparent as media reports revealed the sale of shares in one waste firm, valuing it at about €1 billion (Irish Examiner, 2021). Thus, there are signs of the sector being financialized also and thus the concept of financialization is utilised in this study. The method for this study is to follow key processes and policies over time as Ireland completed its pay-by-weight model for domestic waste. An overview of events is presented below drawing on publicly available documents such waste management legislation, policy documents, media reports and parliamentary records. The concept of financialization was to the fore as the sources were examined, to reveal the processes of eventual financialization of the Irish domestic waste sector.

Domestic waste management in Ireland 1996 - 2021

The story of domestic waste management in Ireland is best considered in two time periods 1) from 1996 to 2002, and 2) from 2003 to 2018. The latter period evidenced more economic considerations, as well as an increasing recognition of environmentally sustainable waste management. Irish local authorities could charge for waste collection services from the 1980s, but few did. Barrett and Lawlor (1995) noted that about 60% of the population of Ireland were paying a fixed collection charge by 1994, the exception being mainly larger urban areas. In the 1980s, poor investment in waste management practices resulted in the provision of collection services and landfill facilities (Fagan, 2003). Throughout the 1980s and 1990s, the waste generated in Ireland doubled (Stapleton et al., 2000) and the recycling rate was amongst the lowest in Europe. There was a reliance on landfill, attributed mainly to its cost effectiveness (Boyle, 2001). The polluter pays principle was first encapsulated in an Irish context in the Waste Management Act (1996), which is the starting point for this paper.

Policy and Legislation: 1996 - 2002

Following the Waste Management Act 1996, various policy instruments were introduced. The first was *Waste Management – Changing our Ways (1998)*. It encompassed an integrated approach drawing on from the ‘waste hierarchy’- prevention, minimisation, re-use, recycling, energy recovery and sustainable waste disposal (Barrett and Lawlor, 1997). The 1998 policy document encouraged regional waste management. Ambitious recycling and recovery targets were set for 2013 - diversion of 50% of household waste from landfill, minimum 65% reduction in biodegradable waste consigned to landfill, recycling 25% of municipal waste, recycling 85% of construction and demolition waste (Dempsey, 1998, p.6). Following the 1998 policy document, local authorities formed seven regional groupings. By 2001, 29 local authorities subscribed to regional waste management plans with three following individual county plans (Government of Ireland, 2002, p.7). By this time, EU waste policy focused on decreasing reliance on landfill (Government of Ireland, 2002, p.7). Limits were placed on the portion of biodegradable municipal waste sent to landfill by 2010 and Directive 1999/31/EC set targets for Ireland on municipal waste to landfill - 75% of the 1995 level by 2006, 50% by 2009 and 35% by 2016 (Government of Ireland, 2002, p.47).

In 2002, *Delivering Change - Preventing and Recycling Waste: a policy document*, set an agenda to address waste management from the top of the waste hierarchy. A key thrust of the 2002 policy document was recycling. A total of €127m in EU/Exchequer funding was made available to support waste recovery and recycling. To change the public's attitude towards recycling, a landfill levy was introduced by the Waste Management (Amendment) Act 2001. The initial levy was €19 per tonne, which eventually filtered down to increased domestic waste collection charges where such services had been privatised. The Protection of the Environment Act (2003) amended powers of local authorities to charge for waste services allowed them to pass on the levy. The year 2005 was set as the year by which a pay-by-weight or pay by volume system was to be introduced (EPA, 2004).

Policy and legislation from 2003

Irish local authorities could charge for waste collections since 1983, but not all did. The main exception was local authorities in the Greater Dublin area - the most densely populated area of Ireland. In 1993, the Local Government (Dublin) Act (1993) split Dublin County into four new local authority areas. In 1994, three of the new authorities introduced a flat water charge (see Jollands and Quinn, 2017) and public protest followed with the charges rescinded in 1996. These protests left Dublin local authorities reluctant to impose waste collection charges.

The Protection of the Environment Act (2003) allowed local authorities to make a charge in respect of the provision of any waste service by, or on behalf of, that authority (Section 52, 2003). This, and the Waste Management Act (1996), allowed for the provision of waste services by private enterprise under contract. By 2003, and with the passing of the 2003 Act, waste collection charges were introduced to Dublin (Davies, 2007). Their introduction led to protest against what was termed the 'bin tax' (Davies, 2007). Households refused to pay waste charges and in response local authorities threatened non-collection. Some community activists and politicians were jailed or fined for participating in protest activities. The effect of such actions was disruption to waste services for many weeks, but also an anti-bin charge movement which showed how waste charges had become a challenge of governance and cost-recovery (following the polluter pays principle) as well as one of environmental sustainability. By 2003 several private companies had already entered the Irish waste market outside of Dublin. Local authorities traditionally had low waste collection charges (with some waivers) implying they often covered only a portion of their costs

(Dunne et al., 2008). Flowing from an increasing realisation that waste collection was not efficiently operating as a public service (Reeves and Barrow, 2000), private companies replaced local authorities and waste collection charges became subject to market forces. This growth in involvement of the private sector coincided with a period in which the costs of waste services had increased significantly, due to environmental standards associated with waste (Dunne et al., 2008). This created a conflict as any private waste sector had to be competitive, whilst waste policy was a key element of the national and European agenda toward environmental sustainability.

In 2004, a new document, *Taking Stock and Moving Forward*, sought to establish where Ireland stood in relation to waste management. According to it, segregated collection of dry recycling was available to 42% of households, the number of public recycling points had doubled from 1998 levels and there was a significant growth in a network of civic recycling centres. At this time, waste collection charges were largely fixed, with services provided by a mixture of local authorities and private operators. It was becoming increasingly apparent that flat waste charges did not cover cost, nor incentivise citizens to reduce waste or recycle. Ultimately it was necessary to internalise the cost of waste disposal, making households accept responsibility for their own waste disposal and encourage behavioural changes (Dunne et al., 2008) using either a pay-by-weight system or pay-per-use system. This latter method was commonplace in Ireland at the time. The following extract from the 2004 policy document on waste management sets out the intentions at that time:

Accordingly, 1 January 2005 has been set as the date for the completion, nationally, of the switch to weight/volume-based charging. Responsibility for doing so will rest with individual collectors, with local authorities including appropriate conditions in waste collection permits, the first two-yearly reviews of which are now starting to fall due. Collectors will have discretion to decide the precise form of system they use, provided that it respects the principle of use-based charging (EPA, 2004).

A pay-by-volume system was introduced in many areas - typically a charge per collection - and private waste operator charges rose. Private waste operators provided no relief to low-income households and thus local authorities managed waivers of charge - presenting significant cost implications for the local authorities.

By 2012 domestic waste was fully privatised. By this time, Ireland remained unsustainably dependent on landfill (Department of Environment, 2012) and the landfill levy had reached €65

per tonne in 2012, increasing to €75 per tonne in 2013. However, more measures were needed. The Environment (Miscellaneous Provisions) Act 2015 introduced a pay-by-weight scheme and this was to be enacted from July 2016. All households would be charged on a per kilogram (kg) basis. The legislation set out a minimum mandatory fee per kg - 11c for residual waste, 6c for organic waste and zero for recyclables. From July 2015, all waste operators would be legally obliged to weigh all collected waste collected and make information available to customers - in essence a 12-month window for consumers to get used to the new system. By Summer 2016, a newly elected government faced opposition from householders who believed waste charges would increase. This new government was already facing questionable stability and sustained protest over the introduction of a separate household charge, namely water charges. Thus, the new waste charges were frozen until July 2017. During the year to July 2017, waste operators were required to provide customers with two bills - one showing what they pay under the current flat fee system, and one showing what they would pay under a pay-by-weight system.

As mentioned, a pay-by-weight was due to be effective nationwide by 1 July 2017. However, in late June 2017, the Irish government scrapped the scheme on the basis that it was unfair, inflexible and did little to encourage recycling. Instead, the government required private waste companies - of which there were 67 at the time (Dáil Éireann, 2017) - to offer incentivised pricing options and phase out fixed flat-rate charges. All waste collectors were also required to provide bins for organic waste in an effort to reduce overall waste. The government suggested that such an incentivised charging regime would ensure that if people segregated more and produced less waste they would pay less. These new measures were set to be implemented over a phased period of 15 months.

Suggesting these new proposals would lead to price hikes, particularly in the Dublin area, some political opposition was voiced. The main opposition party, Fianna Fáil, called for the appointment of an independent waste regulator. A parliamentary motion proposed by the opposition was accepted by the government on 4th July 2017 and a waste pricing watchdog was to be established under the auspices of the Competition and Consumer Protection Commission. In addition, and unrelated to waste policy. The Companies (Accounts) Act 2017 made changes to Irish company law which implied only pure unlimited liability companies can avail of reporting and filing exemptions. Some Irish waste operators used unlimited companies in effect to hide costs, profits

and assets from competitors. This new Companies Act removed this and from 2019 financial statements under the new law became available. The promised price watchdog, named the *Price Monitoring Group* (PMG), came into being in September 2017. Its membership comprised government officials, an economist, independent consumer price monitoring representatives and independent consumer experts. It produced its first report in December 2017¹ and its regular reports show full price details for waste collection firm names anonymised. By the end of 2020, all waste operators were complying with the new regulations and 45 different price plans existed nationally and prices were stable². All operators had a standing charge, with a rate per lift or per kg also.

By early 2021, the outcome of the series of Irish waste policy changes described here became apparent in financial terms, or more specifically in the valuation of one of the larger waste operators in Ireland. The company, Beauparc Utilities, controls two domestic waste companies (Panda and Greenstar) and was sold in mid-2021 to an Australian firm for a price in excess of €1 billion (Irish Examiner, 2021). Financial statements filed at the Companies Registration Office show the company has a turnover in excess of €500 million annually in 2019 and 2020, of which about 75% is generated by waste management services. Annual profits are in the order of €15-30 million from 2018 to 2020.

Concluding comments

The above has shown how the collection of domestic waste in Ireland has moved from being a free service provided by local authorities, to a fully privatised and chargeable service. The resulting waste collection market, while monitored by the PMG, is privately controlled and must be profitable to be sustainable. The various policy changes over time are now discussed in light of the concepts of economization, marketization and financialization.

Economization as described by Çalışkan and Callon (2009) describes how things (behaviours, organisations, institutions, objects) become ‘economic’. As revealed above, the Irish government chose policies which allowed private for-profit firms to essentially economize Irish domestic waste

¹ See <https://www.dccae.gov.ie/documents/Price%20Monitoring%20Group%20Data%20Jan%202018.pdf>

² See <https://www.gov.ie/pdf/?file=https://assets.gov.ie/101820/37710568-f6c1-40a2-a454-f2c4c5e92093.pdf#page=null>

collection. To relate domestic waste collection to a term from economics, it is best described as a merit good rather than a public good in an Irish context, as individual consumers may be excluded if they do not pay waste collection charges. As mentioned earlier, Çalışkan and Callon (2009) distinguish a formalist meaning of economic - individual behaviour to fulfil needs - and a substantivist meaning - mechanisms through which society meets needs. In an Irish context, in domestic waste collection there is a dual role of the individual and society. Individuals can fulfil a need to have domestic waste collected to avoid health risks and support recycling by means of payment of a monetary cost - either directly or through indirect taxation. In the former, cost can to an extent be controlled by the individual through recycling and waste reduction efforts. Society, and the state, also has a role in delivering this merit good. The Irish government, over time, chose a privatisation mechanism for domestic waste collection for reasons of cost efficiency (Reeves and Barrow, 2000). This journey, and the overlapping of society's need to manage its waste with the private waste market's inevitable need to be profitable, underpins the economization of domestic waste collection.

As noted earlier, marketization is a form of economization which results in the establishment of markets. From the narrative above, it is reasonable to define the Irish domestic waste sector as being marketized. The gradual move to full privatisation allowed for consumers to choose (at least in larger urban areas) between various waste companies. In turn, these companies could offer prices to attract customers, but also had full control of the prices set. This resulted in the Irish government creating the PMG to ensure fair and transparent pricing of waste collection for consumers. The PMG as a price control mechanism is reflective of a rule/convention noted as being a characteristic of a market by Çalışkan and Callon (2010). There is also monetary compensation (waste collection charges) and arguably the PMG also reflects a peacefully determined pricing mechanism (Çalışkan and Callon, 2010, p.3). Thus, the criteria for a market as described by Çalışkan and Callon (2010) are met, and thus it is reasonable to describe the Irish domestic as being an instance of marketization.

Financialization as mentioned captures the increasing influence of financial motives, markets, actors and institutions on economies, both domestic and international (Epstein, 2005, p.3). As a concept it thus encapsulates economization and marketization, which has been noted above as

applicable to the Irish domestic waste context. Similar to the argument presented by Warren et al. (2018), it can be reasonably argued that financialization is also an appropriate term to apply to Irish domestic waste policy. The financial motives of waste operators are clear in that they are private for-profit firms - one of the larger waste operators (see earlier) has generated annual profits of around €22 million in the last four years (2018 - 2021). Such levels of profitability have attracted investment from the far side of the globe in the case of Beuparc Utilities, highlighting the international attention garnered by good levels of profitability.

In summary, the various twists and turns in Irish domestic waste policy over the years has resulted in a scenario where economic, market and financial forces are at play and highly visible. The resulting private firms are profitable, set prices at levels which are not seen as harsh due to monitoring and are subject to interest by international investors. In other words, the sector is financially sustainable, unlike some other utility services such as sanitation (Perard, 2018). At the same time, the policy changes over time have also resulted in an efficient waste management infrastructure encompassing EU waste policy requirements - although it has taken over 25 years to get to the present scenario. In this vein, longitudinal analyses of waste policy changes in other countries are to be welcomed. Of particular interest are explorations of how, why or whether the domestic waste market in other jurisdictions has become financialized, or not.

References

- Barrett, A., Lawlor, J. 1997. Questioning the waste hierarchy: the case of a region with a low population density. *Journal of Environmental Planning and Management* 40, 19-36.
- Barrett, A., Lawlor, J. 1995. *The economics of solid waste management in Ireland*. Policy Research Series 26, Dublin: Economic and Social Research Institute.
- Bartolacci, F., Paolini, A., Quaranta, A. G., Soverchia, M. 2018. Assessing factors that influence waste management financial sustainability. *Waste Management* 79, 571-579.
- Boyle, M. 2001. Cleaning up after the Celtic Tiger: the politics of waste management in the Irish republic. *Journal of the Scottish Association of Geography Teachers* 30, 71-91.
- Boyle, M. 2002. Cleaning up after the Celtic Tiger: scalar 'fixes' in the political ecology of Tiger economies. *Transactions of the Institute of British Geographers* 27, 111-125.
- Bresnihan, P., 2016. The bio-financialisation of Irish water: New advances in the neo-liberalization of vital services. *Utilities Policy* 40, 115-124.
- Çalışkan, K., Callon, M. 2009. Economization, part 1: shifting attention from the economy towards processes of economization. *Economy and Society* 38, 369-398.

- Çalışkan, K., Callon, M. 2010. Economization, part 2: a research programme for the study of markets. *Economy and Society* 39, 1-32.
- Callon, M., Muniesa, F. 2005. Economic Markets as Calculative Collective Devices. *Organization Studies* 26, 1229-1250.
- Curtis, J., Lyons, S., O'Callaghan-Platt, A. 2011. Managing household waste in Ireland: behavioural parameters and policy options. *Journal of Environmental Planning and Management* 54, 245-266.
- Dáil Éireann 2017. Official Report - 4 July 2017, 956
- Davies, A. 2007. A wasted opportunity? Civil society and waste management in Ireland. *Environmental Politics* 16, 52-72.
- Davies, A. 2003. Waste wars - public attitudes and the politics of place in waste management strategies. *Irish Geography* 36, 77-92.
- Davies, A., Fahy, F., Taylor, D. 2005. Mind the gap! Householder attitudes and actions towards waste in Ireland. *Irish Geography* 38, 151-168.
- Department of Environment 2012. A resource opportunity: waste management in Ireland, Dublin: Department of Environment, Community and Local Government.
- Dempsey, N. 1998. Waste Management - Changing our Ways, Dublin: Department of Environment and Local Government.
- Dijkgraaf, E., Gradus, R. H. 2004. Cost savings in unit-based pricing of household waste: The case of The Netherlands. *Resource and Energy Economics* 26, 353-371.
- Dunne, L., Convery, F., Convery, F. J., Gallagher, L. 2008. An investigation into waste charges in Ireland with emphasis on public acceptability. *Waste Management* 28, 2826-2834.
- Dunlap, R., Gallup Jr., G., Gallup, A. 1993. Global environmental concern: results from an international public opinion survey. *Environment* 35, 7-15.
- Eggerth, L. L. 2005. The evolving face of private sector participation in solid waste management. *Waste Management* 25, 229-230.
- EPA 2004. Waste Management - Taking Stock and Moving Forward. Wexford: Environmental Protection Agency.
- Epstein, G.A. 2005. Introduction: financialisation and the world economy, in Epstein, G.A. (Ed), *Financialisation and the World Economy*, Edward Elgar: Cheltenham, 3-16.
- Fagan, G. H. 2003. Sociological reflections on governing waste *Irish Journal of Sociology* 12, 67-84.
- Fagan, G. H., O'Hearn, D., McCann, G. Murray, M. 2001. Waste management strategy: a cross border perspective, Working Paper Series 2/2001, Maynooth: National University of Ireland.
- Government of Ireland 2002. Delivering Change: Preventing and Recycling waste, a policy statement, Dublin: The Stationery Office.
- Hood, C. 1991. A public management for all seasons? *Public Administration* 69, 3-19.
- Hood, C. 1995. The NPM in the 1980s: Variations on a Theme. *Accounting, Organizations and Society* 20, 2/3.

- Hopper, J.R., Nielsen, J.M. 1991. Recycling as altruistic behavior: normative and behavioural strategies to expand participation in a community recycling program, *Environment and Behavior* 23, 195–220.
- Husaini, I. G., Garg, A., Kim, K. H., Marchant, J., Pollard, S. J., Smith, R. 2007. European household waste management schemes: Their effectiveness and applicability in England, *Resources, Conservation and Recycling* 51, 248-263.
- Hyndman, N., Lapsley, I. 2016. New Public Management: The Story Continues. *Financial Accountability & Management* 32, 385-408.
- Irish Examiner 2021. Takeover of Greenstar and Panda owner set to lead to European expansion, June 1st.
- Irish Times 2016. Bin charges to be frozen for 12 months after FF backs deal, June 22nd.
- Jollands, S., Quinn, M. 2017. Politicising the sustaining of water supply in Ireland – the role of accounting concepts. *Accounting, Auditing and Accountability Journal* 30, 164-190.
- Liss, G. 2001. *Del Norte County: On the Road to Zero Waste*, Loomis, CA: Gary Liss and Associates.
- Lucato, W.C., Costa, E.M., de Oliveira Neto, G.C. 2017. The environmental performance of SMEs in the Brazilian textile industry and the relationship with their financial performance. *Journal of Environmental Management* 203, 550–556.
- Ma, J., Hipel, K. W. 2016. Exploring social dimensions of municipal solid waste management around the globe—A systematic literature review. *Waste Management* 56, 3-12.
- Minton, A.P., Rose, R.L. 1997. The effects of environmental concern on environmentally friendly consumer behaviour: an exploratory study. *Journal of Business Research* 40, 37–48.
- Perard, E. (2018). Economic and financial aspects of the sanitation challenge: A practitioner approach. *Utilities Policy*, 52, 22-26.
- Purcell, M., Magette, W. L. 2010. Attitudes and behaviour towards waste management in the Dublin, Ireland region. *Waste Management* 30, 1997-2006.
- Qi, G.Y., Zeng, S.X., Shi, J.J., Meng, X.H., Lin, H., Yang, Q.X., 2014. Revisiting the relationship between environmental and financial performance in Chinese industry. *Journal of Environmental Management* 145, 349–356.
- Quinn, M. and Feeney, O. 2020. Domestic waste policy in Ireland – economization and the role of accounting. *Accounting, Auditing & Accountability Journal*, 33, 2111-2138.
- Reeves, E., and Barrow, M. 2000, The impact of contracting out on the costs of refuse collection services: The case of Ireland. *Economic and Social Review* 31, 129-150.
- Reichenbach, J. 2008. Status and prospects of pay-as-you-throw in Europe—A review of pilot research and implementation studies, *Waste Management* 28, 2809-2814.
- Reschovsky, J. D., Stone, S. E. 1994. Market incentives to encourage household waste recycling: Paying for what you throw away. *Journal of Policy Analysis and Management* 13, 120-139.
- Scharff, C., Vogel, G. 1994. A comparison of collection systems in European cities. *Waste Management and Research* 12, 387-404.

- Stapleton, L., Lehane, M., Toner, P. 2000. Ireland's environment: a millennium report. Wexford: Environmental Protection Agency.
- Taylor, G. 2001. Conserving the emerald tiger: the politics of environmental regulation in Ireland. Galway: Arlen House.
- Warren, L., Seal, W. 2018. Using investment appraisal models in strategic negotiation: The cultural political economy of electricity generation. *Accounting, Organizations and Society*, 70, 16-32.
- Warren, L., Quinn, M., Kristandl, G. 2018. Investments in power generation in Great Britain c. 1960-2010: The role of accounting and the financialisation of investment decisions, *Qualitative Research in Accounting & Management* 15, 53-83.

