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Some Wisdom from Belgian Population Projections

R. Lesthaeghe, D. Willaert, J. Surkyn
(rlestha@vub.ac.be, dwillaer@vub.ac.be, jrsurkyn@vub.ac.be)

INTERFACE DEMOGRAPHY (SOCO)
VRIJE UNIVERSITEIT BRUSSEL
PLEINLAAN 2, B-1050 BRUSSELS, BELGIUM

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Interface Demography, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium
Tel: 32-2-629.20.40 Fax: 32-2-629.24.20 E-mail: esvbalck@vub.ac.be
Website: http://www.vub.ac.be/SOCO/
Vakgroep Bevolkingswetenschappen, Universiteit Gent, Korte Meer 3, B-9000 Gent, Belgium
Tel: 32-9-264.91.64 Fax: 32-9-264.91.98 E-mail: John.Lievens@rug.ac.be
Website: http://www.psw rug.ac.be/dephome/popmeth

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1. Three sets of population projections compared

In the present paper three sets of population projections and their scenarios are being compared:

(i) The 1995 national set prepared by the National Institute of Statistics (NIS) and the Federal Planning Bureau (FPB). This set has been produced for Belgium and its three regions (Brussels Capital Region, Flanders, Wallonia) and its main aim was to compare *different scenarios* with respect to the effects of fertility, mortality and international migration on the evolution of the population sizes and age structures till 2050. These scenarios were highly instructive, and of direct use for planning purposes since they highlighted the respective contribution of each of the demographic determinants involved. As a consequence, it is essential to incorporate the 1995 NIS-FPB set in this comparison.

(ii) The 2001 set prepared by NIS and FPB. The aim of this latest set is to produce population projections for each of the Belgian regions, provinces and arrondissements. Hence, its main purpose is to *disaggregate* to smaller administrative levels. On the other hand, no alternative scenarios have been introduced at the national level (one unique reference scenario). Compared to the 1995 set, this single national scenario particularly assumes a higher international immigration flow (about +17.000 p.a.).

(iii) The 2000-set prepared by the Interface Demography (VUB). The aim of this set is to produce projections at the most disaggregated level ever made for Belgium. More specifically, following a detailed study of internal migration (AGORA-project) and especially of suburbanisation trends for the 1990s, the territory was first divided in 17 *migration basins* of urban areas. Within each basin, a subdivision in *zones* was introduced (urban, suburban, rural). The zones of larger urban basins were further subdivided in *subzones*, respectively with migration pressure and without. The

Table 1: Comparison of hypotheses in Belgian population projections

	Fertility	Life expectancy	External Migr. Saldo
A. NIS-FPB projections of 1995			
1 Reference scenarios	TFR increase to 1.75 in 2010, then constant	life expectancy increases to 88 (F) and 82 (M) by 2050	+10.000 p.a., ct.
2 Scenario higher fertility	TFR increases to 1.90 after 2010		
3 Scenario higher immigration			+20.000 p.a., ct.
4 Scenario higher life expectancy		increase to 90 (F) and 84 (M) by 2050	
5 Reference – zero migration			+0 p.a., ct.
B. NIS-FPB projections of 2001			
1 Reference (only 1 natl. scenario)	TFR increases to 1.75 by 2050	life expectancy increases to 88 (F) & 82 (M) by 2050	+17.000 p.a. on average
C. Interface Demography projections, 2000			
1 Reference scenario	TFR = 1.62, ct.	life expectancy increases to 88 (F) and 82 (M) by 2050 (idem as NIS)	+10.000 p.a., ct.
2 Higher immigration			+17.000 p.a., ct.
3 Higher fertility & higher immigration	TFR = 1.75, ct.		+17.000 p.a., ct.

Sources: A: Nationaal Instituut voor de Statistiek en Federaal Planbureau: Bevolkingsvooruitzichten 1995-2050, Ministerie Economische Zaken, Brussel, s.d.
B: Institut National de la Statistique et Bureau Fédéral du Plan: Démographie mathématique – Perspectives de population 2000-2050, par arrondissement, INS, Bruxelles, 2001, mimeo.
C: D. Willaert, J. Surkyn, R. Lesthaeghe: Bevolkingsprojecties voor Belgische steden, migratiebekkens en zones. Interface Demography, Vrije Universiteit Brussel, DWTC, Brussel (to be published January 2002): see also: D. Willaert, J. Surkyn, R. Lesthaeghe: Bevolkingsprojecties voor Vlaamse grote en regionale steden en voor Brussel Hoofdstedelijk Gewest, Steunpunt Demografie Working Paper 2001-5, Vrije Universiteit Brussel, en Stedenbeleid, Ministerie Vlaamse Gemeenschap.

population projections are available for a total of 58 spatial aggregates (15 basins + 43 zones). The Interface Demography set contains three scenarios. They all deal with alternative paths concerning suburbanisation trends. Furthermore, projections were also prepared for the large and regional cities in Flanders (Flemish government, Stedenbeleid), again using three suburbanisation scenarios. Currently, this urban set is also being extended to the Walloon cities (AGORA). Finally, an overall national + three regions set has been produced using two fertility and two international migration scenarios. The whole set of results and comments will be available in January 2002, but several outcomes are already incorporated in this comparison.

The hypotheses used in the various scenarios of the national + three regions population projections are summarized in table 1. In what follows, we restrict ourselves first to these outcomes. Subsequently, we shall also introduce the outcomes for cities themselves.

2. Total population size: definitely declining without immigration

The overall trend for the total Belgian population, as produced by the various projections, is given in table 2 (in millions). The current national population of 10.2 million would shrink from now on, and would continue to do so till 2050 (end point), if it were not for Belgium's positive international migration balance. The NIS-FPB scenario (A-5), that assumes a closed population from 1995 onward, clearly illustrates this point. In this instance, the Belgian population would shrink to 9.99 million in 2020 and further to 9.02 million by 2050. This is obviously the result of subreplacement fertility as well, given that these outcomes are generated with a total fertility rate (TFR) that increases to 1.75 children only, i.e. well below the 2.07 level required for subreplacement and long term population stationarity. Rises in life expectancy to 88 years for women and to 82 years for men, as hypothesized for 2050, fail to counteract such a population decline. The rise in life expectancy needs to be higher than that (see C-4).

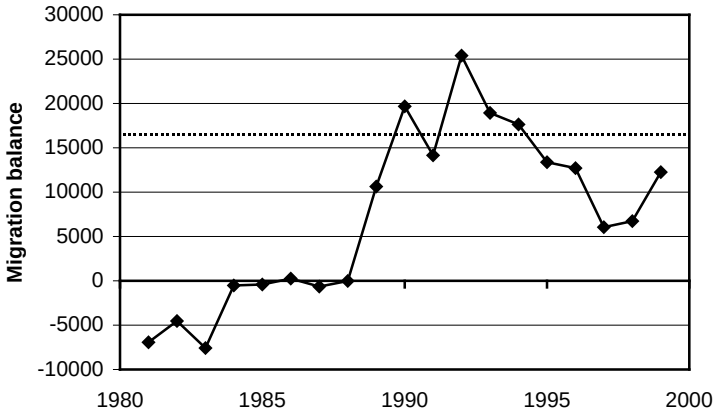
The decisive impact of immigration is equally evident from the 2001-set currently produced by the NIS and FPB. This projection assumes that fertility will rise further to 1.75 children, but equally incorporates a higher positive international migration balance of +17.000 persons p.a. In doing so, the new projections come closest to the "higher immigration" scenario produced in 1995 (migration saldo = +20.000 p.a.). The outcome is that the latest NIS-FPB projection (B-1) produces a growing population that almost reaches 11.0 million in 2050, and the earlier A-3 projection just

Table 2: Outcomes of Belgian population size in latest sets of projections (in millions)

	2000	2010	2020	2030	2040	2050
A. NIS-FPB 1995-set						
1 Reference scenario	10.23	10.33	10.34	10.31	10.18	10.00
2 Higher fertility	10.23	10.38	10.46	10.50	10.48	10.43
3 Higher immigration	10.25	10.52	10.72	10.91	11.03	11.14
4 Higher life expectancy	10.23	10.35	10.39	10.41	10.35	10.25
5 Reference, zero migration (closed pop.)	10.17	10.14	9.99	9.78	9.45	9.02
B. NIS-FPB 2001-set						
1 Reference (only 1 natl. scenario)	10.28	10.53	10.72	10.89	10.94	10.95
C. Interface Demography 2000-set						
1 Reference scenario	10.24	10.35	10.35	10.29	10.09	9.76
2 Higher immigration	10.24	10.43	10.54	10.59	10.51	10.31
3 Higher fertility & higher immigration	10.24	10.52	10.71	10.86	10.93	10.87

Source: see Table 1.

Figure 1: Total international migration balance, Belgium, 1981-1999



exceeded this level (11.1 million). Also the Interface Demography scenario with higher fertility (TFR = 1.75) and higher immigration (+17.000) comes in the vicinity of 10.9 million by 2050.

By contrast, higher immigration alone, i.e. combined with a lower fertility level of TFR = 1.62, fails to produce such population growth. In the A-2 set and the C-2 set (both higher immigration only), the projected national population size is 10.4 and 10.3 million for 2050. Yet, these two examples illustrate that stationarity with respect to overall size is still accomplished through international migration, provided that the *net annual intake for each of the 50 years is of the order of 16.000 to 20.000 immigrants*. In the light of the experience of the last 20 years, this is a noticeably higher figure (see graph 1).

With a combination of TFR = 1.65 and a net migration balance of +10.000 (see A-1), the Belgian population size can be kept up till 2030. Thereafter a decline is unavoidable. *Hence, an immigration surplus of +10.000 is in the long run incapable of compensating for low fertility at the level of TFR = 1.65 children*. By contrast, rising fertility to a TFR = 1.90 in combination with a more modest migration intake of +10.000 p.a. is capable of stopping a population decline (see A-2) by 2050 when compared to 2000. But after 2030, a small decline would still be witnessed.

The overall outcomes are as follows: the Belgian national population size will shrink if lower fertility (TFR = 1.65) is combined with more modest immigration (+10.000 p.a.). To stop this, fertility needs to increase and stay at least at the 1.90 children level. A higher annual immigration intake than 10.000, i.e. of the order of 17.000 p.a., produces a similar result if fertility remains low. A fertility increase to 1.75 and a higher immigration saldo *together* produce overall population increase. The latest NIS-FPB projection of 2001 assumes such a unique scenario, and is therefore to be qualified as an *optimistic variant* when compared to the reference scenario (A-1) of the earlier 1995 NIS-FPB projections and the reference scenario of the VUB (C-1).

3. Regional differentials: Flanders stands to lose most from prevailing trends

The total projected population sizes for the three regions are given in table 3. The immigration parameter is again of decisive influence. In the 1995 reference scenario (A-1), the population of the Brussels Capital Region (BCR) would decline from 952 thousand in 2000 to below 930 thousand without increased international migration. It would even decline to 900 thousand in the 1995 reference scenario (A-1), and also higher fertility would not be able to stop this negative trend (A-2). The 2001 NIS-FPB projection shows a markedly contrasting outcome: the BCR total population

would increase to 1.03 million by 2020 and further to 1.11 million by 2050. This growth scenario stems from several sources. Firstly, the high international migration saldo; secondly, a reduced suburbanisation intensity; and thirdly, a rise in fertility for the Belgian Brussels population combined with above replacement fertility for the non-EU population. This is, of course, the outcome of three, rather optimistic hypotheses combined.

Table 3: Total population (in thousands) of the Belgian regions in 2020 and 2050 in latest sets of projections

	Brussels Cap. Region		Flanders		Wallonia	
	2020	2050	2020	2050	2020	2050
A. NIS-FPB 1995-set						
1 Reference scenario	907.3	900.2	6006.4	5686.2	3424.4	3414.0
2 Higher fertility	917.3	930.0	6074.9	5936.0	3465.2	3560.2
3 Higher immigration	1023.9	1220.9	6152.3	6133.4	3541.3	3784.4
4 Higher life expectancy	911.5	917.0	6038.5	5834.8	3442.7	3497.1
B. NIS-FPB-2001 set						
1 Reference (only 1 natl. scenario)	1031.1	1106.4	6141.4	6070.3	3551.4	3775.9
C. Interface Demography 2000-set*						
1 Reduced emigration from cities	1038.6	-	5891.4	-	3354.6	-
2 Enhanced emigration from cities	960.0	-	5948.6	-	3380.9	-
3 Reduced emigration, then return to cities	1059.7	-	5862.4	-	3342.1	-

*All projections assume constant fertility of the regions and regional subdivisions (levels of 1998-2000) and international migration saldo for Belgium as a whole of +10.000 p.a.; corresponds with the lower fertility, lower international immigration scenario of tables 1 and 2. For the regional set, the Interface Demography uses additional scenarios with respect to internal migration as well. The scenarios mentioned above refer to these internal migration alternatives.

Within this combination, the lower suburbanisation trend is the most important one. Also the Interface Demography scenarios produce growth for the BCR by 2020 if the suburbanisation loss is curtailed (C-1) or reversed (C-3). To sum up, this illustrates once more that the international and internal migration hypotheses are crucial in the present endavour to avoid further BCR population loss.

The Flemish region had a total population of 5.87 million in 1995 and 5.94 million in 2000. The 2001 NIS-FPB projections envisage further growth till 2020 to 6.14 million, and still maintain a population above 6.00 million for 2050. This optimistic projection is not corroborated by the Interface Demography projections for Flanders. The main reason is that the VUB-set is based on lower fertility and on a national immigration surplus of +10.000 only. Solely if suburbanisation away from Brussels and in favour of Flanders were to resume (C-2), would the Flemish population stay at the 5.95 million level by 2020. In all other instances, Flanders would suffer the largest population decline.

The Walloon population of 3.31 million in 1995 and 3.34 million in 2000 is projected to increase to 3.55 million in 2020 and to 3.78 million in 2050 (B-1). The earlier NIS-FPB projections of 1995 yielded similar outcomes (see especially A-3 with higher immigration). The three VUB projections for 2020, however, are again more pessimistic, and essentially show a status quo (between 3.34 million to 3.38 million).

Overall, the latest NIS-FPB projection of 2001 gives a total increment between 2000 and 2020 of about 8 percent for the BCR, of 6 percent for Wallonia, and of 3 percent only for Flanders. With lower fertility and especially a lower international influx, the VUB reference scenario C-1 based on weaker suburbanisation yields an increase of about 11 percent over the twenty years for the BCR, a status quo for Wallonia, and a net loss of –1 percent for Flanders. Evidently, Flanders and Wallonia both compete with the BCR (alternative suburbanisation trends), but Flanders is (i) more vulnerable to an "end of suburbanisation", (ii) profits less (proportionately) from international migration, and (iii) has lower fertility too. If these circumstances remain, Flanders will be the main candidate for a small population decrease by 2020. But again, this presupposes that the BCR maintains its current overall favourable migration balance, and that there is no new upsurge of suburbanisation in favour of its Flemish perifery.

4. Working age population, older population and ratios

Tables 4 and 5 contain the national figures for the projected evolutions of the potentially active population (aged 20-59), and for the older population (aged 60+), both sexes combined. Table 6 gives the evolution of the ratios between the older persons per 100 of the potentially active population.

At present, the overall working age population is particularly large. This is mainly caused by the presence of the large birth cohorts born in the 1960s, who are currently at peak labour force and productivity ages, i.e. between 30 and 40. Also in relative terms, we benefit from a large overall working age population since the share of children below 20 has been declining as a result of subreplacement fertility and since the major ageing wave has not yet occurred. All of that will change quite dramatically during the first half of the 21st Century.

Firstly, the absolute size of the potentially active population is likely to start declining from 2020 onward. At that time the large cohorts born during the 1960s "baby boom" will reach retirement

Table 4: Potentially active population ages 20 to 59 in Belgian population projections (in thousands)

	2000	2010	2020	2030	2040	2050
A. NIS-FPB 1995-set						
1 Reference scenario	5567	5570	5348	5024	4878	4755
2 Higher fertility	5567	5567	5353	5075	4987	4935
3 Higher immigration	5587	5694	5590	5400	5397	5427
4 Higher life expectancy	5567	5574	5359	5042	4902	4786
5 Reference – zero migration	5537	5460	5120	4625	4346	4114
B. NIS-FPB 2001-set						
1 Reference scenario	5615	5682	5521	5279	5222	5166
C. Interface Demography 2000-set						
1 Reference scenario	5578	5609	5392	5001	4784	4583
2 Higher immigration	5578	5659	5500	5181	5044	4906
3 Higher fertility & higher immigration	5578	5659	5500	5267	5214	5179

Sources: see Table 1.

Table 5: Population aged 60+ in Belgian population projections (in thousands)

	2000	2010	2020	2030	2040	2050
A. NIS-FPB 1995-set						
1 Reference scenario	2235	2409	2743	3078	3169	3170
2 Higher fertility	2235	2409	2743	3078	3169	3170
3 Higher immigration	2235	2417	2765	3125	3258	3316
4 Higher life expectancy	2237	2426	2786	3162	3313	3385
5 Reference zero migration	2241	2436	2811	3197	3259	3181
B. NIS-FPB 2001-set						
1 Reference scenario	2249	2524	2928	3343	3500	3557
C. Interface Demography 2000-set						
1 Reference scenario	2241	2451	2845	3261	3386	3363
2 Higher immigration	2241	2455	2852	3273	3416	3437
3 Higher fertility, higher immigration	2241	2455	2852	3273	3416	3437

Source: see Table 1.

Table 6: Ratio population 60+/population 20-59 in Belgian population projections (x100)

	2000	2010	2020	2030	2040	2050
A. NIS-FPB 1995-set						
1 Reference scenario	40.1	43.2	51.2	61.3	65.0	66.7
2 Higher fertility	40.1	43.3	51.2	60.7	63.5	64.2
3 Higher immigration	40.0	42.4	49.5	57.9	60.4	61.1
4 Higher life expectancy	40.2	43.5	52.0	62.7	67.6	70.7
5Reference-zero migration	40.5	44.6	54.9	69.1	75.0	77.3
B. NIS-FPB 2001-set						
1 Reference scenario	40.1	44.4	53.0	63.3	67.0	68.9
C. Interface Demography 2000-set						
1 Reference scenario	40.2	43.7	52.8	65.2	70.8	73.4
2 Higher immigration	40.2	43.4	51.9	63.2	67.7	70.1
3 Higher fertility & higher immigration	40.2	43.4	51.9	62.1	65.5	66.4

Source: see Table 1.

age. This is the so called “pig in the snake”-effect. In table 4, all scenarios show this drop in 2020 and later, including the scenarios with higher fertility and higher international immigration. But, by 2050, the outcomes are much more diversified. The higher immigration scenario (+20.000) in the 1995 NIS-FPB projections yields the smallest drop in working age population: from 5.59 million in 2000 to 5.43 million in 2050. The higher fertility scenario follows as the next best (drop to 4.94 million) (see A-3 and A-2). However, the time path of each of these two effects is different: higher immigration has a more direct effect in the shorter run, but loses weight in the longer run (i.e. as immigrants age as well!). The higher fertility-effect is a typically long run effect: first children need to be born and educated, and only then do they contribute to the labour force. Hence, if a later time horizon than 2050 were used, the higher fertility scenario (return to TFR = 1.90) would be the ultimate winner. Finally, the zero migration scenario in the 1995 set (A-5) illustrates that a TFR = 1.65 in tandem with a closed population would lead to a serious shrinkage of the potential labour force, i.e. from 5.54 million to just over 4.0 million (or a reduction by a full quarter). The outcomes so far illustrate that both higher immigration and higher fertility would both be of considerable help in preventing such an outcome.

The latest NIS-FPB projection of 2001 comes again closest to the “higher immigration” scenario of 1995. This is not surprising given the international immigration balance of +17.000 p.a. (see B-1). The same equally holds for the Interface Demography alternative with higher fertility and higher immigration (see C-3). In all such instances, the working age population 20-59 could still be larger than 5 million by 2050. In all other scenarios, there is a further drop, and even to the level of 4.5 million in the VUB reference scenario (C-1) with a TFR = 1.62 and a migration bonus of +10.000 p.a.

The evolution for the older population 60+ is of course the reverse. At present the total for this age group is 2.25 million for Belgium as a whole. This number will be steadily increasing, no matter what. Moreover, there will be an acceleration as the baby boomers join this age group, i.e. between 2020 and 2030. Nevertheless, the outcomes by 2050 are still quite different depending on the fertility and international migration hypotheses. For instance, the reference and zero-migration scenarios (A-1 and A-5) produce the smallest number of people aged 60+, simply because lower numbers or no migrants have been added who are also crossing the border of retirement. The higher immigration scenario of the recent NIS-FPB projection set produces even higher numbers of persons above 60, i.e. 3.56 million (see B-1). This corresponds to rise of 58 percent compared to 2000. The VUB projections yield smaller increments, but these are again highest for the higher

immigration scenarios (C-2 and C-3), with an increase of 53 percent compared to 2000. To sum up, not only rises in life expectancy and the upward shift of the "baby boom" produce larger numbers of older people, but the ageing of future immigrants too has a contribution in this direction.

A more complete picture emerges from the ratios between these two population segments. These are offered in table 6. At present Belgium has 40 older persons (60+) per 100 working age population (20-59). By 2020, this will *at best* only increase to 50, and in the worst scenario to 55 (see A-3 and A-5 respectively). The best outcome is produced by the high immigration scenario (+20.000 p.a.) and the worst by the closed population assumption. By 2050, this still holds: the ratio will climb to a minimum of 61 with steady high immigration (+20.000 p.a.) and to a maximum of 77 (closed population). The higher fertility hypothesis (TFR rising to 1.90 children) is again the second best by 2050, with a ratio of 64 (see A-2). But, as indicated before, the effects of higher fertility are lagged, but at the same time more lasting than the effects of sustained high immigration.

The latest NIS-FPB set of 2001 holds the middle ground with respect to this ratio (see B-1), despite the high immigration hypothesis (+17.000 p.a. for each of the 50 years), and also the higher fertility – higher immigration tandem in the VUB set (C-3) gives comparable results.

From all these projections, there is a clear set of conclusions:

(i) The deteriorating ratio cannot be stopped, unless one is willing to accept *unrealistic* figures with respect to fertility increases (well above replacement) or massive immigration;

(ii) Higher immigration is not totally ineffective, but reduces the increase in the ratio to about 60-65, which is *significantly less* than 75-80 in the case without migration;

(iii) A return of fertility to levels closer to replacement has a lagged effect, but is in the long run the *only safer* outcome. Immigrants are "substitutes for births" in the more immediate future, but not in the longer run.

(iv) The tandem of higher fertility coupled to higher immigration is of course the best solution from the demographic point of view. To this, much *higher labour force participation rates* for both sexes, and particularly after age 45, would equally substantially contribute to alleviating the picture. But again, these are solutions that only operate for several decades following their implementation. In the longer run, i.e. after 2030 or 2040, their effects will ware off, and that of subreplacement fertility (if

continued) will regain the upper hand again. *In short, ultimately there is no way around sustained subreplacement fertility*.

5. The urban picture: growing diversity with respect to ageing

The Interface Demography VUB has produced a set of urban projections, as indicated earlier. In table 7, the ratios of the population 60+ per 100 persons 20-54 are given for 18 selected Belgian cities. These projections only have a time horizon till 2020, given that local population projections are highly determined by migration flows. Another consequence of this is that the scenarios solely concern alternative migration hypotheses. Hence, for both fertility and mortality only a single hypothesis is maintained. More specifically we have maintained the TFRs constant for each city at their 1996-99 level, whereas life expectancy evolves according to the NIS-FPB trend, implying a rise to 83.5 years for women and to 77.5 years for men by 2020. The migration scenarios are built along three possibilities:

1. An "end of suburbanisation"-scenario. In this set, the net migration rate of most cities reaches the zero level by 2005, and remains zero thereafter. This is still different from a closed population projection since *age-specific* net migration rates are not of necessity zero. This only holds for all ages combined. For a few cities with particularly high population loss through emigration in the past, the net migration rate remains negative, but implying much smaller losses (e.g. Kortrijk, Liège, Charleroi). Cities that had a small positive net migration rate, maintain this positive value throughout the projection (e.g. Ostend).
2. A "new suburbanisation wave"-scenario. Here we simulate a new wave of suburbanisation and migration to rural areas, similar to what happened at the end of the 1980s and during the early 1990s. It is assumed that urban migration balances become more negative, and reach a minimum value in 2020 that is set at 80% of the lowest negative value reached in the period 1981-99.
3. An "re-urbanisation"-scenario. This is the opposite of scenario 2. It runs parallel to scenario 1 until 2005, but thereafter urban net migration rates are allowed to improve further and to acquire positive values. There is, however, an upper ceiling, set at half the absolute value of the minimum (negative) net migration rate assumed for 2020 in scenario 2. A few regional cities are allowed to reach the maximum positive value witnessed over the last 20 years.

Hence, scenario 1 is taken as a reference, whereas scenarios 2 and 3 simulate opposite tendencies. The "re-urbanisation" scenario is, however, not a perfect mirror image of the "new suburbanisation

wave" scenario, since its city-bound migration flows are smaller than the outward flows of scenario 2.

Table 7: Ratio population 60+/population 20-59 (x100) in 18 selected Belgian cities; observed values 2000 and projected values 2020 according to three suburbanisation/urbanisation scenarios

	2000	2020		
		Scenario 1	Scenario 2	Scenario 3
A. Brussels Capital Region	38.3	35.4	37.5	35.0
B. Flanders				
Antwerp	49.0	47.9	53.6	46.8
Ghent	43.2	44.8	49.7	43.9
Mechelen	44.5	46.9	52.2	46.0
Genk	33.9	49.5	56.5	48.3
Leuven	37.7	38.2	45.8	37.0
Bruges	45.1	59.4	61.5	57.5
Kortrijk	46.5	61.7	60.8	59.6
Hasselt	39.2	61.8	64.0	62.4
Ostend	59.5	93.4	102.4	86.2
C. Wallonia				
Liège	45.1	48.3	58.5	44.5
Charleroi	42.1	52.4	58.0	49.0
Mons	38.1	52.5	64.4	49.3
La Louvière	40.0	49.7	51.4	48.2
Verviers	42.5	49.2	53.6	45.3
Arlon	35.9	42.5	44.7	35.5
Namur	40.7	54.7	57.6	52.0
Tournai	42.8	57.5	60.6	56.4
NIS-FPB reference. total Belgium (B-1)	40.2	———	52.8	———
VUB-reference. total Belgium (C-1)	40.1	———	53.0	———

Source: Interface Demography,VUB., urban population projections, forthcoming 2002.

We now turn to the ratios of table 7. At the national level, the ratio of older people (60+) to the working age population (20-59) is 40, and in both the latest NIS-FPB and VUB reference scenarios, the ratio increases to about 53 by 2020. Already in the starting year, there is a substantial degree of heterogeneity among cities in this respect. For instance, Genk, Hasselt, Mons, Arlon and the BCR have ratios well below the national figures (=40), whereas other cities such as Antwerp, Kortrijk, Ostend and Liège had older populations. This heterogeneity remains, but by 2020 some city positions may change. The overall picture can be summarised as follows:

1. Large urban areas with a sizeable non-EU population benefit from the higher fertility of these minorities, and as a consequence they tend to have the *smallest increments* (if any) in the ageing ratio used here. This holds particularly for the BCR which will become the most "youthful" city of all (even under conditions of scenario 2). The BCR not only benefits from higher "ethnic" fertility, but it also absorbes a sizeable portion of the international immigration as well. Antwerp, Ghent, Mechelen and Liège have higher ratios to start with,

but the increments are again modest by 2020. Also Leuven joins this group as a result of its high influx of young Belgian adults.

2. The middle group is made up of a small set of Walloon regional cities with higher increments of the ratio (of the order of +7 to +10 if scenario 1 is taken as the benchmark). This includes Charleroi, La Louvière, Arlon and Verviers.
3. The top group, with considerably larger ageing increments, is predominantly made up of Flemish regional towns : Bruges, Kortrijk, Genk, Hasselt, and particularly Ostend. But also three Walloon towns join this group, i.e. Mons, Namur and Tournai.

As expected, a new suburbanisation wave (scenario 2) would adversely affect the ratios, but the effect is not the same for all cities. A number of towns would limit the damage, and the BCR is among them. On the other hand, Mons, Charleroi, Ostend, Leuven and Genk would have the highest additional increments in their ratio induced by such a new suburbanisation trend. A bit further down the line, also Antwerp, Mechelen and Charleroi would be affected.

Conversely, a re-urbanisation trend (scenario 3) could produce urban ageing ratios for 2020 that are more favourable than the ones currently observed for 2002. This holds again for the BCR, but also for Antwerp, Ghent, Leuven, Liège and Arlon. At the other extreme, a re-urbanisation trend would fail to prevent a substantial deterioration of the ratio in Genk, Bruges, Kortrijk, Hasselt, Ostend, Mons, Namur and Tournai. Once again a cleavage emerges between the larger urban agglomerations and many provincial or regional cities.

The picture that emerges from all three scenarios is that the relative ageing burden for the potentially active population will not deteriorate as much in the large cities during the next 20 years as in many regional towns. Furthermore, the BCR will stand out, contrary to what is often believed, as having the most favourable ratio of all, and by a wide margin too.

5. Conclusions

This round-up of population projections highlights a number of basic demographic features:

1. The price of 25 years of sustained below-replacement fertility and of the continuation of low fertility into the 21st Century is *enhanced ageing*. The low fertility effect is furthermore larger than the effect of rising life expectancy. Up till 2015 the upward ageing trend is more

modest, but there is an acceleration when the "baby boom" of the 1960s reaches retirement age.

2. The other effect of low fertility is that the nation is becoming more and more dependent on international immigration for sustaining overall population size and for maintaining its potential labour force size as well.
3. Higher international immigration can only *partially* offset the ageing trend. With an influx of +20.000 migrants per year, the relative ageing ratio will still increase from 40 older people per 100 working age population in 2000 to about 61 in 2050. Without such immigration, this ratio would further increase to 77 instead.
4. A longer run demographic stability can only be achieved by rising fertility to levels that are much closer to replacement, i.e. to a TFR = 2.07 children on average.
5. Belgian cities are already quite heterogeneous with respect to their ageing ratios, and this heterogeneity is likely to increase, irrespective of whether there is an end to suburbanisation or a renewed suburbanisation wave. The larger agglomerations, in general, will have less ageing than many regional cities, both in Flanders and Wallonia. The Brussels CR is highly likely to have the most favourable ratio of older persons per 100 adults of all cities. This is essentially due to its large non-EU population with higher fertility and to the substantial share of international immigration directed to the Brussels CR.

Obviously, policy variables of an economic or social nature can cushion the demographic impact of ageing. For Belgium, particularly three such variables warrant attention:

1. Ever since the 1974 oil crisis and especially since the 1980s recession, Belgian labour force participation rates (particularly for men above 50 and women above 45) have been falling to low levels. Numerous studies have drawn attention to the fact that Belgium is located at the European tail in this respect. But, in practice, no serious improvement has taken place during the 1990s. Instead, early retirement has become a widespread popular expectation. If this is not counteracted, the demography of shrinking working age population will have its full weight on the Belgian economy (or require more immigration). If the trend of low labour force participation is reversed, then the net (= actually employed) labour force size will not substantially contract in the next two decades, and Belgium will be less dependent on immigration.
2. The Belgian national debt, which is still as large as GDP in 2001, will have to be reduced faster than during the last few years. In fact, it should be reduced to negligible levels by 2015, i.e. before the acceleration of costs associated with ageing.

3. Urban policies will increasingly have to face differential problems. In the Brussels CR and other large agglomerations, the integration of non-EU population segments (second + third generation, new immigrants) will remain high on the agenda. Regional towns will particularly have to cope with a growing inbalance between older population and working age population, and even more so than the larger agglomerations.