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Recent Demographic Growth in Ireland: Implications for Future Spatial Planning and Housing Provision.

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Abstract:

The recent publication of Ireland's Department of the Environment, Community and Local Government's 'non-statutory' Planning Policy Statement (PPS) of end January 2015, heralds the prospect of the replacement of the National Spatial Strategy (2002-2020) with a National Planning Framework (NPF). The PPS emphasises that future Planning Strategy should be both evidence-based and plan-led. As a contribution to such aspirations, this Paper presents a demographic approach applied to the spatial context for current housing needs and points to compelling reasons for developing Ireland's cities whilst curtailing the ongoing proliferation of villages, small towns and one-off housing, and for services provision, infrastructural priorities and related policy issues.

1. Introduction:

With an emerging optimism of economic growth, increased employment, a clearer fiscal and monetary outlook, and with much of the work of the National Asset Management Agency having being brought to a finality, it is instructive to utilise the 2011 CSO census data as a background to linking the geography of population growth and house-building, particularly as movement in both of these demographic factors have been unusually quiescent since that last census.

In the four intervening years since then, the statistical evidence of slow-down suggests that to-date, the State's population since 2011 has grown by only about 60,000 and new homes output by less than 40,000, *vide* Appendix Tables A1.1 and A1.2, at the end of the Paper.

Accordingly an analysis of 2011 Census data remains a reasonably accurate summation of the present-day position, for application as the benchmark for this area of research. Nevertheless, further evidence of the eastward direction in population growth is likely to influence future spatial policy strategies and especially so because the Greater Dublin Area (GDA) is experiencing a critical shortage of housing in contrast to most of the Rest of State's surpluses.

In contrast to the current demographic 'stability', Ireland's long-term demographic history, *vide* Appendix 2 of this paper, shows the State's 1841-2011 population for its constituent Greater Dublin Area (GDA) and Rest of State (RoS) area. The GDA comprises the counties of Dublin, Kildare, Meath and Wicklow and represents just 10.05% of the State's surface area. In contrast to a 12.21% share of State population in 1841, the GDA share had grown to 23.02% by 1926 and to a 39.32% share by 2011. The April 2014 share is 39.52% based on the Central Statistics Office (CSO) 2014 *Population and Migration Estimates*.

The methodological approach of this Paper commences with the division of the State into its two principal regions, the GDA and RoS areas. For both areas, the housing stock is ordered into tiered stratification format, showing their 2011 housing and vacancy volumes for each of nine settlement categories as well as for the State total.

This writer's Doctoral Thesis posits that the GDA could reach 50% of State population by the last quarter of this century Hughes, (2010). As at 2011 54.59% of the State's population lives in Leinster. With further consolidation towards the east coast and the Dublin Metropolitan area, half of the State population is now located in less than 20% of its surface area; *i.e.* in the GDA plus five contiguous Leinster Counties of Louth, Westmeath, Laois, Carlow and Wexford.

Compared with the 1996 census, the extent to which the 2011 RoS area population has undergone significant settlement proliferation is set out in Appendix A1.3. In summary, the CSO data confirm that in the fifteen years 1996-2011 a large increase of 207 in the numbers of new settlements occurred: bringing the count to 849; that is up by 32.24% by 2011. The numbers of smallest towns grew by 34 whilst the village count proliferated, by a further 143 over that fifteen years.

Scale economics thrive under conditions of fewer, larger settlements. Instead, encouraged under the present, espoused, spatial philosophy of balanced regional development, Ireland's experience of settlement proliferation has been possible, boosted by politically-influenced spatial planning which lacked an evidence-based foundation.

Unfortunately, this has handicapped in particular, the lower-populated, West, North-West and Border regions: ones which show little or no signs of economic recovery to-date. Articulated in strata-format, of *Settlement Type and Size* the 2011 position is highlighted in the following Table, thus:

Table 1: State Geographic Area Settlements, Housing Stock, Vacancies, 2011

Geographic Area: **The State**	Settlement Type and Size	Populations	Housing Stock	Vacancy Rate (%)	Headship Ratio
Numbers = 5	*i.e.* the 5 Cities	1,528,960	650,826	8.4%	2.35
39	Towns 10,000 - 49,999	730,415	309,002	11.2%	2.36
41	Towns 5,000 - 9,999	297,174	129,730	13.2%	2.29
30	Towns 3,000 - 4,999	119,705	54,104	14.9%	2.21
82	Towns 1,500 - 2,999	170,628	85,077	22.6%	2.01
76	Villages 1,000 - 1,499	93,016	46,983	23.2%	1.98
172	Villages 500 - 999	123,200	60,977	22.0%	2.02
404	Villages under 500	116,236	60,237	25.6%	1.93
Non-nucleated	Remainder of country	1,408,918	597,909	18.7%	2.36
849	Totals:	4,588,252	1,994,845	14.5%	2.30

Source: CSO 2011 census, for Area and Housing sources.

The first observation is that in contrast to both the cities and the extensive non-nucleated (NN) 'Remainder of country' area with its scattering of one-of houses; as the settlement population size reduces, headship rates of the average number of persons living in a housing unit of that category of settlement becomes smaller. Over 700 of the State's 849 settlements with populations of less than 3,000, have headship ratios of 2.02 or less – more than 15% lower than the 'density' of occupied housing in other settlement categories. This presents significant difficulties for a range of scale economics and for State competitiveness.

Likewise, in 2011 these smaller settlements have measurable higher vacancy levels, underlying an absence of or defective supply-demand assessment, an absence of evidence-based decision-making, of past illogical planning and development implementation and with very poor awareness of user-location needs related to scale employment.

The evidence from Table 1 shows that in 2011 the open countryside population was, marginally, just short of the combined population the State's cities. Thus, it is understandable that a recent report on Ireland's Ambulance Service pointed to the overwhelming 'rurality' of the country with critical time-delay consequences for getting patients to hospital. Likewise, for the private sector the recent controversy and publicity concerning Ulster Bank's decision to close its Ferbane, Offaly Branch made in the context of that town and surrounding area's ongoing population decline. Parallel observation for aggregate services supply for both public and private providers, have and will continue to present profound difficulties for the State: for economies of scale, enhanced productivity and ultimately, for Ireland's international competitiveness.

Thus, robust measures to counteract settlement proliferation and non-nucleation should be major issues to be addressed in the new NPF. The imperative is a pressing need to develop fewer but much larger settlements.

2. Contrasts between the GDA and RoS areas:

In a similar layout format, the characteristics of Table 1 data are analysed for the GDA and RoS areas in the next two Tables, 2 and 3. They provide sharp contrasts between the two principal areas of the State. This analysis explains the extent of population, headship ratios and vacancy differences, thus:

Table 2: GDA Geographic Area Settlements, Housing Stock, Vacancies, 2011

Geographic Area: **The GDA**	Settlement Type and Size	Populations	Housing Stock	Vacancy Rate (%)	Headship Ratio
Numbers = 1	*i.e.* Dublin	1,110,627	466,425	8.4%	2.38
15	Towns 10,000 - 49,999	294,196	111,455	6.8%	2.64
16	Towns 5,000 - 9,999	118,555	45,789	8.0%	2.59
7	Towns 3,000 - 4,999	25,348	11,167	8.5%	2.27
14	Towns 1,500 - 2,999	30,739	12,294	11.3%	2.50
13	Villages 1,000 - 1,499	16,219	6,254	9.8%	2.59
28	Villages 500 - 999	20,548	7,789	10.3%	2.57
37	Villages under 500	10,964	4,481	11.1%	2.45
Non-nucleated	Remainder of GDA	176,960	64,663	10.8%	2.74
131	Totals:	1,804,156	730,507	8.5%	2.47

Source: CSO 2011 census, for Area and Housing sources.

Table 3: RoS Geographic Area Settlements, Housing Stock, Vacancies, 2011

Geographic Area: **RoS**	Settlement Type and Size	Populations	Housing Stock	Vacancy Rate (%)	Headship Ratio
Numbers = 4	*i.e.* 4 Provincial Cities	418,333	184,401	8.4%	2.27
24	Towns 10,000 - 49,999	436,219	197,557	13.7	2.21
25	Towns 5,000 - 9,999	178,619	83,941	16.1	2.13
23	Towns 3,000 - 4,999	94,357	42,937	16.6	2.20
68	Towns 1,500 - 2,999	139,889	72,783	24.5	1.92
63	Villages 1,000 - 1,499	76,797	40,729	25.3	1.89
144	Villages 500 - 999	102,652	52,988	23.7	1.94
367	Villages under 500	105,272	55,756	26.8	1.89
Non-nucleated	Remainder of RoS	1,231,958	533,246	19.6	2.31
718	Totals:	2,784,096	1,264,338	14.5%	2.20

Source: CSO 2011 census, for Area and Housing sources.

Some very striking contrasts are apparent between the GDA and RoS areas, detailed in these Tables 2 and 3 data. In 2011 Dublin has nearly eleven times the average population size of the four cities in the RoS area. Likewise, the overall average settlement size is notably greater in the GDA, particularly for larger settlement (+7.91%). Other categories of settlement size in the GDA range from 7% to 3% larger than in the RoS area. The one exception is that 3,000 to 5,000 populated towns in the RoS area are 13.28% larger on average than their GDA counterparts, indicating their higher importance as central place function, after Christaller (1933).

Within each category, the GDA vacancy rates are between just one-third and one half of those of the RoS areas. It is noted that the treatment of Holiday Homes as part of total vacant stock has greater effect than the RoS area because this area has a much higher count of this type of accommodation. Nevertheless, the much higher levels of overall vacancy directly corresponds to the (western) remoteness of a county from its nearest city and particularly so in its distance from Dublin, albeit with the exception of Leinster county of Wexford, 2011 Census.

Headship ratios are nearly 20% higher in the GDA where its large towns generally have higher ratios. This is also the case in the RoS area, and its non-nucleated population also exhibits higher headship ratios. The GDA is almost twice as urbanised, *i.e*. the urban population of settlements of 1,500-plus in population, is 86.13% versus 44.61% of total RoS population. In contrast, the RoS area is seven-times more 'rural' in the measure of its non-nucleated population, exclusive of its 574 villages.

In summary these significant series of differences, not only emphasise the underlying spatial morphology contrasts between the housing stocks of the two areas of State: they also point to their urban-rural statistical incompatibility and hence the need for radically differing and sympathetic spatial strategy policies in the forthcoming NPF.

In particular there is an emerging spatial planning and development imperative to facilitate the growth of larger, selected, populated settlements, so as to counteract the extent of small-settlement proliferation in the RoS villages and Non-Nucleated populations and instead, to boost the growth of strategically selected large towns in its sparsely populated planning regions.

Parallel to this is the housing crisis and affordability issue, in turn linked to sustainability including long and medium-distance commuting, the geography of the daytime working population data and to Ireland's economic competitiveness.

3. Spatial Planning Dilemmas for Densification and for Rural Viability Alternatives:

Dublin has led the early economic recovery phase since about mid-2013, evidenced by increasing employment, population growth and a number of other significant statistical indicators. Today, there is a strong perception supporting hard statistical evidence that (most of) the remainder of the State is lagging behind and continuing to feel the brunt of the 2009 economic collapse. Furthermore, such evidence confirms that the specific benefits accruing to urban agglomeration are city-based and due to the modest sized populations of Ireland's provincial cities, that their capacity to generate 'spill-overs' are currently constrained, limited perhaps to Dublin and to the CASP area surrounding Cork city.

Despite the pursuit of 'soft' political and local quests to simultaneously assist as many towns and villages in the RoS area, there is a wealthy base of literature supporting the statistical evidence in this increasingly post-industrial digital and post-distributive era: that Ireland's future economic and social wellbeing will increasingly depend on city-led growth, for employment, job creation and population growth. Next-year's census is likely to provide 'hard' evidence that this is so and thereby refuting the misguided NSS pursuit of 'balanced regional development' (BRD). Thus the central issue remains: will the new NPF opt to continue with BRD or alternatively, will it articulate a strategy to develop the cities and larger towns with a view to widen the growth momentum, from the GDA to the RoS area?

Balanced Regional Development (BRD) is defined as… *Developing the full potential of each area to contribute to the optimal performance of the State as a whole – economically, socially and environmentally*, NSS, P. 11. The problem with this statement is that it is self-contradictory: the optimal performance of the State critically is dependent on that of its primary contributors and their ability to generate Urban Agglomerative spill-over: not on the BRD definitional illusion of achieving the full potential of each area.

Overall State growth will be far greater if its strongest components – its cities and largest towns - are performing to their optimum. This objective is unattainable if the State's total resources are directed to developing the full potential of each area which is 'distributive' in nature and 'scatter-gun' in effect. Inevitably, the limited resources will be spread too thinly to be any way effective, vide Appendix 4 (a) and 4 (b).

Concentrating resources in the national interest, including targeted new housing, will result in far superior overall growth, especially given the limitations on capital and revenue resources resulting from a much larger national debt and the EUs requirement for all capital investment to be coordinated and linked, project by project. However politically-unpalatable or controversial is the quest for 'lumpiness' such as advocated by The World Bank, the forthcoming NPF must nonetheless seek to maximise the benefits of urban agglomeration if Ireland is to become competitive through scale economics. The quest for the optimal conditions: to density firms and population is paramount.

4. The Thrust and Direction of a New State House-Building Strategy: [include Goodbody Housing Report]

The State's national housing policy should seek to concentrate the bulk of new housing production within the first two of the stratified sectors, shown in Tables 2 and 3, above. It is noted that the aggregate 2011 population of these two sectors, cities and large towns is 2,259,375, being 49.24% of the State's total population. Instead of focusing on all 39 large State towns of 10,000 and over in population, the growth centres would be the five cities and the indicative 12 'growth centre' towns, per Hughes (2013). That figure represents 79.36% of the State's total urban population of 2,846,882, of population living in settlements of 1,500 and over. The concentration can be finessed and reduced to 2,273,390 for seventeen settlements, consistent with this writer's-advocated growth centres for the new NESS, *vide* Note 1.

Note 1: Two of the twelve towns, namely Castlebar and Cavan are 'provisional growth centres' due to their limited size and such designations are suggested as being subject to the competitive requirement of achieving defined population growth levels by 2016, vide Hughes (2013).

Targeted discrimination of housing production would also assist in the implementation of the new spatial strategy, particularly if a site subsidy initiative were to be introduced thereby mitigating the gap in market values. Otherwise, as is the present case, the von Thunen-Alonso (bid-rent) value-to-distance for unsustainable commutes will continue to deflect and condemn potential city seeking house-purchasers to unaffordable housing, deflected to involuntary locations, remote from work, college or schools.

The proposed site subsidy-levy system would be Exchequer-neutral by being set off against one-off housing site levies, imposed in rural areas and in non-designated centres. An appropriate mechanism can be deployed to finesse and administer the system, such as in the form of a location-determined planning charge. Rural housing demand linked to local-generated employment could be exempted or lightly imposed whereas urban-generated house building in rural locations would expect to be more heavily levied. Properly finessed, this described site subsidy-levy system would become an important spatial planning tool under the NPF.

If properly implemented and centrally administered free from localised political pressures, the resultant spatial strategy would promote faster growth of designated growth centres, would thwart the proliferation in the creation of new, smaller, settlements and would curtail the current indiscriminate scatter of new one-off rural housing. In the fifteen years 1996-2011, the volume of housing deflection was a significant contributor to the 'diluted' (61.89%) level of growth in Ireland's five cities at 16.42% as compared with overall State population growth of 26.53%, vide Table A3.

Within the anticipated ten to twenty-year time frame of the new NPF, the economic effect of such focused, spatial planning policy should be rewarded in enhanced scale economics as the larger urban areas then would begin to enjoy faster than State average population growth, with significant savings from more efficient public and private sector savings. The reuse of largely derelict brown-field sites would enhance scale economics, benefitting from existing infrastructure. Likewise, this would assist the concentration of skilled labour forces into much fewer, larger centres. Eliminating insufficient-sized labour pools for major FDI industry would increase regional employment choices, in chosen those RoS area growth centres such as Sligo, where its population performance has so disappointed since 2002.

Spill-over benefits would be brought to large groups of counties where few or none exist at present. Importantly, the scale-size differences between Dublin and the next largest settlements could also be reduced, measured in an improving (reducing) Gini Coefficient distortion between Dublin and the provincial cities, *vide* Appendix 5. National competitiveness, scale economies and higher overall standards of living, would ensue to the overall wellbeing and growth potential of the State's economy. A simpler and cheaper-to-run Ireland would become efficient, more competitive and would exhibit increasing economies of scale. The O'Leary-described 'distributive' economy (2003) would be seamlessly replaced by a 'competitive' one, *vide* Appendix 4.

5. Future Locations for House-Building:

Based on the Dr. Gavin Daly posting, in *Ireland After NAMA*, of 30th January, 2015, in reference to this State's past record of adverse political interference in the process of formulation and implementation of strategic planning, such disillusionment could lead to understandable pessimism or even to some cynicism in addressing the prospects for future Irish spatial strategy policy-making. However, this Paper's writer is more sanguine in approach. Nevertheless, publication of the NSF may not take place until after the formation of the new Government, following the next General Election.

It also assumes a stable political environment will exist in mid-2016, as the basis for continuing the State's economic recovery. Increased industrial employment for house-building can result in an improved supply, reaching at least 30,000 completions per annum by end of 2018. It can be expected that 30% of this output will be the public-sector's response for which much of the necessary capital funding is now in place. A viable construction industry must seek to focus on upskilling, be better capitalised and actively promote research so as to make itself less vulnerable to the extremes of past activity cycles.

Accordingly, the private sector recovery will be expected to have reached an equivalent annual level of completions of 21,000 units by 2018, again predicated on the ongoing recovery in the State's Banking environment.

It is also assumed that bank lending will not only be focused on recently-announced Central Bank's deposit and lending criteria, but that in addition, it will be informed spatially. Banks themselves should employ or retain spatial/property expertise to ensure that no future lending will serve to augment a regional or county housing oversupply situation. Appropriate consideration should be given to developing controls wherein building finance will be based on spatial rationality – that future housing requirements will not be supply-driven or based on politically-influenced planning zoning practices of 2006 and earlier.

In this regard, it can be expected that there will continue to be an over-supply position of new housing stock in most Western, North-Western and Border counties for some years to come. If bank lending can be informed as to spatial planning policy based on the sector-settlement approach and statistics as set out in the earlier portion of this Paper, the type of lending and associated lending risks that led to such over-supply, particularly in these regions of State can be avoided. Thus lending practices should provide for and include a location-awareness process in the assessment of developer risk. This should be as important a consideration as that of the deemed profitability of a development proposal.

A further consideration revolves around the debate on housing types and designs. The requirement for the foreseeable future is for smaller accommodation, based on social trends for more singletons and smaller family size demand. Innovative design solutions already exist: they can provide for smaller initial house units which can be added to, vertically, by way of removable and replaceable roofs, following the provision of an additional floor level! Likewise, there is evidence from mainland Europe, of family-friendly apartment designs: in the case of double-duplexes, that can provide both small ground-level gardens, and also having attractive family sized balconies and/or with roof gardens.

6. Recent Developments in Spatial Planning Strategy:

The Planning Policy Statement (PPS), 2015: At end January 2015 the Department of the Environment, Community and Local Government published its 'non-statutory' Planning Policy Statement (PPS), 2015. It is a holding document, pending publication of the National Planning Framework (NPF) later in 2015 or perhaps following the outcome of the 2016 General Election and clarification of the resultant policy direction and priorities of the next Dail.

It states that …*the PPS is intended to be reviewed from time to time*. Having regard to development activity during the lifetime of the National Spatial Strategy prior to its replacement …*it will ensure that the right development takes place in the right locations and at the right time and in providing the social, economic and physical infrastructure necessary to meet the needs of our people in a way that protects the many qualities of our natural and built environment.*

The PPS sets out ten Key Principles and contains a set of High Level Priorities, which together with three Super-Regional Spatial Planning Guidelines, are intended for the next decade and beyond. This will involve reshaping and focusing the national spatial strategy to meet today's and tomorrow's challenges. Parallel to national spatial planning it is intended that economic planning will be actively pursued to *"…promote economic and community development, under the Local Government Act 2014, each Local Authority will develop Local Economic and Community Plans by the end of 2015. The Regional Enterprise Strategies will support the increased emphasis on economic development at Local Authority level under these Plans, and will also feed in to the Regional Spatial and Economic Strategies to be developed by the Regional Assemblies."* Action Plan for Jobs and Innovation (AJP), 2015, P. 35., which was launched in early-February by Minister for Jobs, Enterprise and Innovation, Richard Bruton, T.D.

The PPS does not articulate an economic role for the larger cities apart from "acting as our major international players". What does it mean by "the larger cities", especially given the near eleven-times population average-size-difference between Dublin and the four RoS cities and where Dublin is but a moderate-sized city in current world-size criteria? Cork is less than one-fifth Dublin's population where both airport and city still struggle to attain critical mass. The PPS should interface with the MaREi Initiative in recognition of Ireland's territorial seas and of its spin-off potential for the Cork Harbour area. More detailed research is required to ascertain why Finland's Tampere has passed out Cork's population, growing at almost twice as fast?

Are all of the State's cities envisaged as being "larger cities" and if not, which ones are or not? What initiatives are envisaged to consolidate and promote the smaller RoS cities of Limerick, Galway and Waterford? An interesting initiative spelt out in the PPS is that *…an Urban Regeneration Measure will be rolled out as part of the next round of EU structural and regional development funding, matched by Irish investment to create new creative clusters to generate sustainable economic investment and employment in the heart of major cities in need of regeneration.*

Likewise the PPS does not define, in size or other terms what is meant by "regional towns"? In the economic sphere "re-emphasising the contribution from rural based enterprise in food, tourism, natural resources and innovation sectors", the PPS "envisages a more dynamic participation by rural areas". In contrast, the PPS is 'light' on similar aspirations for cities, which are the engines of a country's economy. It envisages that the NPF will set out *…more effective monitoring systems will be put in place for estimating future development requirements for housing, business and employment to ensure such requirements are being met and not exceeded to the extent that future infrastructure investment requirements would be more difficult to predict and deliver*.

The National Policy Framework (NPF): Timelines for the introduction of this new NPF framework are awaited. This writer confirmed from the The Planning System and Spatial Policy Unit, DoECLG, that the NPF is currently in a 'holding mode' pending publication of the two new Planning and Development Bills. After that it is expected that a NPF timeframe will be announced.

The NPF is intended to *…identify national priorities with regard to future employment growth and development.* Likewise it will *…distinguish between the role of the larger cities in acting as our major international players and our regional towns in extending the influence of the cities; and - establish a clear policy framework within which there will be more dynamic participation by rural areas in overall regional development by re-emphasising the contribution from rural based enterprise in food, tourism, natural resource and innovation sectors.*

Both political and planning mind-sets will require an immense cultural change needed to realise such requirements to the prevailing localism and short-termism, *vide* background to The Mayo Draft Development Plan 2014, *vide* Appendix 3, Hughes (2014) and set out in Appendix 5 herein.

Regional Planning Guidelines (RPG): It is the government's intention that the three new super Regional Assemblies will take responsibility for the formulation and publication of the replacement RPGs. What is unclear is whether the NPF or the RPG Plans will nominate their respective growth centres. Of particular concern is the fact that because the NSS has been 'suspended' there now is a 'lacuna' in the planning hierarchy that quickly needs to be filled.

7. Conclusions:

It is essential that the NPF, as Ireland's promised economic and spatial strategy, should foster and facilitate the city 'drivers' of urban agglomeration, in facilitating infrastructure and curtailing village and small-town proliferation. Together with the forthcoming new planning legislation and the implementation of the Mahon Tribunal recommendations, it should provide for measures including the aforementioned levy-subsidy concept to be able to direct and consolidate the locations of future spatial development to those cities or to major towns which are to be designated as growth centres.

A range of questions exemplified by those set out in this Paper, serve to demonstrate the extent of uncertainty, for the thrust of future economic and spatial policy options, which without adequate research, shall continue to be problematic. Such uncertainty creates doubts for regional investment in the absence of sound strategic planning, not least in regard to research on housing requirements.

Future assessments for housing demand must be based on sustainable criteria in line with plan and evidence-led policies. On the supply side, Table A2 shows the fall off in new housing output since its 93,419 annual completion peak in 2006. Department of the Environment data confirms that aggregate production since that year has been just over 200,000 during the eight years to end 2014. This level compares with 229,183 new units as far back as the decade of the 1970s.

Completions were 233,382 in the 1980s, 301,912 in the 1990s and 636,429 in the noughties. For the seven years from 2010 to the end of 2016 as forecast, it appears that aggregate State housing output will amount to about 85,000 units, averaging just over 12,000 per annum. These levels of output will be less than half of what remains a very conservative estimation of demand. Clearly, the need to accelerate output, above these DoECLG forecasts, will depend on funding and house-price increases.

On the one hand developers and house builders appear to be reticent to expand output unless their profitability increases and also to availability of building finance from the financial institutions. On the other hand, both government and the Housing Agency point to the numbers of extant planning permissions, particularly in the Dublin area. One commentary suggests that financial and/or fiscal measures should be deployed to encourage early development. Whilst it is encouraging to see some new 'starts' there is still considerable apprehension that it will take several years for supply to respond to demand estimates in the capital. The 'use it or lose it' concept of a planning permission 'life' need to be rigorously enforced.

The long-term 40-45,000 per annum unit estimates for housing demand, as posited in Williams, Hughes *et al*. (2010) remains valid, not just in providing for long-term population growth but secondly because of a continuing family size decrease - although somewhat lagged - but nonetheless following the European norm and thirdly for the housing stock allowance for obsolescence, for the 200-year life-span with its implicit 0.5% per annum replacement level. That latter allowance presumes several refits.

In the all-island spatial context, the DoECLG website currently notes that *…a framework of collaboration on spatial policy between North and South is being progressed in order to create enhanced, globally competitive and dynamic economic conditions on the island of Ireland by providing strategic, forward-looking planning frameworks which will assist in targeting appropriate investment in infrastructure and lead to better co-ordination of public services improving the quality of life on both sides of the border.* In particular, it can be anticipated that such 'framework of collaboration' will evaluate the potential of the island's two metropolitan areas and prepare a strategy for the development of the fast-growing Dublin-Belfast Corridor.

In conclusion, such research should recognise that with fewer, but much larger settlements on the island, particularly in the RoS area of State – designed both to optimise scarce housing resources whilst enabling wider varieties of employment opportunities – is the spatial strategy imperative needed to achieve scale and critical mass.

Otherwise, the risks of perpetuating village proliferation with further rural population decline, diseconomies of scale and out-migration will abound, particularly during their inevitably longer periods of economic downturns. Attention should therefore be focused on the win-win strategy based on spill-overs and driven by urban agglomeration forces that identify and foster city-clustering opportunities whilst also determining the overall prosperity for all regions on the island of Ireland.

APPENDIX 1

TABLE A 1: State Population Growth and Growth Components 1996-2016:

Census	State Population	Actual Growth	Population growth %	Natural Growth	Net Migration
1996 population	3,626,087	-	-	-	-
2006 population and growth over 10 years since 1996	4,239,848	613,761	16.93	268,549	345,212
2011 population and growth over 5 years since 2006	4,588,252	348,404	8.22	226,112	122,292
15-year growth: 1996-2011	-	962,165	26.53	494,661	467,504
2016 population (forecast) and 2011-2016 growth components	4,700,000	110,000	2.40	200,000	-90,000

Source: CSO Censuses on a *De Facto* Basis and forecasts for 2016 census, compiled by Brian Hughes – see Note 1

Table A2: Housing Output 2006-2015

State	Units
Year	Annual Output
2006	93,419
2007	78,027
2008	51,724
2009	26,422
2010	14,602
2011	10,480
2012	8,488
2013	8,301
2014	(forecast) 11,016
2015	(forecast) 15,276
2016	(forecast) 17,943

Sources: DoECLG and CSO

Table A 3: 15-years Changes in numbers of State Settlements 1996-2011

Sector	1996	2011	% increase in settlements:
Cities	5	5	0.00%
Large Towns	23	39	69.57%
Medium Towns	29	41	41.38%
Smaller Towns	27	30	11.11%
Smallest Towns	48	82	70.83%
Large Villages	62	76	22.58%
Medium Villages	131	172	31.30%
Small Villages	317	404	27.44%
Non-nucleated	nil	nil	nil
Total	642	849	32.24%

Source: CSO Areas - data

Appendix 2

Table A: GDA as Percentages of RoS and of the State Population (1841-2014):

Year	GDA Population	RoS Population	GDA as a % of Rest of State (RoS)	GDA as % of State population
1841	797,232	5,731,567	13.91%	12.21%
1851	740,597	4,370,980	16.94%	14.49%
1861	698,050	3,704,061	18.85%	15.86%
1871	663,131	3,390,056	19.56%	16.36%
1881	652,569	3,217,451	20.28%	16.86%
1891	628,545	2,840,149	22.13%	18.12%
1901	640,111	2,581,712	24.79%	19.87%
1911	669,625	2,470,063	27.11%	21.33%
The War of Independence - interruption of census taking				
1926	684,242	2,287,750	29.91%	23.02%
1936	764,791	2,203,629	34.71%	25.76%
1946	827,725	2,127,382	38.91%	28.01%
1951	888,386	2,072,207	42.87%	30.01%
1956	898,364	1,999,900	44.92%	31.00%
1961	906,347	1,911,994	47.40%	32.16%
1966	989,202	1,894,800	52.21%	34.30%
1971	1,062,220	1,916,028	55.44%	35.67%
1979	1,255,533	2,112,684	59.43%	37.28%
1981	1,290,154	2,153,251	59.92%	37.47%
1986	1,336,119	2,204,524	60.61%	37.74%
1991	1,350,595	2,175,124	62.09%	38.31%
1996	1,405,671	2,220,416	63.31%	38.77%
2002	1,535,446	2,381,757	64.47%	39.20%
2006	1,662,536	2,577,312	64.51%	39.21%

2011	1,804,156	2,784,096	64.80%	39.32%
2014	**1,827,000**	**2,796,000**	**65.34%**	**39.52%**
2016 (f)	**1,875,000**	**2,825,000**	**66.37%**	**39.89%**

Source: Hughes (2010), except for Census year 2011: **added subsequently for 2014 as per the CSO's *P&ME* Estimates, and for 2016 Census as above forecast** (all shown on the *de facto* basis).

APPENDIX 3

It is instructive to consider additional scenarios for Balanced Regional Development (BRD) and for Regional Growth further to those as posited in O'Leary (2003: 30) and by DIT's Futures Academy. O' Leary's BRD and Regional Growth scenarios are set out in the first two scenarios in Table A 3.1, thus:

Table A 3.1: Regional Growth Scenarios: Where "Rich" Indicates GDA and "Poor" is RoS

	"Rich" Region	**"Poor" Region**
1st Scenario (Lose-Win) Regional Convergence or Balanced Regional Development	Urban Diseconomies Dominate	Exploit Catch-Up potential
2nd Scenario (Win-Lose) Regional Divergence or Unbalanced Regional Development	Agglomeration Economies Dominate	Failure to Catch-up

Source: O'Leary, E., *Irish Regional Development – A New Agenda* (2003: 30).

Note: Other nomenclature designations, respectively for "Rich" and "Poor" regions are "Core" and "Peripheral", as for example, when applied to the econometric "core-periphery equilibrium" sustainability model (Robert-Nicoud, 2006).

O'Leary (2003) further notes that *there is a distinct possibility that the objectives of BRD and improved national growth and competitiveness may not be simultaneously achievable*. Instead, that author states that both of these "incompatibles" need to be replaced by one unifying strategic objective: namely, one *that combines national growth and competitiveness* – with a focus on FDI firms. In addition to O'Leary (*op. cit*. p. 19), in research by Gleeson, Ruane and Sutherland (2006) – as detailed hereunder – it is their particular presence that distinguishes the levels of GVA at the regional level.

The next Table best describes the reason why the NSS (2002-2020) has failed to perform as was intended and, *inter alia* may explain why the cities growth is less than two-thirds that of the State population growth and specifically, the loss in the Sligo Gateway's population since 2002.

TABLE A 3.2: Regional Growth Scenarios: Where "Core" Indicates GDA and "Peripheral" is RoS – [THE INEVITABLE OUTCOME OF BRD]

3rd Scenario (Lose-lose): Outcome	**"Core" Regions**	**"Peripheral" Regions**
Regional Divergence	Urban Diseconomies Dominate	Failure to Catch-Up
(part of 2nd Scenario)	(part of 1st Scenario)	(part of 2nd Scenario)

Source: Brian Hughes.

Table A 3.3: Regional Growth Scenarios: Where "Core" indicates GDA and 'Peripheral' is the RoS – Win-Win: in replacing BRD by the World Bank-advocated 'lumpiness'; such urban concentration assists the development of clusters, focuses capital expenditure and reduces commuting distances.

4th Scenario (Author's Pareto-optimality: win-win Hypothesis)

Outcome	**"Core" Region**	**"Peripheral" Region**
Fourth Scenario: Win-Win Regional Divergence (***without*** BRD due to Urban Agglomeration	Agglomeration Economies Dominate	Exploit Catch-up Potential

Source: Brian Hughes.

The "national growth" thinking behind this 4th Scenario is based on the optimistic premise that subsequent to the Post Celtic Tiger downturn, over the longer timeframe and with the naissance of recovery already evident in the GDA, the State will continue to "grow" significant net job-creation. Against this background however, earlier literature notes that individual regions will tend to exhibit greater growth variations with the more urbanised ones likely to fare best (*Futures Academy*, 2007). Emerging research on FDI location-preference, combined with lower levels of job losses in the GDA are cited in support of this view.

Appendix 4

All Ireland Cities Gini Coefficient – City Size-Deficiency

The following application of Zipf's Law where population is inversely related to city size order, results in a Gini Coefficient measure of the extent of Ireland's settlement distortion, based on the 2011 census.

The data for the seven largest cities are thus:

Table A 4.1: All-Island City Populations in 2011 (thousands)

City ('000)	Rank	2011 Population (a)	Where Dublin = 100.00%	Zipf's Law Population (b)	Zipf Target Shortfall/ [Surplus.] (b)- (a)	Zipf % extent of Shortfall [(b)-(a)/ (b)]
Dublin	1	1,110.6	100.00	1,110.6	0.0	N/A
Belfast	2	515.00	46.37	555.3	40.3	7.26
Cork	3	198.6	17.88	370.2	171.6	46.35
Derry	4	93.6	8.43	277.7	184.1	66.29
Limerick	5	91.4	8.26	222.1	130.7	58.86
Galway	6	76.8	6.92	185.1	108.3	58.51
Waterford	7	51.5	4.64	158.7	107.2	67.55
Aggregate city population shortfall in relation to Dublin:					**742.2**	**41.95**

Source: CSO Principal Demographic Results, Censuses of 2011: Table 7, Areas data, together with 2008 estimates for Belfast and Derry are sourced from NISRA, whilst assuming that Waterford is the next largest settlement after Galway (to the exclusion to any other settlement north of the border). Belfast's population includes that of contiguous Lisburn, Glengormley, Castlereagh, Carrigfergus, Newtownabbey, Bangor together with seven smaller settlements, based on NISRA 2008 estimates, *vide*, http://ninis2.nisra.gov.uk/public/pivotgrid.aspx?dataSetVars=ds-1931-lh-69-yn-1971,1981,1991, … Derry's includes New Buildings, Strathfoyle and Culmore.

Analysis: Brian Hughes.

Note: This aggregate shortfall in population is 11.60% of the 2011 estimated all-Ireland population of 6.4 million.

The Gini Coefficient shortfall for above Table is calculated at 41.95% which reflects a considerable level of distortion, mitigated somewhat by Belfast's 'relative normality' and Derry's (2008) inclusion on the basis of the stated size-difference with Limerick (2011). The measure of distortion is compatible with a 'basket' of Western European cities, *vide* Eurostat populations, 2011. This however, notes that smaller countries have a greater size variance in comparison with larger ones, due to their 'primate settlement' effect.

This finding supports the view that for small countries or provinces, as in the cases of the Republic and of Northern Ireland, primacy is to be expected, simply based on the limited size of entity. This is supported in research by Mansury, Y. and Gulyas, L. (2006).

Future governments should be obliged to reduce such shortfall: a policy initiative that would require them to commit to seriously growing the State's 'embryo' cities, especially having regard to the increasing importance of the Producer Services sector and in particular, of the economic dynamics of the 'knowledge economy'. Next the analysis for the State excludes the Northern Ireland cities, Belfast and Derry in Table A 4.2, thus:

Table A 4.2: State City Populations in 2011 (thousands)

City ('000)	Rank	2011 Population (a)	Where Dublin = 100.00	Zipf's Law Population (b)	Zipf Target: Shortfall (b)-(a)	Zipf % extent of Shortfall [(b)-(a)/ (b)]
Dublin	1	1,110.6	100.00	1,110.6	0.0	N/A
Cork	2	198.6	17.88	555.3	356.7	64.24
Limerick	3	91.4	8.23	370.2	278.8	75.31
Galway	4	76.8	6.92	277.7	200.9	72.34
Waterford	5	51.5	4.64	222.1	170.6	76.81
Aggregate 'embryo' city population shortfall in relation to Dublin:					**1,007.0**	**70.65**

Source: CSO *Principal Demographic Results*, Censuses of 2006: Table B.

Analysis: Thesis Author.

This second stage in this analysis is undertaken for the five State cities, the 'gini' distortion level from the same methodological analysis being markedly worse, at 70.65%. Such result can be viewed as reflecting successive government's 'legacy of neglect' and lack of concern for the growth of the State's provincial cities which, in turn, portrays a considerable level of antipathy towards cities and importantly, little understanding of the benefits of urban agglomeration. The aggregate shortfall of over one million in population has to be viewed in the context that this figure is nearly 22% of the entire State population in 2011.

APPENDIX 5

[*Vide* Appendix 3 from Hughes (2014)]

A Case Study on Urban-Rural Planning Strategy: Mayo's Draft Development Plan 2014

Dr Gavin Daly of Maynooth University (NUIM) in a posting, in WWW.Ireland after NAMA, dated 7th March 2014, pertinently draws attention to a controversial, recently endorsed amendment to Mayo's Draft Development Plan proposed by its County Councillors; one that risks being rejected by the Department of the Environment, for this geographically-large but sparsely-populated county. Their stated objective, as reported, seeks to grow the county's *rural* population: to increase it by nearly 35,000, with the objective of restoring it to the level pertaining in 1951. *Vide* Note 5 below.

In the 2011 Census Mayo was the fifth most rural-populated county in the State with just 37,895 out of a total 130,638, thereby having an 'urban' population of only 29.01%, all residing in its six towns and their environs (*i.e.* in descending size order: Castlebar, Ballina, Westport, Claremorris, Ballinrobe and Ballyhaunis), with an average population size of just 6,316. 'Urban' is defined by the CSO as being a settlement plus its contiguous environs of 1,500 or more people. Mayo has experienced almost continuous outward migration and rural decline, due to its historic over-dependence on largely subsistence agriculture, having few industries and with an absence of large urban centres.

In the Census of 1951 the county's total population was 141,867, 11,229 above that of 2011. At that time just 14,612 or 10.30% was 'urban' living in three towns (Ballina, Castlebar and Westport). Prior to April 2002 no Mayo town had exceeded 10,000 in population and up to that date Ballina was the county's largest town. In the absence of consolidation urban growth is notably weak: Castlebar, now the largest town increased, from 5,288 to 12,318 over the sixty year period since 1951; a rate of just 0.35% per annum.

In the NSS (2002-2020) the two largest Mayo towns Castlebar and Ballina, despite being spatially quite removed from each other - in a county which has the State's third-largest surface area - were contrived as a 'linked-Hub', overlooking the crucial emergence of county's fast-growing central Economic Corridor of Claremorris-Castlebar-Westport, centred on Castlebar. That decision was influenced by the now-discredited principle of Balanced Regional Development (BRD), the idealistic notion whereby every city, town, village and rural area is encouraged to achieve their full economic potential. A BRD spatial strategy is singularly unsuited to the fragile population densities of the RoS area of Ireland, where 'Hubs' are envisioned as having a minimum 20,000 population threshold.

Daly also notes the county Council's advice, that on Environment Assessment grounds, it is not deemed sustainable to restore the rural population to 1951 levels because of the inevitable proliferation effect of one-off housing in preference to the pressing need for urban consolidation the Draft Plan also disregards Mayo's existing surplus of 12,000 mostly newly-built, vacant housing stock. Evidence-based Planning when coupled with responsible behaviour by elected representatives can avoid most of the past, costly, planning mistakes, Daly notes.

Local politicians also appear to have ignored the need to 'densify': a necessary urban pre-requisite for firm clustering and employment creation. Specifically, they appear to have overlooked scale economies arising from urbanisation; the fast growing Tourism-Pilgrimage potential, focused on Knock and its nearby 'Ireland West' Airport, which is convenient to Castlebar and is *in proximo* to the numerous hotels and restaurants of Westport, the gateway to Ireland's sacred mountain, Croagh Patrick (765m). Westport is also a significant FDI Pharmaceutical location and has been Mayo's fastest growing town. Its recently-completed trail-blazing, tourism-friendly cycle-way from Westport to Achill has already proven to be a particular attraction of the Wild Atlantic Way.

Pivotally-located in the heart of this county's east-west road and rail *growth-corridor* is Mayo's largest town Castlebar, the county's administrative centre. The town was amongst the first three centralised locations for Government offices in Ireland. What is needed is spatial-economic analysis to investigate the potential for the aforementioned central Economic Corridor, in contrast to advocating widespread population dispersal, as reported, from Mayo's Council Chamber's deliberations. Daly emphasised that randomly built scattered housing will not resolving economic and population decline. Both ill-judged tax breaks and bad planning are costly.

Apart from 'living in the past', their councillors' approach exhibits a disturbing lack of understanding of urban economics and of the need and role for Mayo's lagging urbanisation, so as to establish a regional 'core' area in order to driver the county's prospective economic growth.

In conclusion, the contents of this March 2014 web-posting from NUIM, raise profound questions as to the philosophical-direction in their responsibilities for this county's public representatives: when these are counter-posed with their duties, civic leadership role and decision-making powers, *inter alia*, in such vital economic and in spatial planning matters. The pivotal, national, question is: can new Planning legislation and the Government's *Putting People First* governance initiative promote coordinated strategic economic and spatial planning appropriate to the twenty-first century?

Note 5: Shown bold above are this author's amendments to some of the demographic figures contained in Daly's web-posting. Specifically, these relate to the sentence: …In 1951 the population of County Mayo… The data for the populations of the three 1951 town were kindly provided by the CSO.

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