I. INTRODUCTION

1. The effect of international migration on the demographic dynamics of countries has been abundantly addressed by demographic, historical and economic literature from many viewpoints, reference periods and research sources. Essays and analyses devoted to the great historical and contemporary migrations represent a highly consolidated discipline of historical studies. Some historians\(^2\) have even considered migration as the cornerstone of their interpretation of the course of history without which the history of the human species could hardly be construed as having its origin in the modest African household. Furthermore, for some historical periods since the 15\(^{th}\) century, due primarily to the great discoveries and colonial adventures, migration and history are

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\(^1\) This paper has been prepared at the invitation of the secretariat.
inseparable. The same is valid in relation to the countries of the “New World”: America³ and Oceania.

2. It is not feasible to sketch even an approximate overview of possible interpretations of the impact of migration in different historical periods or geographical areas. Many of these interpretations have been predetermined by the information available on population movements⁴, what we know now as demographic statistical information. Without these sources, historical researchers could not go further than the old chronicles where the size of the population, its characteristics and movements were deduced from the opinions of scholars or travellers⁵. We should also mention the tremendous impact that the systematic utilization of either ancient⁶ or recent demographic sources had on historical research, as well as the use made of quantitative information.

3. However, historical researchers of cross-border migrations (or long-distance migrations prior to the consolidation of nation states) were not able to identify migration as a more or less independent factor which affected population (as a dependent variable). The great historical syntheses⁷ were constructed from a possibly less precise but more integrated vision of international migration. All population movements, especially those from the rural to the urban environment, were considered as a single process of change. Furthermore, a more interlinked view of historical development was elaborated where military conflicts, long-distance exchanges of goods, capital flows and economic accumulation were all combined.

4. The study of the so-called “demographic” impact of international migration is certainly a very recent aspect of what may be considered at first glance to be a strange subject for discussion. It is significant, moreover, that the essential aspect of the studies and debates has not been the analysis of the past or present, but consideration of the future. There is no doubt that the most influential document forming the basis for discussion of the influence of migration on demography is the United Nations report Replacement migration (2000).

5. This paper is not intended to review the methodological assumptions, instruments of analysis and conclusions of the studies on the demographic effects of international migration (on ageing or other matters). There have been numerous studies in many countries as well as in Spain⁸. However, some of the more striking or paradoxical aspects of many of these approaches should be mentioned. Most noticeable is the fact that such studies consider the population of a country and the rest of the world as independent entities, the evolution of which is the subject of study. It represents a certain essentialisation of both entities (them and us) that becomes harder to sustain the longer the period of time encompassed by the study.

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⁴ Carreras & Tafunell (2005).
⁵ Ibn Jaldun (1997 [1857 {1382-1397}])
⁸ Oficina Económica del Presidente [President of the Government’s Economic Office] (2006) President of the Government’s Economic Office, but there are many papers from Banco de España [Central Bank], Instituto de Estudios Fiscales, FEDEA and others, etc.
6. It is not easy for such studies on the demographic influence of migration to avoid tautology. When covering a sufficiently long period, the studies obviously conclude that the outcome of positive migratory balances is the increase in size of the inbound population, while the impact on all the other phenomena (birth rate, death rate, labour market, etc.) is essentially transitory and dependent on the other social and economic phenomena involved. Furthermore, a medium- or long-term analysis has to overcome two challenges. First, the foreign background has to be seen as an “inheritable” characteristic from a given moment. Secondly, these studies seem to forget that when applying the same criterion retrospectively, a proportion of indigenous population becomes increasingly harder to find the further we go back in time. Some authors, therefore, have suggested that some of the current debate on immigrants/foreigners may be no more than the displacement of similar demographic debates on races that took place in the early days of the construction of statistical systems, between 1880 and 1940. At this time, the actual term race could not be mentioned, even indirectly, without evoking all the historic 20th century disasters.

II. RECENT MIGRATION TRENDS IN SPAIN

7. The evolution of international migration in Spain is currently one of the most significant social change phenomena in the demography of the ‘old continent’, along with Ireland and Italy. The changeover from being a country of emigration to one of immigration, which has also taken place in other countries of late or intermediate development, has been extraordinarily swift. Various factors have helped to make the Spanish situation exceptional both in absolute and relative terms. The phenomenon is well known and it is sufficient to mention just a few of its parameters:

(a) The Population Census of 2001 (1 November) set the resident population in Spain at 40.85 million. During the period 2002-2007, the Statistics of Residential Variations (international movements taken from the Padrón, Spain’s Population Register) recorded just over 4.4 million immigrants, 95% of them foreigners;

(b) As a result of this very marked process, which was also accompanied by an increasing number of departures, the resident population of Spain at 1 January 2008 according to the Now Cast Population Estimates (the statistical study presented in this paper) was 45.28 million.

(c) This extraordinary demographic evolution is largely confirmed by all statistical sources and records. The differences in the definitions, population groups affected or recording systems are considerable and do not always match up with regard to the time profile. Although the majority of the sources only allow us to analyse the population by nationality and, therefore,

10 Todd (2001).
12 The well-known author of Cousins and strangers (1989) and of other extraordinary studies, José C. MOYA, mentioned this in a discussion group at a conference in Madrid on February 2008.
14 The 2007 data are provisional.
underestimate the impact of immigration, sound evidence of the extraordinary increase in the number of recent immigrants in the Spanish population is supplied by:

(i) The increase in Residence Permits applied for and granted;

(ii) The rise in foreign contributors both to the Social Security and to the Inland Revenue (Tax Agency);

(iii) The increased number of foreign students in Spain’s education system (the subject of tremendous social debate at this time);

(iv) The increase in the immigrant population integrated in the National Health System (Health Card register), which is also another crucial subject of actual debate in Spain;

(v) The evidence from other sources, such as the rise in the number of births with a foreign father or mother, and the dynamics of Spanish nationality acquisitions by foreigners residing in Spain, not to mention a wealth of local and regional studies and research;

d) The empirical evidence of the same phenomenon provided by the Labour Force Survey is especially significant as it is a source distinct from the Padrón Population Register with regard to its sampling frame. It is also a clear proof of the link between immigrant flows and the extraordinary increase of the involvement of this group in the labour market;

(e) Although as of November 2007 we may observe a clear slow-down of entries, 2007 was the year that recorded the largest number of immigrants, about a million new arrivals.

III. NECESSITIES ASSOCIATED WITH THE MEASUREMENT OF THE POPULATION IN THE SPANISH STATISTICAL SYSTEM

8. All countries face difficulties when monitoring their population dynamics, which is mainly linked to international migration. In classical systems and the Anglo-Saxon world, censuses have time and again resulted in significant corrections to the current estimates, although this matter is forgotten in the long inter-census interval. Even in countries with advanced population records, the statistical sources do not monitor the population (illegal, irregular or unregistered migrants) that lacks some of the characteristics that will give them equal rights with the citizens. At the same time these people may have a permanent residence in the country, participate in its labour market or consume the goods and services. Furthermore, in the European context of freedom of movement and establishment of residence, the statistical systems face additional challenges because of the lack of information and incentives for recording changes of address.

9. Historical circumstances have undoubtedly provided the opportunity for Spanish statisticians to make a notable contribution over the last ten years. Although there is still a lot of

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work to be done, few countries as big and complex as Spain have put such great effort into improving their instruments of demographic information. The process of centralisation, integration and improvement of the *Padrón* Population Register, which was initiated in 1996, has turned the Population Register into the core of Spain’s demographic information.

10 To understand the characteristics of the Spanish statistical system for the production of population figures, it should be noted that it is a mixed system:

(a) Spain is developing a demographic information system based on registers, primarily the *Padrón* Population Register. The actual history of Spain has resulted in this exceptional solution, with a strong role played by the Local Councils and an essential part played by the National Statistical Institute (INE). Neither of these circumstances arises in countries with advanced population records, where the agency maintaining the register is usually a central government bureau, always independent of the statistical office (which is a user and has a limited capacity to be involved in management);

(b) The state of maturity of the municipal registration system still does not allow the population figures to be deduced directly from the register, mainly for the following reasons:

(i) Present INE statistical operations require current population figures all the time while, due to its administrative nature, the *Padrón* figures are approved at least a year from the date of reference;

(ii) Despite the tremendous progress made, centralisation and cross-checking of data between municipalities is still recent, administrative regulation is not adequately stable\(^{16}\) and the level of “administrative corrections” with regard to pure demographic events still has to be reduced and regularized;

(c) The information from Padrón on population flows, entries and exits is an extremely useful source of information for monitoring current demographic circumstances despite the considerable delay in the Padrón population counts with respect to the reference date and the need to improve the consistency of stocks and flows in the intertemporal demographic balance.

\(^{16}\) The recent improvement established on expiry of registrations of Non-Community Foreigners without a Permanent Residence Permit has had favourable effects, but has introduced a temporary mismatch between stock and flow growth rates.
IV. THE SPANISH CONTRIBUTION TO CURRENT POPULATION ESTIMATION METHODOLOGIES: USE OF THE RICH, UP-TO-DATE INFORMATION ON INTERNATIONAL MIGRATION RECORDED BY THE PADRÓN POPULATION REGISTER

11. The essential elements of the methodology of Nowcast Population Estimates are straightforward and combine the strong points of each aspect:

(a) Classical estimation and forecasting methodologies provide a sound and consistent frame for the handling of demographic phenomena and permit a reasonable prediction of the most inertial aspects of the system: the trend in the birth and the death rates. In addition, the future trend has the benefit of Demographic Transition as a fairly well developed and discussed theoretical frame, which provides reasonable evidence of what the short-term evolution will be;

(b) As a population register the Padrón provides particularly valuable supplementary demographic information: the record of both internal and international migration. Migration is therefore the key ancillary aspect that the classic forecasting mechanisms are unable to model and predict satisfactorily. The relationships between emigration and resident population are particularly unstable, and it is obvious that immigration has no connection with the demographic features of the receiving population. No probabilistic measure may be applied to immigration as is the case with other demographic phenomena. Therefore, the use of actually recorded migration information as a supplement to a classical estimation mechanism has tremendous advantages;

(c) Considering the exhaustiveness of information deduced from the Population Register, its use has significant advantages. In addition to the basic characteristics (age and sex at NUTS3 level), the other information available in the register can also be used: precise nationality, detailed country of birth and municipality of residence. This has some significant impacts:

(i) The results of the registration may be examined in more detail and monitored for consistency. Decisions on the level of international migrations are made with the aid of considerable information on their features (detailed country or municipality of origin, precise nationality and municipality of arrival, accompanied by age and sex);

(ii) The information source imposes no limits on the territorial detail for which results may be produced\(^\text{17}\), since the information is collected at detailed postal address level.

12. Work started on the tasks of preparing a new system of Nowcast population estimates in the course of 2003. These estimates have been applied operationally as reference figures of the INE sampling surveys since 2004 and of National Accounting since 2005. They were first published as results and as an independent statistical operation in July 2007.

\(^{17}\) This is an essential aspect within the process of strong administrative decentralisation in Spain. The way of producing current estimates with a longer time delay is currently being studied for all the Balearic and Canary Islands, in conjunction with the statistics offices of these Autonomous Communities, within the same methodological pattern.
13. The essential features of this statistical operation are:

(a) The published results are the population broken down by age and sex for the National Total and by Autonomous Communities (up to 100 years and more) and by Provinces (up to 85 years and more), for 1 January and 1 July each year;

(b) Data are published on the INE website 20-30 days after the reference date;

(c) Due to the requirements of INE surveys, especially the Labour Force Survey (LFS), practical production is carried out once every three months and each of the quarterly rounds is considered as the baseline for the next one;

(d) The classical part of the forecast is done using the prospective birth rate and survival probabilities on the basis of the latest data available at the time;

(e) The novel aspect is that the size of foreign migratory flows is obtained from the information recorded in the Padrón Population Register, in various stages:

(i) The first objective is to obtain the number of international immigrants who have arrived in Spain in the period:

   a. At the time of making the quarterly estimate, interim information is available for the first two months. After detailed analysis of the behaviour of the data, circuit coefficients of delay are developed that allow to estimate the final data from the interim data that are available all the time. The third month is estimated from the cycle stabilities and trend observed in the past;

   b. To determine the structures by ages and the geographic distribution of these flows, distribution patterns actually found are used, once the high stability of these patterns has been shown between the interim and the final data;

(ii) Data on emigration were initially obtained by the same procedure, although since the implementation of some improvements in Padrón Population Register, total departures (including non-recorded ones) have been estimated by the deduction of a level and schedule of departures in relation to the entries at the time;

(f) Although internal migration was first calculated using classical procedures, its parameters are now being determined by gradually taking advantage of the interim information available at the time.

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19 See http://www.ine.es/jaxi/changeLanguage.do?target=menu&download=0&multi=0&type=pcaxis&file=inebase&print=1&page=menu&path=/t20/p259&language=1

20 Expiry of Non-EU Citizens without a Permanent Residence Permit (Caducidad de las inscripciones padronales de Extranjeros No Comunitarios sin Permiso de Residencia Permanente).
V. FOLLOWING STAGES AND FINAL CONSIDERATIONS

14. From the technical point of view, there are many details of this statistical operation on which work is continuing: improving the precision of the estimation of the third month in each quarter, making estimations by countries of nationality and/or birth and, above all, attempting to improve the estimates of external migration not recorded or recorded late by the Padrón Population Register.

15. INE has attempted to show the experience and the outcome of a statistical approach combining classic estimation mechanisms and utilisation of the wealth of information in the Padrón Population Register. A system is currently being developed that will enable something very similar to be done in relation to births and deaths, with their specifics, as in Spain this information comes originally from the Civil Register, a register that is different in its management and structure from the Padrón Population Register.

16. The presented approach can be considered a sound example of how mixed situations like the Spanish one present opportunities for an imaginative and pertinent combination of methodologies, which may be both simple and reliable, as is expected of statistical studies that produce the reference population figures for the whole statistical system. It is also an example of how, even in the midst of the extreme challenge that the recent extraordinary immigration flows have represented for Spain, it is feasible to make progress, making maximum use of all the available information.

17. Both the evolution of the systems for collecting the figures of the Padrón Population Register and the development of Nowcast Population Estimates may allow INE to predict that the future of providing current population figures will lie in a combination of micro information obtained from registration and macro procedures that will assure the intertemporal consistency of demographic evolution, as well as the necessary readjustments between registration categories and demographic flows.

18. It is certainly difficult to follow this approach in a different context than the Spanish one where the National Statistical Institute plays a crucial role and there is quick access to the information in the Population Register and the Civil Register. It is also a good example, however, that even before population registers reach maturity, their information may prove of extraordinary value in a situation where international migratory flows have represented a huge measurement challenge.

VI. REFERENCES


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