

Distribution Sub-Group (2020) Paper 11 –Population projections and mid-year estimates

This discussion paper has been written by officials of the Welsh Government. Ministers have not had an opportunity to comment on the contents. Exemplifications of changes are provided simply to inform discussion by DSG members. They are not Welsh Government proposals or statements of Government policy for or against changes.

2018-based subnational population projections and 2019 mid-year estimates

Summary

1. Welsh Government Knowledge and Analytical Services have published updated population projections for Wales. Alongside this, the Office of National Statistics (ONS) have published 2019 population mid-year estimates. This paper exemplifies the impact of the latest population data sets on the 2020-21 settlement.

Views sought

2. DSG are asked to consider the use of the following data sets on future settlements:
 - The latest set of population projections
 - The latest set of mid-year estimates
 - A rescaled approach outlined in late 2019, but updated using the latest mid-year estimates.
3. The group should note that these will be the last set of population projections until after the 2021 census.
4. Members are asked to confirm whether they would like to continue to manually adjust Wrexham's population figures, in respect of the opening of Berwyn prison.

Related papers

5. Distribution Sub-Group (2020) – paper 8: Population Projections
6. Distribution Sub-Group (2017) – paper 5: Prison Populations
7. Distribution Sub-Group (2016) – paper 19: Population Projections and Mid-year estimates comparison

Background

8. The population projections used within the settlement get re-based around every 3 years by Welsh Government Knowledge and Analytical Services to ensure the projections remain as accurate as possible.
9. 2017-based population projections were scheduled to be published in October 2019, ahead of the 2020-21 provisional settlement. On 24 October 2019, the Chief Statistician announced that the 2017-based subnational population and household projections were to be postponed. This was because of new data published by the Office for National Statistics, which showed a very different trend from the previous data, along with further issues raised during quality assurance of the projections that required further work to overcome.

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10. On 31 October 2019, the Welsh Government published a statistical article outlining the decision to postpone the 2017-based projections and move to publishing 2018-based subnational projections instead.
11. As DSG's recommended approach of using the 2017-based population projections was no longer available for the 2020-21 settlement, a teleconference was held with DSG members on 7 November to agree a recommended way forward.
12. The group considered four options for the 2020-21 settlement:
 - to freeze the data;
 - to roll the 2014-based projections forward to 2020;
 - to use the most up-to-date 2018 mid-year population estimates;
 - Or to use the rescaled projections approach of 2018 mid-year estimates and 2014 based population projections.
13. The majority of the group recommended that the 2018 mid-year estimates offered the most robust and relevant population estimate for the 2020-21 settlement year.
14. Given the lateness of the decision, and to adhere to the principle of stability within the terms of reference of DSG, the majority of the group agreed to phase the data change over two years, to reduce the turbulence in the funding distribution.
15. The group agreed to continue to adjust Wrexham's prisoner population, in light of Berwyn prison not being fully captured within the data.
16. The group also agreed to continue to use the phased population estimates for the final local government settlement, regardless of whether the 2018-based subnational population projections were published in the interim.
17. The 2018-based subnational population projections were published in late February 2020, after the publication of the final local government settlement for 2020-21. This paper analyses the data and exemplifies the financial implications of using this data within the 2020-21 settlement.
18. As well as the population projections, the 2019 mid-year estimates (MYE) have been published, which are the most up-to date population estimates accounting for the in-year deaths, births and migration. This paper analyses the data and exemplifies the financial implications of using this data within the 2020-21 settlement.
19. The paper also exemplifies the rescaled projections approach. The rescaled approach uses the latest MYE data and incorporates the change in the population projection between the year of interest and the projection year to match the MYE data used (i.e. in this case 2019 MYE + 2018-population projection for 2021 – 2018-population projection for 2019).
20. This method provides a mechanism to artificially rescale the projection base yearly. Using this methodology would likely mitigate against any large financial step changes observed when a new set of projections are produced and would provide a better estimate of the current base population in the settlement year than solely using the projections.

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Analysis

21. The analysis in this paper concentrates on two population data sets and provides three distinct options for consideration:

- the 2018-based population projections for 2021;
- Mid-Year population Estimates for 2019;
- The rescaled approach.

22. All three options are applied to the 2020-21 settlement, to illustrate updating the data.

Wrexham prison population

23. Within the 2018-population projections, the prison population included in the base was derived through a five-year average of prison populations for those prisons at capacity. In the case of Berwyn prison, in Wrexham, a two-year average was used.

24. Within the base estimates around 700 people were included in the special prison population for Wrexham. The MoJ figures estimated over 1,600 people within the prison, with the capacity yet to be reached.

25. DSG are asked to agree whether to continue to adjust Wrexham's population figures.

Movements in Population

26. Table 1 in Annex A compares the data used in the 2020-21 settlement (an average of the 2018 mid-year estimates and the 2014-based population projections for 2019) to the three options specified above: 2018-based population projections for 2021, MYE for 2019 and the rescaled approach (all having being respectively adjusted for Wrexham's prison population).

27. When comparing the 2018-based 2021 population projections and the actual population data used within the 2020-21 settlement, the population in Wales is projected to be 18,923 higher. This varies across the local authorities, with six authorities seeing a decrease.

28. Similarly, a difference of 16,896 is seen when comparing the 2019 mid-year estimates and with the phased population data.

29. Finally, a difference of 26,772 is seen when comparing between the rescaled approach and the phased population data.

30. Table 1 provides an overview of the change in total population between all the different population data sets considered in this paper.

Financial Impact

31. Table 2 in Annex B exemplifies the financial impact of the three population options, outlined previously, on the published 2020-21 total SSA.

32. Using the 2018 based population projections for 2021 (**option 1**), the overall changes in percentage shares across Wales range from -0.03% in Ceredigion and Wrexham to 0.04% Newport. Ceredigion and Wrexham would see the largest decrease in funding of approximately £1.9m and £1.7m respectively. Newport would have the largest

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increase in funding of approximately £2.6m, followed by the Vale of Glamorgan up nearly £1.5m.

33. When considering the 2019 mid-year estimates (**option 2**), the overall changes in percentage shares across Wales range from -0.03% in Wrexham, to 0.03% in Newport. Ceredigion and Wrexham would see the largest decreases in funding approximately £1.7m and £1.3m respectively. Newport would have the largest increases in funding of approximately £1.6m, followed by the Vale of Glamorgan up £1.25m.
34. Finally, considering the rescaled approach (**option 3**), the overall changes in percentage shares across Wales range from -0.03% in Ceredigion and Wrexham to 0.04% in Newport. Wrexham and Ceredigion would see the largest decreases in funding of approximately £2.1m and £1.9m respectively, whereas Newport would see an increase of £2.6m followed by the Vale of Glamorgan up £1.7m.
35. The large financial changes observed using these options largely reflect the use of the phased approach in the 2020-21 settlement and the divergence of the historic projections from the MYE.

Conclusion

36. Given the analysis outlined in the paper, the group are asked to consider the three population options provided.
37. Given the large financial changes observed using either of these options, the group may wish to consider a phased approach.

**Local Government Finance Policy
Welsh Government**

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Annex A

Table 1: Change in total population between the different population data sets outlined

Unitary Authority	Phased population data used within 2020-21 settlement	Percentage share	2018 based population projections 2021	Percentage Share	MYE 2019	Percentage share	Rescaled approach	Percentage change
Isle of Anglesey	70,067	2.2%	69,591	2.2%	70,043	2.2%	69,793	2.2%
Gwynedd	124,106	4.0%	124,826	4.0%	124,560	4.0%	124,914	3.9%
Conwy	117,115	3.7%	117,402	3.7%	117,203	3.7%	117,357	3.7%
Denbighshire	95,529	3.0%	95,232	3.0%	95,696	3.0%	95,609	3.0%
Flintshire	155,390	5.0%	156,344	5.0%	156,100	5.0%	156,566	5.0%
Wrexham	138,704	4.4%	136,177	4.3%	136,416	4.3%	135,809	4.3%
Powys	132,084	4.2%	131,640	4.2%	132,435	4.2%	131,920	4.2%
Ceredigion	74,778	2.4%	71,398	2.3%	72,695	2.3%	71,618	2.3%
Pembrokeshire	124,602	4.0%	125,467	4.0%	125,818	4.0%	126,079	4.0%
Carmarthenshire	186,998	6.0%	188,289	6.0%	188,771	6.0%	189,219	6.0%
Swansea	246,134	7.8%	248,797	7.9%	246,993	7.8%	248,343	7.9%
Neath Port Talbot	142,196	4.5%	143,621	4.6%	143,315	4.5%	143,834	4.5%
Bridgend	144,074	4.6%	146,740	4.7%	147,049	4.7%	148,241	4.7%
Vale of Glamorgan	130,294	4.2%	134,202	4.3%	133,587	4.2%	134,953	4.3%
Rhondda Cynon Taf	239,538	7.6%	241,903	7.7%	241,264	7.7%	242,380	7.7%
Merthyr Tydfil	59,719	1.9%	60,605	1.9%	60,326	1.9%	60,595	1.9%
Caerphilly	181,158	5.8%	181,416	5.8%	181,075	5.7%	181,305	5.7%
Blaenau Gwent	69,544	2.2%	69,441	2.2%	69,862	2.2%	69,679	2.2%
Torfaen	92,568	3.0%	93,638	3.0%	93,961	3.0%	94,342	3.0%
Monmouthshire	93,606	3.0%	94,506	3.0%	94,590	3.0%	94,837	3.0%
Newport	151,272	4.8%	156,427	5.0%	154,676	4.9%	156,716	5.0%
Cardiff	367,273	11.7%	368,171	11.7%	366,903	11.6%	369,102	11.7%
Wales	3,135,983	100.0%	3,154,906	100.0%	3,152,879	100.0%	3,162,755	100.0%
Wales adjusted for prisoner population	3,136,748		3,155,833		3,153,338		3,163,214	

Note: Due to time restraint between publication of the 2019 MYE and the May DSG meeting, the analysis has not been quality assured prior to the meeting.

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Annex B

Table 2: Exemplification to show the impact on the 2020-21 Total SSA using specific population options outlined

Unitary Authority	Total SSA								Difference in SSA					
	Published 2020-21 SSA ¹		SSA ² Option 1		SSA ³ Option 2		SSA ⁴ Option 3		Option 1		Option 2		Option 3	
	£000s	% share	£000s	% share	£000s	% share	£000s	% share	£000s	% point difference	£000s	% point difference	£000s	% point difference
Isle of Anglesey	142,316	2.3%	141,787	2.3%	142,161	2.3%	141,887	2.3%	-529	-0.01%	-156	0.00%	-429	-0.01%
Gwynedd	254,380	4.1%	254,126	4.1%	254,220	4.1%	253,965	4.1%	-254	0.00%	-160	0.00%	-415	-0.01%
Conwy	229,516	3.7%	229,442	3.7%	229,286	3.7%	229,198	3.7%	-74	0.00%	-230	0.00%	-318	-0.01%
Denbighshire	205,890	3.3%	205,225	3.3%	205,507	3.3%	205,280	3.3%	-665	-0.01%	-383	-0.01%	-610	-0.01%
Flintshire	286,087	4.7%	286,352	4.7%	286,090	4.7%	286,288	4.7%	265	0.00%	3	0.00%	201	0.00%
Wrexham	256,883	4.2%	255,157	4.2%	255,149	4.2%	254,832	4.1%	-1,726	-0.03%	-1,735	-0.03%	-2,052	-0.03%
Powys	267,839	4.4%	267,174	4.3%	267,433	4.4%	267,109	4.3%	-665	-0.01%	-407	-0.01%	-730	-0.01%
Ceredigion	150,200	2.4%	148,289	2.4%	148,947	2.4%	148,283	2.4%	-1,912	-0.03%	-1,253	-0.02%	-1,917	-0.03%
Pembrokeshire	247,581	4.0%	247,724	4.0%	247,751	4.0%	247,793	4.0%	143	0.00%	170	0.00%	213	0.00%
Carmarthenshire	375,549	6.1%	375,512	6.1%	376,018	6.1%	375,818	6.1%	-37	0.00%	469	0.01%	269	0.00%
Swansea	463,934	7.5%	464,529	7.6%	463,711	7.5%	463,907	7.5%	595	0.01%	-223	0.00%	-26	0.00%
Neath Port Talbot	292,996	4.8%	293,135	4.8%	293,087	4.8%	293,093	4.8%	139	0.00%	91	0.00%	97	0.00%
Bridgend	277,406	4.5%	278,426	4.5%	278,597	4.5%	278,994	4.5%	1,020	0.02%	1,190	0.02%	1,588	0.03%
The Vale of Glamorgan	244,317	4.0%	245,782	4.0%	245,567	4.0%	246,059	4.0%	1,466	0.02%	1,250	0.02%	1,743	0.03%
Rhondda Cynon Taf	494,615	8.0%	495,258	8.1%	495,004	8.1%	495,197	8.1%	643	0.01%	389	0.01%	582	0.01%
Merthyr Tydfil	122,423	2.0%	122,825	2.0%	122,550	2.0%	122,708	2.0%	402	0.01%	127	0.00%	285	0.00%
Caerphilly	366,320	6.0%	365,930	6.0%	365,948	6.0%	365,757	5.9%	-390	-0.01%	-372	-0.01%	-563	-0.01%
Blaenau Gwent	145,116	2.4%	144,870	2.4%	145,032	2.4%	144,945	2.4%	-246	0.00%	-84	0.00%	-171	0.00%
Torfaen	186,317	3.0%	186,698	3.0%	186,863	3.0%	186,984	3.0%	381	0.01%	546	0.01%	667	0.01%
Monmouthshire	160,273	2.6%	160,399	2.6%	160,551	2.6%	160,405	2.6%	126	0.00%	278	0.00%	132	0.00%
Newport	309,475	5.0%	312,114	5.1%	311,059	5.1%	312,089	5.1%	2,639	0.04%	1,584	0.03%	2,614	0.04%
Cardiff	668,213	10.9%	666,893	10.8%	667,117	10.9%	667,053	10.9%	-1,320	-0.02%	-1,096	-0.02%	-1,160	-0.02%
Wales	6,147,646	100.0%	6,147,646	100.0%	6,147,646	100.0%	6,147,646	100.0%	0	0.0%	0	0.0%	0	0.0%

¹Two year average of data used in 2019-20 settlement and 2018 mid-year estimates, adjusted for Wrexham's prisoner population

²2018-based population projections for 2021, adjusted for Wrexham's prisoner population.

³2019 mid-year estimates, adjusted for Wrexham's prisoner population

⁴Rebased approach using the 2019 MYE, adjusted for Wrexham's prisoner population

Note: Due to time restraint between publication of the 2019 MYE and the May DSG meeting, the analysis has not been quality assured prior to the meeting.