

Closing the Mine in Castlecomer: From Boom-to-Bust or From Bust-to-Boom?

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INTRODUCTION

Much of the resource dependency literature is based on the assumption that the material or physical resources exert considerable influence on forms of social organization and social well-being in a given locality. Nord and Luloff (1993) state that "...the sustenance base strongly influences social organization and thereby the dominant social and demographic characteristics of local societies" (p. 492). When introduced into market economies, extractable resources in an area require varying degrees of entrepreneurial initiative, capital investment, technological innovation, and social capital accumulation. Given historical and locational variation in each of these factors, researchers have attempted to describe processes of initial economic boom, diversification (or simplification) of linkages, overadaptation, cycles of boom and bust, and the final collapse of the extractive sector, in rural areas of the world. In generalizing these process, some provide evidence that resource extraction offers a viable road to rural development. More frequently however, researchers have concluded that extraction exerts a "pathological" influence on rural development. But, either way, most resource extraction research has focused on the dynamic interface between physical resources, capitalist markets, and social organization in rural locales.

What happens to these dynamics in extractive communities, however, when social organization is inherited from land tenure systems based in an earlier colonial past? Most of the resource extraction literature focuses on commodities located in rural peripheries. Resources draw people to the hinterland and extractive activities force emergent patterns of social organization. What happens, however, when patterns of social organization are well established before any extractive activities begin? Moreover, what happens in extractive communities where

the state exerts a strong influence on supply and demand in commodity markets through policy and regulation? Much of the literature focuses on large scale extraction that takes place in relatively open and global markets. What happens in communities where extractive activities are protected or even bolstered by one or more central state entities?

This paper will explore these questions by analyzing a case study of coal mining in Castlecomer, Co. Kilkenny, Ireland. Castlecomer supported a locally owned mining industry that, at its peak in the 1940s, produced nearly 200,000 tons of “smokeless” coal annually. But, falling demand and the exhaustion of existing shafts forced the closure of the mines by 1969. This study used time-series analysis to examine processes of community change in Castlecomer between 1930 and 2000. The assumption behind this analysis was that the specifics of Irish history - 800 years of British colonial rule and social organization, and a strong legacy of individual and corporate social welfare since independence in 1921 - may challenge generalizations in the literature about extractive economies in rural areas.

A FRONTIER METAPHOR?

There is a frontier metaphor that is implicit or explicit in much of the literature on resource extraction, where the focus is on how the organized economic activities of extraction transform the less organized peripheral regions of the globe. Innis’ classic study of Canadian economic history (1930, 1936) is explicitly a story about the exploitation of commodities such as fur, fish and timber in frontier development. Hirschman’s “linkage” approach (1958, 1977) elaborated Innis’ “staples” approach by specifying the processes of economic diversification, where business activity expands to service the needs of the extractive activity and business activity expands to process the outputs of the extractive activity. For example, Frickel and

Freudenburg (1996) cite the case of coal mining development in England, where 18th Century industry, which was powered by coal, was cited near the peripheral coal fields because the cost of transportation to urban developed areas was prohibitive. So early approaches to resource extraction recognized the competitive advantage in rural peripheries of abundant natural resources, and looked to extractive activities as the engine of positive economic and social development.

More recent research has been less optimistic about the ability of resource extraction to facilitate rural economic development, with many citing evidence for inherent pathological effects of resource dependency (Humphrey et al, 1993; Bunker, 1985; Freudenburg, 1992). Research on resource extraction that challenged classic development theory has focused on two primary lines of inquiry: 1) the dynamics of sudden growth or sudden collapse in boom-and-bust energy towns, and 2) the structural forces of extraction that produce poverty and perpetual underdevelopment. The boom/bust literature originally focused on boom towns in the Western U.S. that saw large scale energy investment and development following the oil crisis of 1973. Much of this literature developed in conjunction with social impact assessment methodologies, documenting the degree of social upheaval and disruption in community organization that occurred in these rapidly growing boomtowns (e.g., Kohrs, 1974; Gold, 1986; Gilmore & Duff, 1975; Freudenburg, 1986). In the 1980s, this literature followed Cottrell's (1951) lead in analyzing these same energy towns during their bust stages. These studies shifted the focus from community disruption to an analysis of political economic forces that reduced economic diversity (Weber et al, 1988) and produced overspecialized economies (Freudenburg &

Gramling, 1993), with limited local control (Cramer et al, 1993) and pathological dependence (Freudenburg, 1992).

A second line of research took the prevailing criticism of extractive economies a step further by arguing that resource extraction perpetuated poverty and local underdevelopment. The most comprehensive statement of this perspective came from Humphrey et al (1993) who outlined four theoretical frameworks for describing the pathological outcomes of extractive activity. They argued that extractive activities 1) encourage rational under-investment in labor development and human capital (Johnson et al, 1989), 2) require systems of domination aligned with capital and state control rather than local control (West, 1982), 3) lead to rural restructuring in a global context that solidifies advantages in the core regions (Bunker, 1989), and 4) marginalize local choice by subjecting local resource decisions to the value claims of broader public discourse (Freudenburg et al, 1995). Bunker (1985, 1989) extends this critique by directly taking on Hirschman's notion of linkages. Instead of encouraging the development of forward and backward linkages, resource extraction activities created conditions of environmental and social impoverishment in the Brazilian Amazon that Bunker argues has produced perpetual underdevelopment.

Not all of the recent literature on resource extraction has been so pessimistic (Overdevest & Green, 1995). A number of studies have elaborated the conditions under which resource extractive activities can have positive effects on community well-being. For example, Nord and Luloff (1993) showed how different extractive activities (oil vs. coal) and different regions of the United States can produce different and sometimes positive outcomes for community well-being. Bailey & Pomeroy (1996) showed how extraction in a tropical region of Southeast Asia can produce diverse economies for community members. Other studies have analyzed the effects of

time (Freudenburg & Frickel, 1994; Frickel & Freudenburg, 1996) and place (Fisher, 2001; Bailey & Pomeroy, 1996) and have shown that generalizations are not easily forthcoming because of temporal and spatial contingencies. For example, Frickel & Freudenburg (1996) argue that the historical context of resource extraction can demonstrate considerable variation in 1) extractive capacity and technological innovation, 2) degrees of competition and globalization pressures, 3) pressures toward overadaptation, and 4) the sophistication of transportation systems. More recently, Smith et al (2001) analyzed the process of recovery among former western U.S. boomtowns after the bust, and showed a strong and consistent resiliency in social well-being indicators once the boom-time disruptions had past.

Overall, this most recent research reflects a growing maturation of knowledge about resource extraction. Extraction is not generally good or generally bad. It's positive or negative effect on rural communities are contingent on a variety of contexts. Nevertheless, in almost every case cited above, researchers focus on resource extraction in areas that lie at the physical periphery of modern systems of economic and social organization. And their analyses focus on the mechanisms of extractive economies that enhance or inhibit the chances that these marginalized rural residents can join in the collective benefits of modern social organization. Alternatively, the current study explores resource extraction in a context where mining activity takes place in a well-established system of social organization, and in a context where the state has been a strong advocate for rural self-sufficiency.

LAND TENURE AND THE STATE IN AN IRISH COAL-MINING COMMUNITY

The Landlord System

Twentieth century coal mining in Ireland may offer the resource extraction literature a unique case study because of the country's colonial history, its 20th Century political and economic isolation, and its strong tradition of social welfare from a powerful central government bureaucracy. Coal mining in Castlecomer, in many ways, is consistent with a tradition of land tenure that began in the 1600s. The lands adjacent to Castlecomer in nearby County Laois were among the first in Ireland to be subjected to the British plantation movement. In his effort to extend the British Pale around Dublin, Henry VIII began awarding large tracts of land in Ireland to the British gentry who cleared the land, built large estate homes, and worked to develop large scale agricultural enterprises, whose products were most often exported back to England. The resident Irish provided the labor for these agricultural enterprises. All their claims to land were dissolved and they were forced into a sometimes oppressive system of tenancy, growing crops in exchange for the landlord's rent and with the constant threat of eviction if the twice annual rent payments were not met.

This landlord system came to Castlecomer in the mid 1600s when the Wandesford family from Yorkshire was awarded over 20,000 acres of land in the Brennan territory of the Idough (Lyng, 1984). In addition to the Wandesford's plantation efforts, they also immediately began mining operations in the region, using the coal to power their iron making enterprises. Thus, tenants who were coal miners, sheep farmers, or barley farmers on the Wandesford estate would exchange their output in coal, wool, or grain for rent payments. This pattern of land tenure in Castlecomer persisted well into the 20th century, even though the landlord system in most of Ireland died out in the late 1800s. One life-long resident of Castlecomer told me that her father

made rent payments to the Wandesford family for most of his life, and was not allowed to buy the property until the early 1950s.

The landlord system in Ireland played an insidious, yet crucial role in Irish history. Many blame this land tenure system for the severity, if not the cause of the Irish Famine. Stories are common about how unscrupulous landlords used the famine to clear their holdings of “surplus” tenants by purchasing passage to America or Canada on the “death ships,” or by eviction and destruction of family homes by the local “yoemanry.” The ensuing Irish diaspora started Ireland down the road toward home rule and independence. But, it was Charles Stuart Parnell’s Land League that initially pressed the British Parliament for land reform legislation in the late 1800s that legalized land ownership by Irish Catholics. The rise of Irish landowners in the last two decades of the 19th century led to a quick demise of British owned agricultural estates. It also produced a strong sense of Irish nationalism that finally threw off the yoke of British colonialism in 1921.

That the vestiges of this landlord system in Castlecomer lasted until the mid 20th Century is a curious phenomenon. Did coal mining perpetuate this system of social organization? In agricultural regions of Ireland, former tenants could purchase their land, withdraw from the economic linkages provided by the landlord, and still survive by farming in family or extended family groups. But, to remain a coal miner, one needed the resources and technologies provided by the landlord. In other words, 20th Century coal mining required the type of large scale capital that, in Ireland in the early 1900s, could only be offered by the estate families. In Castlecomer, this 20th century investment in mining technologies, however, probably never produced an

economic boom. And given the prolonged landlord system of land tenure, coal mining may have contributed to a delay in social progress.

The New Irish State

The emergence of the new Irish state following home rule in 1921 and independence in 1939 may also have had an effect on the history of coal mining in Castlecomer. Eamon de Valera was the most prominent figure in Irish politics during the first 40 years of Irish independence. His Fianna Fail party held power through most of the years of home rule, and when Ireland gained its independence from England, de Valera was elected as Ireland's first Taoiseach (prime minister). De Valera was a strong advocate for rural Ireland, having grown up in rural poverty in County Limerick. His vision for the country was based on self-sufficiency and he looked to the rural agricultural laborer as providing the backbone of his development policies (Ardagh, 1995). The positive side of his "frugal comfort" agrarian-based development policies was that he developed a strong system of social welfare to help maintain a certain standard of living for all Irish citizens. The negative side of de Valera's development policies was that they were inherently anti-industrial. His protectionist trade policies placed stiff tariffs on imported goods, which stifled competition and technology transfer and thus limited Ireland's ability to compete in an open European market (c.f., Frickel & Freudenburg, 1996). During this time, the bulk of agricultural exports continued to flow to England as they had for generations before. In short, his development policies were isolationist and probably served to retard Ireland's development potential during the middle decades of the 20th Century.

Coal mining in Castlecomer under this type of development policy thrived. The Castlecomer collieries reach their peak of productive output in the 1940s generating nearly

100,000 tons of coal annually at the largest of its mines, the Deerpark mine. This volume of output was relatively small compared to some English coal mines during the same era.

Nevertheless, the Castlecomer mines were protected from most English or European competition and were free to produce coal for the Irish home heating market and to sell coal to power emerging Irish industry. It is likely that, along with the Arigna mine in County Leitrim, the Castlecomer mine was key components of de Valera's policy of indigenous industrial development, thereby maintaining close ties with central government resources.

When de Valera stepped down as Taoiseach in 1959, he was replaced by Sean Lemass, whose development policies were in direct opposition to de Valera's. Lemass lifted trade barriers and encouraged Irish businesses to redirect their focus outside of Ireland and beyond England. Early during his administration, he made application for Ireland to join the European Union. And, his policies encouraged an aggressive approach to industrial development based on European competitiveness (Ardagh, 1995). The state became highly visible as a booster of Irish industry, providing numerous tax incentive schemes for business investment, business incubator programs, and increased access to investment capital for entrepreneurial activities. In short, he advocated a planned approach to economic development that successfully brought Ireland out of the European periphery and onto the playing field of modern European and global economies.

The Lemass administration corresponded with the time in Castlecomer when the mine struggled for survival. There was a temporary 1-month closure in 1963, and another 3-month closure in 1965 before the permanent closure in 1969, with significant redundancies (lay-offs) after each event. Most accounts of the 1969 closure attribute the cause to the increasing use of oil for home heating and industrial power (Walsh & Walsh, 1999). More importantly, however, it

could be that coal mining in Castlecomer, which was based on older systems of land tenure and social organization, could not be sustained by the social and political transformations in Ireland brought on by the Lemass economic reforms.

If these historical conditions of land tenure and state development did influence coal mining development in Ireland, one would expect that the generalizations about resource dependent communities might not apply to Castlecomer. Was the town disadvantaged by its distance from markets? In Ireland this is generally not the case for many towns. Nevertheless, Castlecomer was not located in a geographic periphery, situated just 12 miles north of one of the oldest and most important historical cities in Ireland: Kilkenny. Was there a major social upheaval in Castlecomer caused by coal extraction (Cramer et al, 1993)? Chances are the plantation of the region by British landlords produced a far more profound social upheaval than did the introduction of coal mining. Was Castlecomer ever a boomtown, and did it experience a bust after the mine closed (Smith et al, 2001)? Or did a proactive state provide employment alternatives during times of redundancy? Did the town over-adapt to mid-20th Century technological and industrial mechanisms (Freudenburg, 1992), making it unable to adapt to post-industrial market conditions, and producing a prolonged condition of underdevelopment (Bunker, 1989)? Or did coal mining perpetuate a dying system of land tenure and social organization, where, once it was discarded, Castlecomer was in a better position to join the 20th Century? To explore some of these questions, this study used time-series analysis to investigate change in Castlecomer's business structure and social well-being for a 70-year period between 1930 and 2000.

METHODS

Data Sources

The primary source of data for this analysis was an inventory of commercial businesses in Castlecomer drawn from two sources: Thom's Commercial Directory and MacDonald's Irish Directory and Gazetteer, which both provided annual lists of businesses in the town. The literature on resource extraction argues that there is a direct correlation between the fortunes of the mine and the retail structure of the town (Luloff, 1990; Machlis et al, 1990). So the study used retail structure as an indicator of community vitality in Castlecomer. The data consisted of the list of business names in Castlecomer for each year between 1930 and 2000, with an annual tally of the total number of businesses in Castlecomer, and annual tallies subdivided into business sectors: agricultural, building, transportation, industry, food and beverage, household goods/general retail, and professional services.

Two sources were required to maintain a continuous trend. Thom's Commercial Directory began publishing inventories on selected Irish towns in 1927 and printed an annual publication through 1958. The original publisher sold the business to another company in 1960, but the new company published a directory sporadically through the 1960s and early 1970s: in 1961, 1964, 1966, 1968, 1969, 1970, 1972, and then yearly beginning in 1974. In the meantime, MacDonald's Irish Directory and Gazetteer published an annual directory from 1952 through 1970. Between the two sources, one could piece together the years in which business start-ups, business transfers, and business failures occurred.

Data were collected from 1930 through 2000 for two reasons. First, data beginning in 1930 covers most of the 45-year history of the Deerpark mine, the largest of the handful of mines

owned by Castlecomer Collieries, which began operation in 1924 and closed in 1969. This single mine produced more than double the output of the other less viable mines in the region: mines at Coolbawn, Clogh, Skehana, Fiorda, Gurteen, etc. None of these other mines survived into the 1960s. So the selected time-frame offers data that reflect the time of highest output in the late 1930s and 1940s, when the Collieries employed nearly 1000 people, to the time of decline when the Collieries gradually reduced their number of employees to 190 in the late 1960s. Second, this time series also provided data about how Castlecomer adjusted to the mine closure in 1969. What was the transition period like in the 1970s and 1980s, and how did Castlecomer reinvent its town's economy and identity?

The study also used supplemental indicators of community well-being including census data (with net migration figures), live-register data (social welfare, or "the dole"), and vital statistics (births, deaths, marriages, and infant ratio) for County Kilkenny. These time-series however were less reliable and less important to the analysis. Census data is collect roughly every 5th year and does not provide annual indicators. Social welfare laws have gone through a series of changes, so the number of people who are eligible for social welfare benefits has changed at least twice in the last 30 years. And vital statistics records only go back to 1956.

Analysis

Time-series analysis is a statistical method for identifying systematic patterns of trend and causality among variables observed over time (McCleary and Hay 1980). To model a time-series, a univariate model is first constructed to identify trends and account for 'unexplained variance' in each time series. This univariate *Auto Regressive Integrative Moving Average* (ARIMA) modeling process identifies significant ordered processes inherent in a time-series

variable and produces smoothed values, whose trend is characterized as "white noise." These "de-trended," or "pre-whitened" values may be derived from the residuals of the ARIMA model. If necessary, they may alternately come from various transformation techniques where no trends are present in a variable (ARIMA 0,0,0).

The smoothed variables are then incorporated into a multivariate model to explore systematic lags between variables and to establish causality between time-series processes. This process begins with cross-correlation analysis to determine if statistically significant lags exist between dependent and independent variables. Next, autoregression is used to determine causality between variables. A number of models are tested using various pre-whitened variables or smoothed transformations. The best fitting model is one where the Log Likelihood statistic is minimized, and the residuals of the model are white noise as shown by an insignificant Q-statistic (McCleary and Hay 1980). The residuals also must be independent and not significant at key lag times. The dependent variables in this study were the business structure trends and the live register trends. The independent variables included the industry trend, a dummy variable trend where '1' represented the years the mine was open, and '0' represented the years the mine was closed, and a dummy variable trend where '0' represented the pre-Lemass years, and '1' represented the post-Lemass economic reform years.

Limitations

Collecting community data in Ireland is a major challenge. The pervasive role of central government in Irish affairs has made community level data scarce. The influence of local town councils and planning boards is variable, and their decisions are often non-binding, giving way to county level governance, which is closely tied to central government resources and policies. So

the perceived need for consistent and long term monitoring of community level indicators has been low. There is community level data in the Irish census, but the Central Statistics Office guards this closely, and I was never able to crack the CSO “fortress” to access this information. Nevertheless, they could not have provided annual trend information. Finding long-term trends based on annual data is therefore a bit of a creative endeavor, and the indicators in this study offer only a partial measure of community well-being.

Similarly, Thom’s Commercial Directory and MacDonald’s Irish Directory and Gazetteer contain measurement error. When comparing their lists with selected phone directories, they are not comprehensive directories. And in the years that they overlapped, their lists were noticeably different. Yet, across each year in the trend, one can assume that the measurement error was normally distributed - similar selection decisions were at work that led to inclusion or exclusion from the published lists. This assumption may not hold for the overlap years in the 1960s. So in tabulating the lists during the 1960s, I used the Thom’s directories as the final arbiter of selection, since Thom’s provided the longest trends. I included businesses first listed in the pre-1959 Thom’s directories and continued in the 1960s MacDonald’s directories, or businesses first listed in the 1960s MacDonald’s directory and continued in the post-1970s Thom’s directories. I excluded, however, those businesses only listed in the MacDonald’s directories and that were never listed in either the pre-1959 or post-1970 Thom’s directories.

RESULTS

Boom and Bust?

When plotting the trends, the data do not tell a story of boom and bust in Castlecomer. While no data exists on the business structure for Castlecomer before the Deerpark mine opened,

Figure 1 shows that there was modest growth in the total number of businesses from 1930 to 1960. Businesses increased from a low of 51 in 1935 to a high of 73 in 1960, showing the bulk of its increase during the mid 1940s and early 1950s just after coal output was at its peak. But as the mine struggled for survival in the 1960s and the town residents experienced progressive redundancies, the number of businesses in the town increased from 69 in 1960 to 89 in 1969. There was a slight decline in businesses after the mine closed in 1970, but this had rebounded by 1975. For the next 20 years, there was a gradual and steady decline in Castlecomer businesses from 88 in 1975 to 72 in 1994. This was followed by a rebound in the late 1990s probably corresponding to the “Celtic Tiger” economic boom in Ireland. This trend was best characterized by an ARIMA 1,0,0 model.

General retail businesses in Castlecomer - the pubs, the butchers, the grocers, and the type of shops that supply everyday household needs - make up the majority of businesses in most Irish rural towns, even in the 1990s. Figure 2 shows that these types of businesses also did not reflect a clear boom and bust cycle that followed the closure of the mine. Both sectors of retail were stable in the 1930s, showed modest growth in the 1940s when mine output was at its peak, and stability in 1950s. While the number of household goods businesses declined in the early 1960s, both sectors spiked in the late 1960s. And, both showed declines in 1970 after the mine closed, with modest rebounds by the mid 1970s. For both sectors, the general trend starting in the 1980s was down, possibly reflecting the rise of larger department stores and grocery outlets (e.g., Dunne’s Stores and Tesco in Kilkenny). There were 37 food and beverage businesses and 30 household goods businesses in Castlecomer in the early 1980s. This had declined to 25 food/beverage and 23 household goods businesses by 2000 - a decline of 19 businesses in 17

years. The food and beverage trend was best represented by an ARIMA 1,0,4 model, while the household goods trend was best represented by an ARIMA 1,0,0 model.

Several of the other business sectors in Castlecomer show the opposite effect of a bust cycle following the mine closure. The closure of the mine appears to have stimulated increased business activity in the agricultural sector (Figure 3), the building sector (Figure 4) and the industry sector (Figure 5). For nearly 35 years from 1930 to 1964, the Castlecomer Cooperative was the only agriculturally based business in town selling farming supplies and buying milk from small dairy farms in the region. Beginning in the 1960s, Castlecomer added a butter manufacturer, a farm building manufacturer, poultry and egg merchants, seed merchants, and timber merchants. This increase in agricultural activity persisted for another 30 years until 1995. Today all that is left is the Castlecomer Cooperative, now owned by Glanbia, a multinational food and dairy products company. Because there was so little variation through the first half of this trend, it was best characterized by an ARIMA 1,0,4 model.

The trend in builders and contractors (Figure 4) is similar to the trend in agricultural products. For 30 years, between 1935 and 1965, there were 2 to 3 contractors in Castlecomer. This number increased to 9 in the early 1970s, and as many as 10 by 1980, dropping to half a dozen in the 1990s. This growth in builders probably corresponded to the growth in industry (Figure 5) in Castlecomer beginning in the late 1960s. Between 1930 and 1968, Castlecomer was a single-industry town, where Castlecomer Collieries was the only large employer in town. When the mine closed, replacement industry opened almost immediately: Roadmaster Caravans, Comer International, Kilkenny Engineering Products, Building Systems Ltd., a medical products manufacturer, several small scale open-cast coal mining operations, several quarries that provided materials for what today is Ormonde Brick manufacturer. Today, Castlecomer still

supports Comer International, Ormonde Brick, and a steel fabrication business, which together provide employment for as many as 400 people. The builder trend and the industry trend were both represented by an ARIMA 1,0,2 model.

The number of professional services in Castlecomer (real estate agents, lawyers, insurance agents, etc.) showed two prominent spikes in its 70-year trend (Figure 6). The number of professional services more than doubled between the late 1950s and the late 1960s, falling off after the mine closure and diminishing until the mid 1980s. The number doubled again between 1985 and 1999, possibly reflecting Ireland's economic boom and modernization. The trend in transportation services (coach builders, cycle dealers, auto mechanics, taxi services, etc.) varied little over the years (Figure 7). Castlecomer typically supported 5 to 9 businesses that serviced the areas transportation needs. Despite the miner's heavy reliance on bicycles to get them to and from the Deerpark mine, the closure of the mine did not affect the number of transportation businesses in Castlecomer. Both the professional services and transportation services were best characterized by an ARIMA 1,0,0 model.

Finally, the Live Register statistics (social welfare payments) for Castlecomer perhaps show the only measure that was clearly related to the fortunes of the mine (Figure 8). Between 1937 (when records were first available) and 1964, the number of recipients ranged between 28 and 147 people. The lowest numbers came during the 1940s when coal production was at its peak and the Castlecomer Collieries employed close to 1000 people. There was a significant spike during the 11-month strike in 1949, another spike in 1954, a small increase corresponding to temporary closure and redundancies in 1963, a larger spike during the 3-month closure and redundancies in 1965, and another spike in 1969 and 1970 following the final closure of the

mine. By 1974, however, the number of people had almost returned to pre-1969 levels. Increases in the late 1970s and again in the early 1980s correspond to changes in the Live Register eligibility laws. The office that made Live Register payments was transferred to Kilkenny in 1992. This trend was best represented by an ARIMA 1,0,0 model.

Mine Closure or Economic Reform?

Using the residuals from the ARIMA models as the pre-whitened trends, cross-correlation analysis and autoregression were then used to model systematic relationships between mine closure, economic reform, and industrial development as the independent variables, and Castlecomer business structure as the dependent variables. Table 1 shows the results from the cross-correlation analysis where industrial development (the number of industries) was the leading indicator. This Table shows evidence that the increase in industrial activity in Castlecomer led to an increase in other retail services. An increase in the number of industries led to the systematic increase in total business both 2 and 4 years later. Agricultural services increased simultaneously (0-year lag) with industrial development, and increased 2 years later as well. There was also a simultaneous increase in builders and contractors as industry increase. Building manufacturing facilities requires local sub-contractors. There was a 6-year lag in increases in transportation services and a 4-year lag in increases in food and beverage services that followed industrial development. Finally, increases in household services led increases in industry by 2 years. Cross-correlations between mine closure and retail services and between economic reform and retail services were not run because it is inappropriate to use dummy variables in this type of analysis.

The cross-correlation analysis showed that industrial development did have an effect on the number of businesses in Castlecomer. Did the closing of the mine have an effect? Table 2 shows the results from the autoregression. This table confirms that increases in the number of industries was related to increases in agricultural services (Beta=.13) and increases in builders and contractors (Beta=.49). Roughly 6 new industries were associated with 1 new agricultural business, and 2 new industries were associated with 1 new contractor in Castlecomer. Increases in industry were also associated with increases in total businesses in the town, but this relationship was significant only at the .12 level. Table 2 does show some negative effect of mine closure on the town. Food and beverage businesses were negatively effected by the mine closure (B=-.59), and live register recipients increased from the redundancies (Beta=31.9). However, there was a positive effect of mine closure on the number of builders and contractors (Beta=.24), though the relationship is significant only at the .16 level and is probably an artifact of the increase in industry around the time of the closure. Finally, the autoregression results show a positive relationship between the onset of economic reforms beginning with the Lemass administration and the business structure in Castlecomer. There was a positive effect of reform on industrial development in Castlecomer (Beta=.39). There was also a positive effect of economic reform on agricultural services (Beta=.15), builders and contractors (Beta=.29), and professional services (Beta=.39) although the significance levels are marginal. There was also a positive effect of economic reform on Live Register recipients (Beta=33.8), although this may be an artifact of mine closure during the reform era, and changes in social welfare laws.

DISCUSSION

There is a small monument in the cemetery at Moneenroe, a small village on the fringes of Castlecomer where many miners lived, that reads “To the MEMORY of all who died through Famine or serious social deprivation and all laid to rest here over seven centuries.” It is common to find famine memorials in Irish graveyards, but it much less common to find overtones of outrage at the social conditions imposed on the country’s rural residents. Moneenroe was home to Nicholas Boran, a professed communist and union organizer in the Castlecomer mines. “Nixie” spent more than 30 years of his life working to improve the conditions of workers in the mine. And while current day accounts suggest that the miners’ wages were probably a bit better than the average Castlecomer resident because of his efforts, it came at a cost of health and safety. Most of the men in the Moneenroe cemetery rarely survived past 65, while their wives typically lived another 10 to 15 years. So the data and the anecdotes do not support the boomtown metaphor in Castlecomer. While it supported a way of life that today is being idealized by the community, it did not appear to bring a degree of relative wealth and prosperity to the area. Instead coal mining maintained a status quo with only modest improvements over the time frame of this study.

Closing the Deerpark mine in Castlecomer also did not lead to an economic bust in the town. Neither is there much evidence for overadaptation to a mining economy. The untold story behind the results of the data analysis is the role of central Irish government in Castlecomer’s economic recovery. Like any underground mining operation, the distance from extractable resource to surface constantly increases as miners chip away at the outer fringes of the seam. This requires increasing investments in machines and hardware to transport the coal and to keep the tunnels clear of water. By the 1950s, this problem at Deerpark was becoming acute as the

farthest point of the mine from the opening was approaching 4 miles. The Irish government was a ready source of help as the economics of diminishing profits became a factor. Grants, bonded loans, and tax incentives on investment were consistent with de Valera's policies of encouraging indigenous business development.

With Lemass, the policy of propping up failing Irish businesses changed, but, in its place was a plan for new liberalized economic development projects. The government may have seen the writing on the wall for the Castlecomer Collieries, but in its place, they actively facilitated investment in new replacement industries in Castlecomer. As the mine was failing, the region was declared a "distressed" region, which provided significant tax incentives and government support for new industrial development. More importantly, one of the cabinet ministers in the Fianna Fail government was a Castlecomer resident, and shepherded several industrial development projects through the approval process. The result was that was an almost seamless transformation from coal mining to alternative industrial options. The Deerpark mine closed its operations on January 31, 1969. Comer International opened its doors on May 30, 1969, initially employing 53 people. Roadmaster Caravans followed within the year, and other industries came along shortly after in the early 1970s. So while there was a slight reaction to the mine closure among Castlecomer businesses (the loss of roughly 10 businesses), the ensuing industrial development made the town an even more viable place to operate businesses that serviced to the needs of the rural community.

Census statistics also provide evidence against a bust economy in Castlecomer. Between 1961 and 1966 when the mine was first struggling, Castlecomer's population increased from 1129 people to 1214 people. This represented an annual increase of 1.5%, while the population

in Co. Kilkenny was decreasing at an annual rate of 0.4%. Between 1966 and 1971, Castlecomer's population increased slightly from 1214 people to 1239, which was an annual rate of increase of 0.4% (compared to Co. Kilkenny's 0.3%). Finally, in the 1970s, Castlecomer's population increased from 1239 people to 1548 people. This was a 2.5% annual rate of increase during the 10 years, as compared with Co. Kilkenny's 1.2% annual rate of increase. These data provide further evidence that Castlecomer was not marginalized by the struggles and the closure of the Deerpark mine. While emigration did occur, at no time during these two decades did Castlecomer decline in population.

This is not to suggest that the transition in the 1970s was easy. I asked one resident of Castlecomer, who had worked 10 years in the mine, how long it took for the town to recover from the mine closure. He said the town had pretty well recovered by 1980. He described a story of transition that does not appear in the data. Many of the older miners (in their late 50s or early 60s), who were laid off, died within 5 to 10 years of the mine closure. And, indeed, as many as 1 in 10 of the grave stones in the Moneenroe cemetery showed men who had died in the early 1970s. He also claimed that not many of the miners (perhaps 1 in 4) were employed by the new industry that located in Castlecomer. Many were left to find employment by commuting to Kilkenny or even Dublin, and others simply moved their families to new places of employment. So there is some evidence in these anecdotes for a degree of overadaptation in Castlecomer resident's labor skills.

Today, Castlecomer is no longer a resource dependent community. There are few miners left, the facilities at the mine are in ruins, and the memories are fading. With strong advocacy and support from the Irish government, the transition from mining dependence to industrial diversification was rapid if not relatively smooth. Today many more people live in Castlecomer

without any connection to the town's mining past. There is even a housing boom, where a developer is attracting people who cannot afford Dublin real estate, and who are willing to make the 75-minute commute. It is apparent from the town's appearance that it is sharing in the benefits of the recent "Celtic Tiger," and that it is a full participant in the modernization of Ireland. If there was a pathological effect of resource dependency in Castlecomer, it probably existed while the mine was operating. And while one cannot minimize the individual suffering that occurred when the mine closed, proactive state intervention eased the transition in Castlecomer and set it on the path of a more diversified local economy.

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Table 1. Cross-correlation analysis where Castlecomer's trend in industrial development is the leading indicator, and retail structure and live register recipients are the dependent variables.

Industrial Development – Leading Indicator	
Dependent Variable	Lag in Years (p < .05)
Total Businesses	2 and 4 years
Agricultural Services	0 and 2 years
Builders and Contractors	0 years
Professional Services	Ns
Transportation Services	6 years
Food and Beverages	4 years
Household Goods	-2 years
Live Register	Ns

Table 2. Autoregression results examining the effects of industrial development, mine closure, and national economic reforms on the business structure and live register recipients in Castlecomer.

Independent Variables	Industrial Development	Total Businesses	Agricultural Services	Builders and Contractors	Professional Services	Transport Services	Food and Beverages	Household Goods	Live Register
Industrial Development	--	.60 (.39) p = .12	.13 (.05) p = .01	.49 (.08) p < .001	Ns	Ns	Ns	Ns	Ns
Closing the Deerpark Mine	Ns	Ns	Ns	.24 (.17) p = .16	Ns	Ns	-.59 (.27) p = .03	Ns	31.9 (16.2) p = .05
National Economic Reform	.39 (.21) p = .06	Ns	.15 (.10) p = .15	.29 (.17) p = .10	.39 (.22) p = .07	Ns	Ns	Ns	33.8 (15.8) p = .03

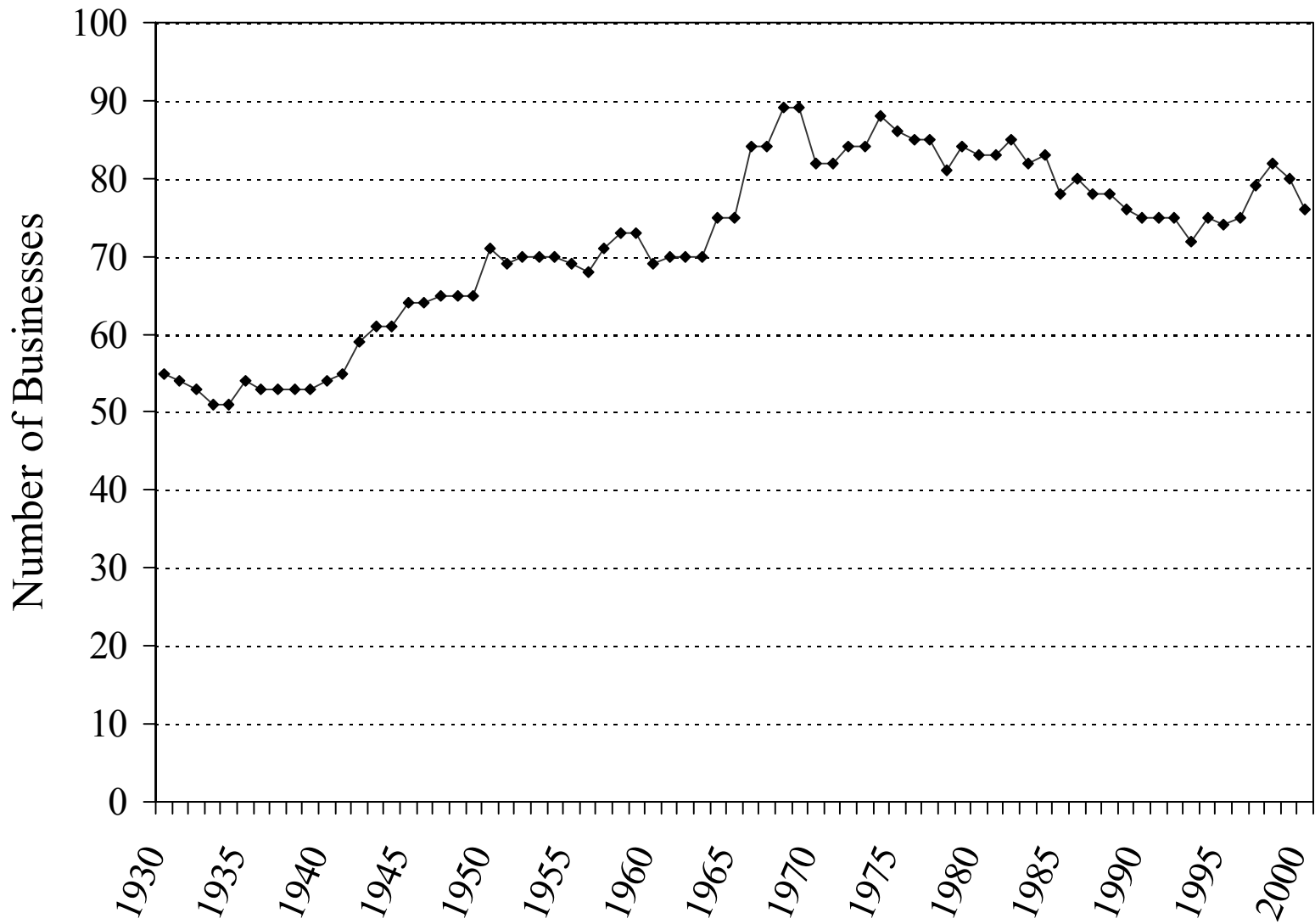


Figure 1. The total number of businesses in Castlecomer between 1930 and 2000. (ARIMA 1,0,0)

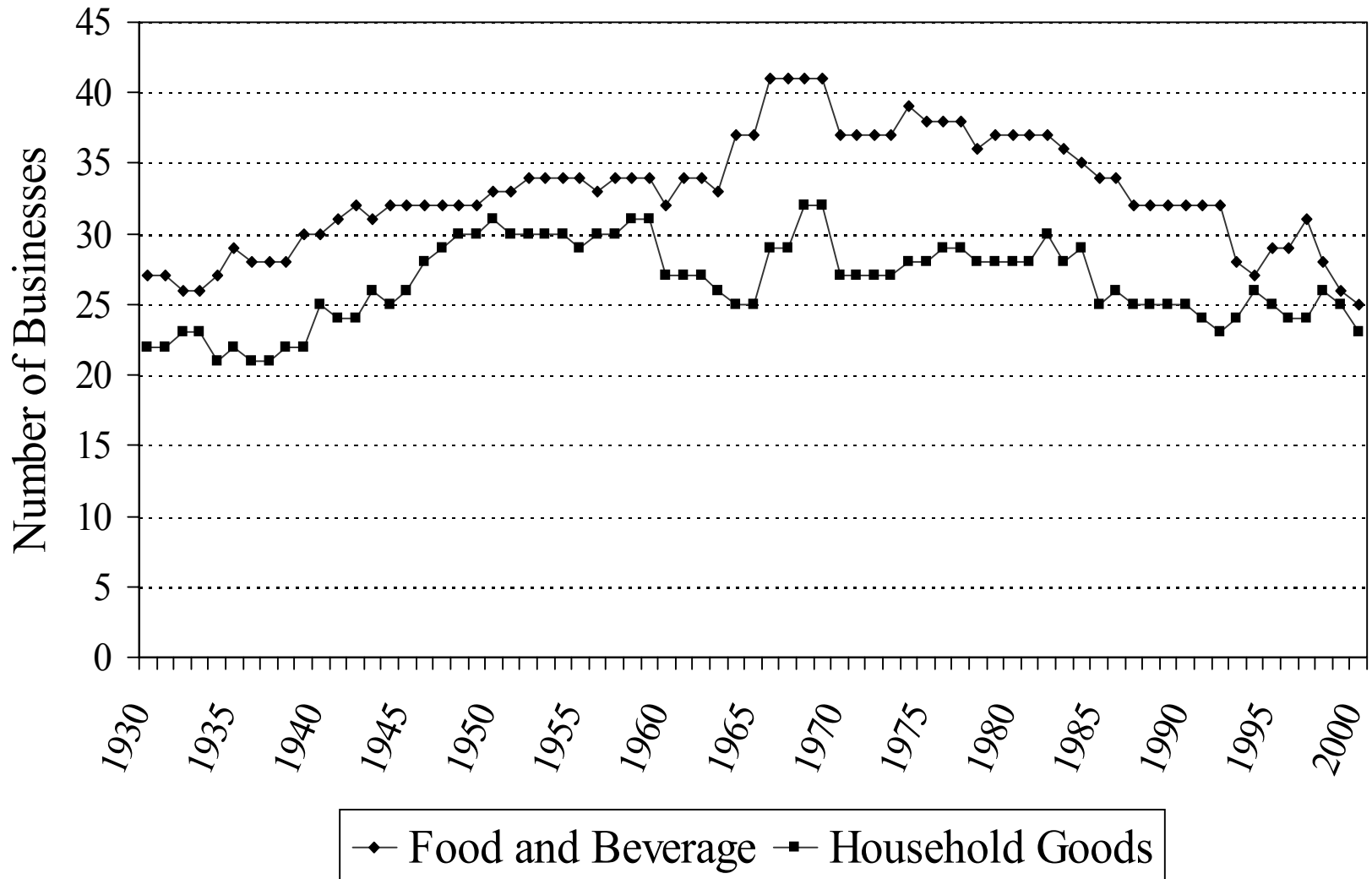


Figure 2. Number of food and beverage businesses (ARIMA 1,0,4) and household goods businesses (ARIMA 1,0,0) in Castlecomer between 1930 and 2000.

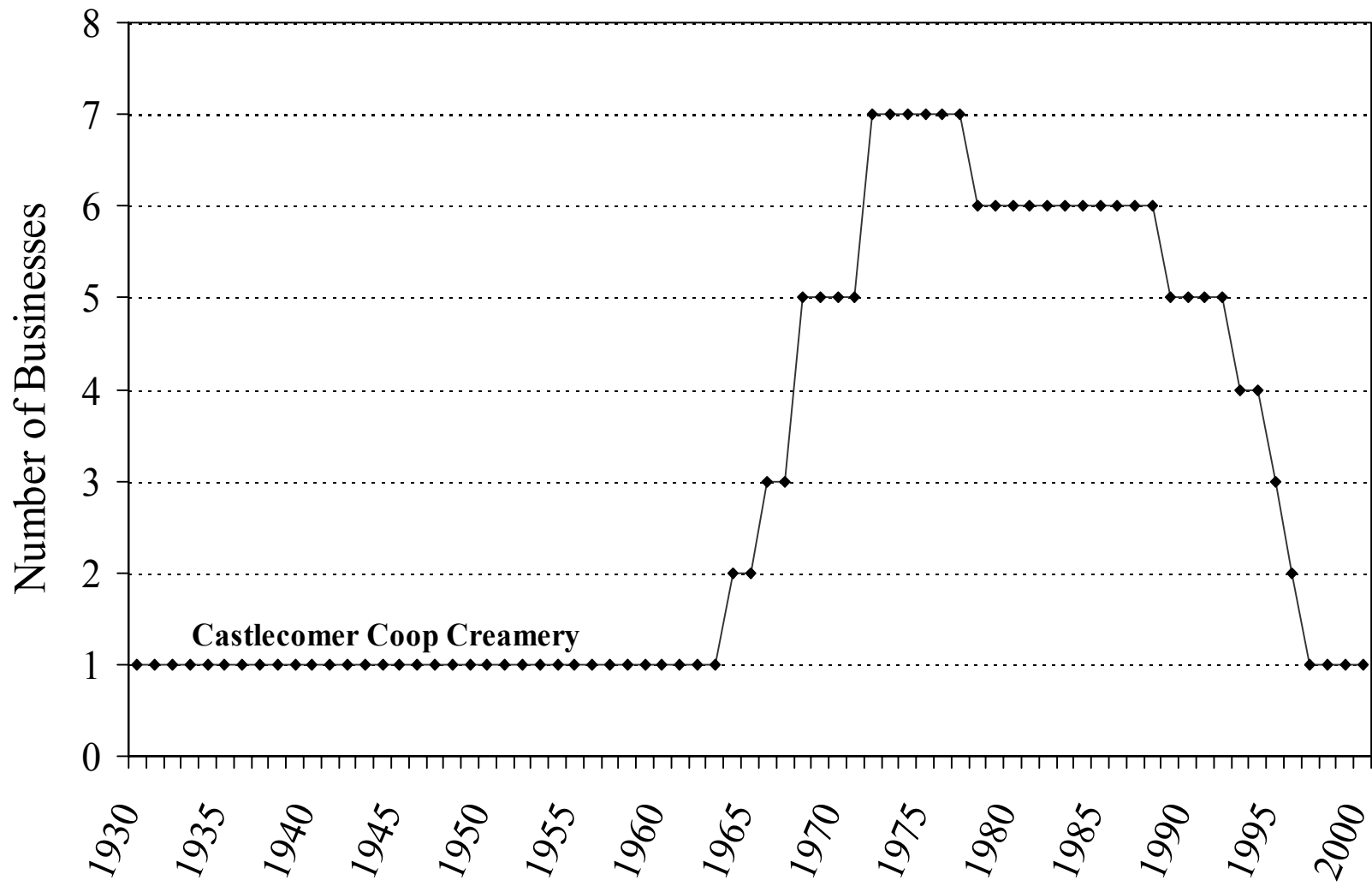


Figure 3. Number of agricultural service businesses in Castlecomer between 1930 and 2000. (ARIMA 1,0,4)

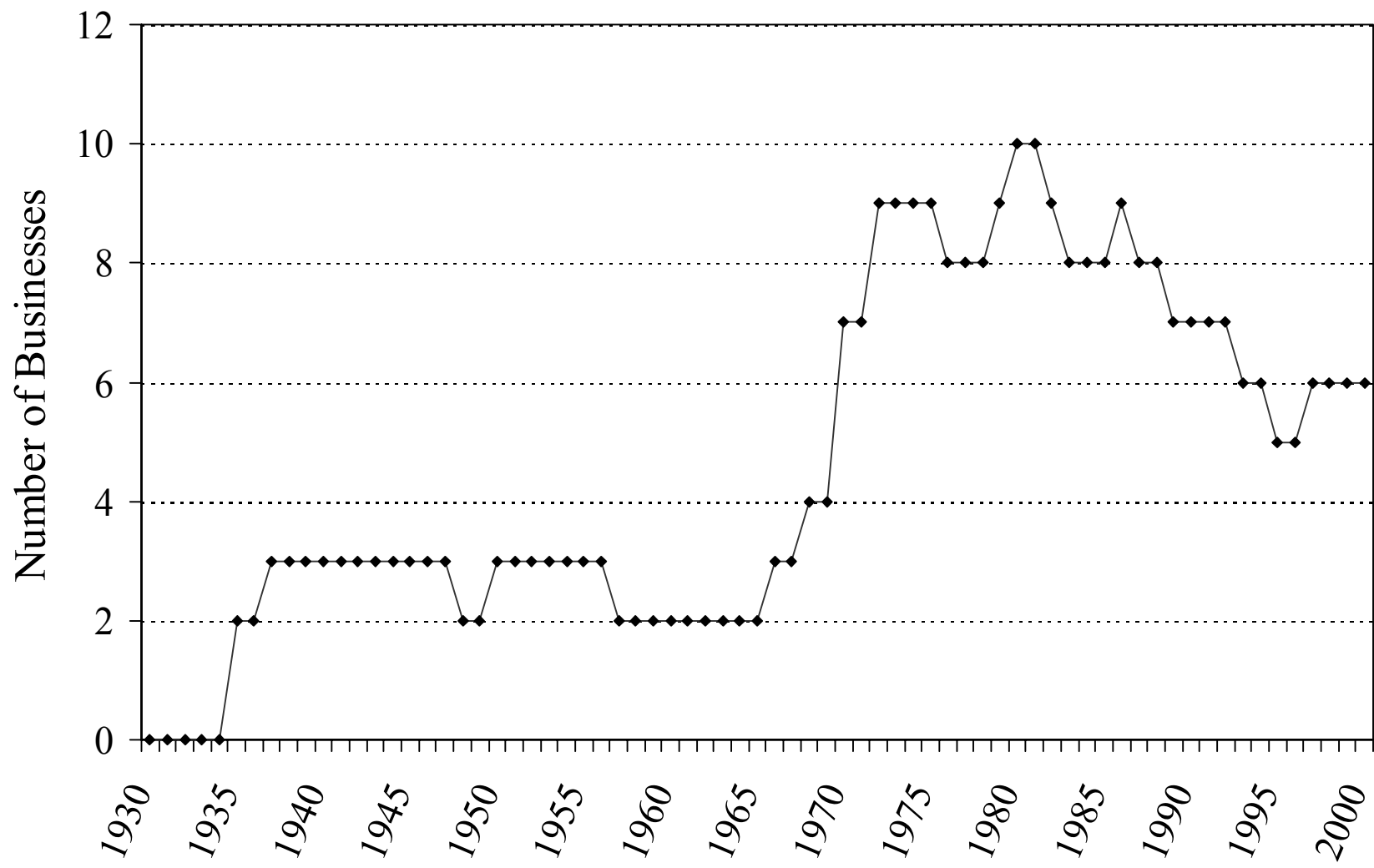


Figure 4. Number of builders and contractors in Castlecomer between 1930 and 2000. (ARIMA 1,0,2)

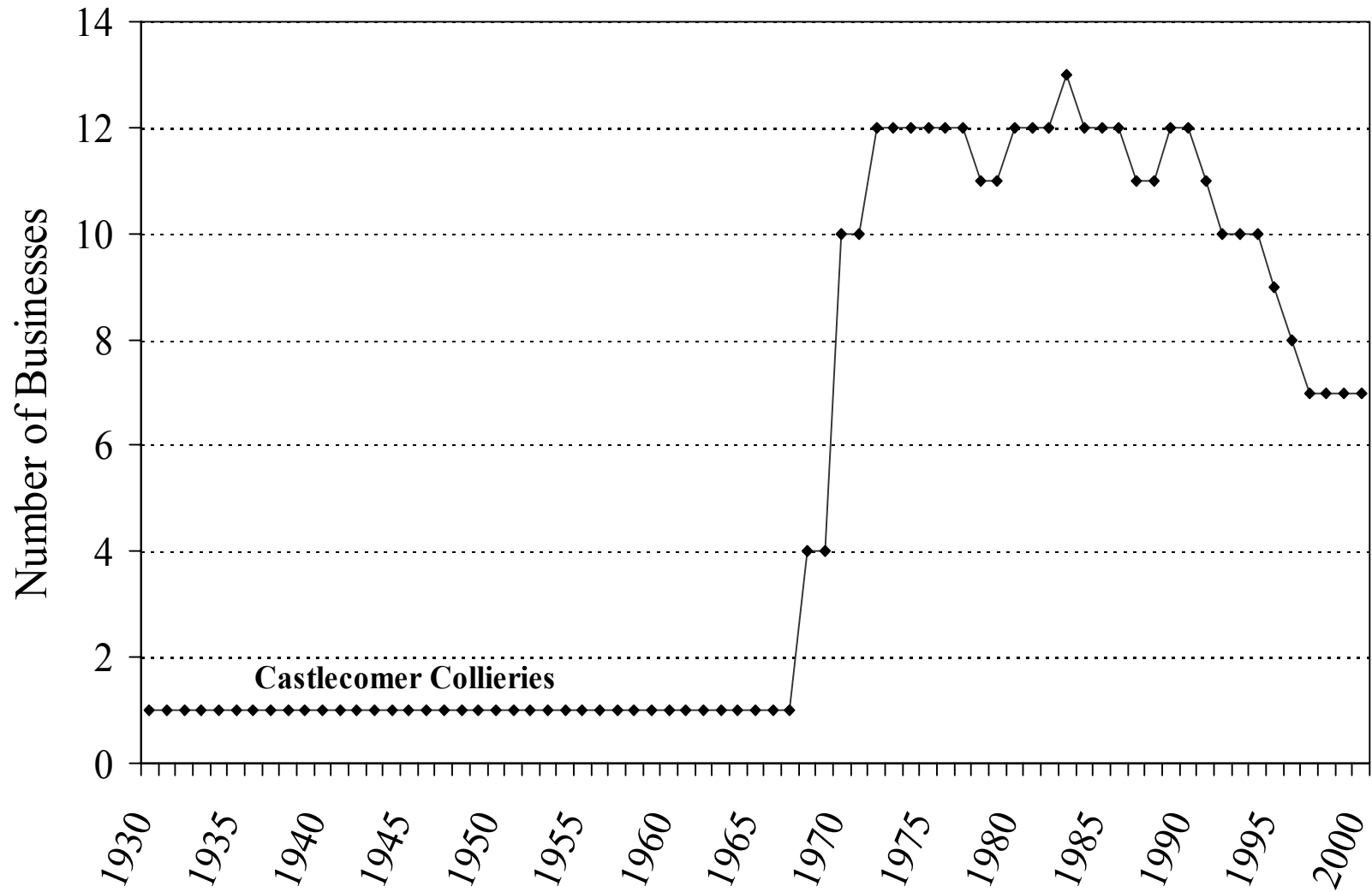


Figure 5. Number of industries in Castlecomer between 1930 and 2000. (ARIMA 1,0,2)

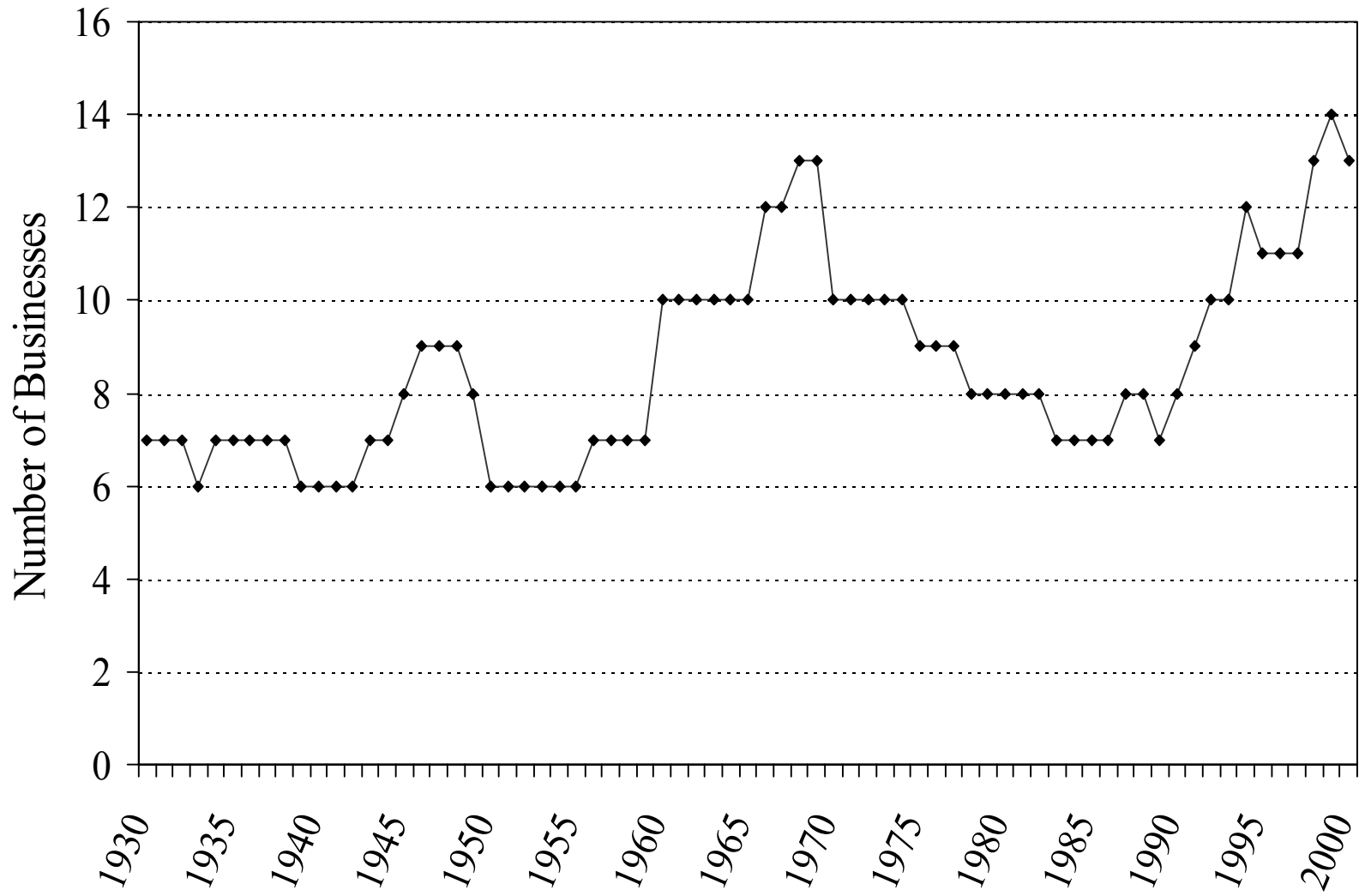


Figure 6. Number of professional services (real estate agents, lawyers, insurance agents, etc.) in Castlecomer between 1930 and 2000. (ARIMA 1,0,0)

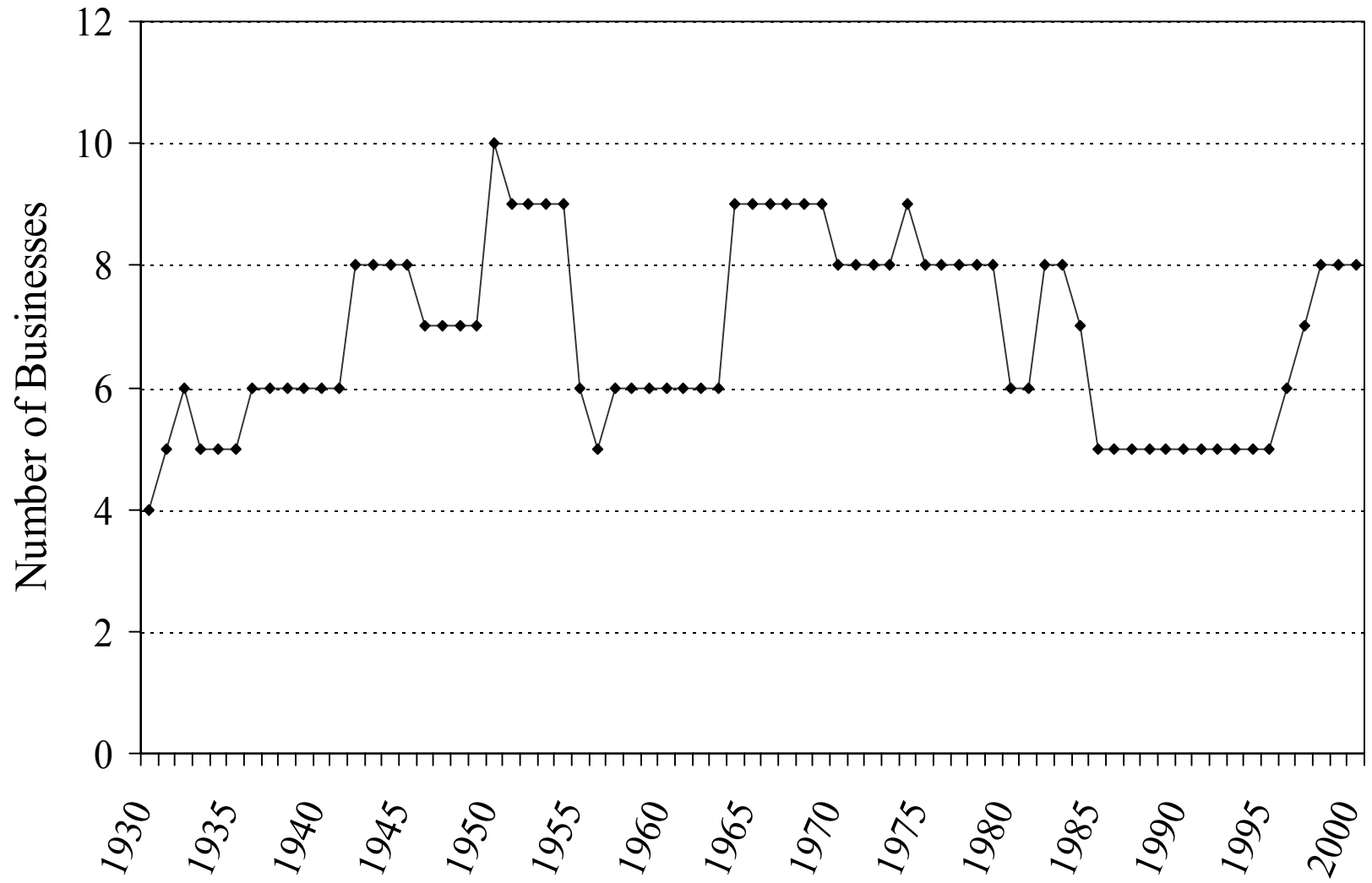


Figure 7. Number of transportation services in Castlecomer between 1930 and 2000. (ARIMA 1,0,0)

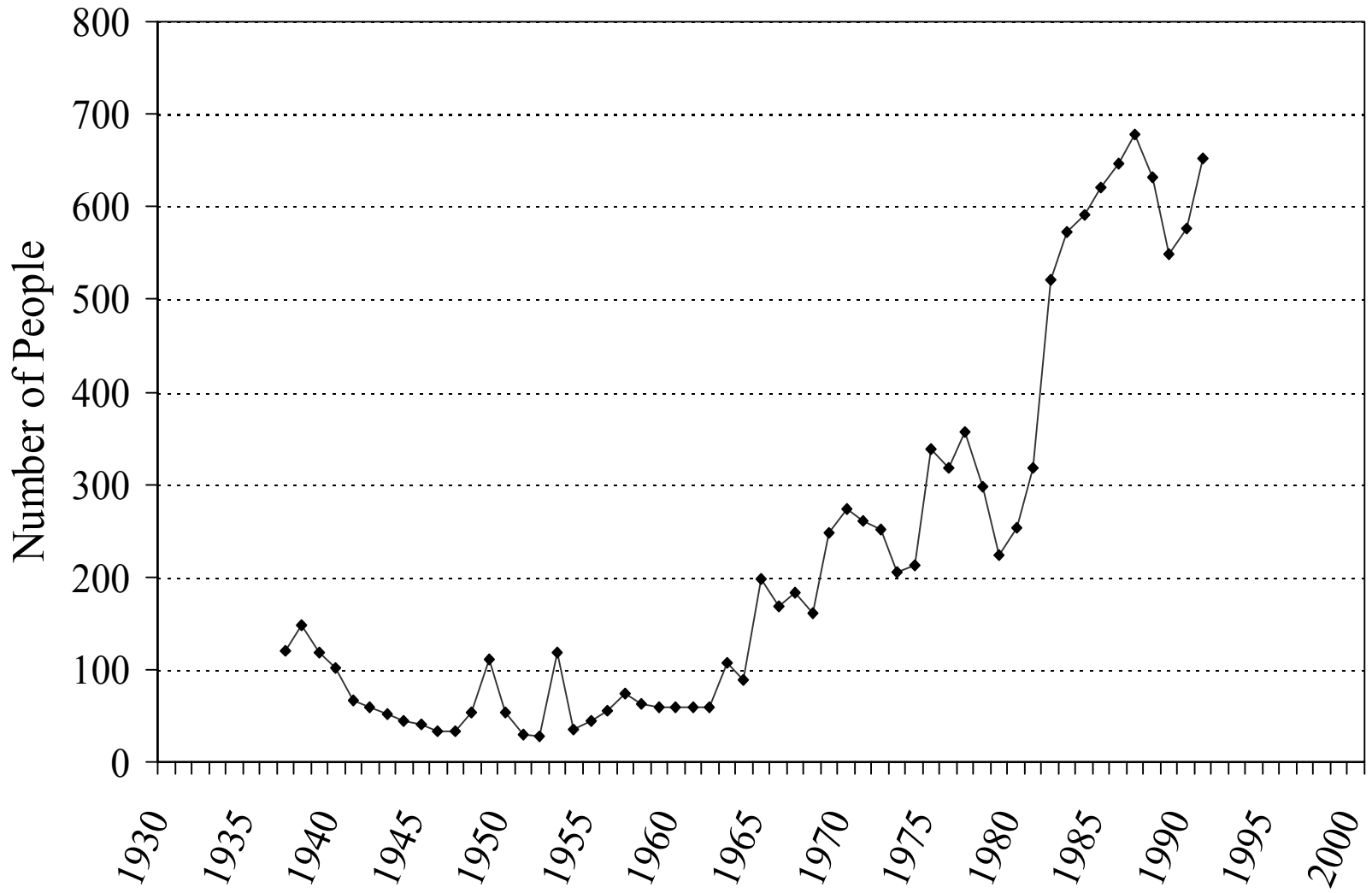


Figure 8. Number of people on the Live Register in Castlecomer between 1937 and 1991. (ARIMA 1,0,0)