Population Change and Migration in Mumbai Metropolitan Region: Implications for Planning and Governance

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INTRODUCTION

Mumbai, along with mega-urban regions of comparable scale, faces daunting issues of regional planning and governance. Their planning issues take on national-level dimensions; after all, Mumbai contributes 40 per cent of the GDP of the state of Maharashtra- the second most populous state in India with 112 million population in 2011- and 5 per cent of the national GDP. The contribution of Bangkok and Jakarta to their national GDP is even more striking: 44 per cent and 26 per cent respectively[1].

Unfortunately, the structure of the governance of mega-urban regions does not reflect their key role in the national economy; this structure is typically very complex and multi-layered, with different jurisdictions having responsibility for different aspects of administration and development planning, and an over-arching mechanism for coordination is typically lacking (see Firman, 2003 on Jakarta).

Mumbai faces all these problems in full measure. As with many mega-urban regions, the proportion of the population living in areas outside the official metropolitan area is steadily increasing. To understand the problems of administration and governance requires an understanding of the demographic dynamics of the mega-urban region as a whole. This paper will contribute to such an understanding for Mumbai, utilizing data from the recent 2011 Population Census to bring the analysis up to date.

MUMBAI: CITY AND REGION

Mumbai, earlier known as Bombay, is a city of many contrasts. Adorned with names such as the *Urbs Prima in Indis*[2] and *Maximum City*[3], demographically Mumbai is the largest city of India, generating 33 per cent of the country's income tax, 60 per cent of customs duty, 20 per cent of central excise duty and 40 per cent of foreign trade (Municipal Corporation of Greater Mumbai 2009). It is also a city of dreams for many Indians with strong Bollywood fascinations. The name change to Mumbai in 1995 reflects the changing ideology and structure of politics in Mumbai.

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[1] In the case of Mumbai, the contribution of Mumbai Metropolitan Region to Maharashtra's GDP pertains to the year 2003-04 (The Urban Institute 2006:14). The figure for the share in India's GDP is estimated for the year 2003-04 based on available information (see figures on GDP for Mumbai Metropolitan Region, The Urban Institute 2006, p. 61 and for India's GDP, Economic Survey 2004-05, http:/indiabudget.nic.in, p. S-1). The Bangkok figure is for the Bangkok Metropolitan Region in 2010 (NESDB, 2012). The Jakarta figure is for Jabodetabek in 2006 (World Bank Jakarta Office, 2010).

[2] *Urbs Prima in Indis,* reads the plaque outside the Gateway of India. The Gateway of India, a domed arch of yellow basalt surrounded by four turrets, was built in Bombay to commemorate the arrival of the British King George V in 1911.

[3] See Mehta, Suketu (2004).

Mumbai is neither an ancient nor a medieval city, but was created during British rule of India. The city began its existence in 1661 when the British East India Company occupied a cluster of seven islands inhibited by a fishing community locally knohwn as *Kolis.* The cluster of islands were wedged together measuring an area of 68.7 sq km- known as island city. The island city was later connected to the Salsette Island situated north of it through reclamation. The Island city together with Salsette Island forms the present day boundary of the Municipal Corporation of Greater Mumbai (MCGM). Mumbai has unique geographical features consisting of lowlands and highlands with long coastlines, beaches, creeks and several rivers. Most of the rivers have turned into sewers and people hardly knew them as rivers until the Mumbai flood occurred on 26th July 2006 (Bhagat el al 2006). Mumbai also has a large national park known as *Sanjay Gandhi National Park,* covering an area of about 100 sq km located in the northern part of the city within the municipal boundaries. This is perhaps the largest national park located in the heart of any city in the world (http://www.sanjaygandhinationalpark.net).

Mumbai initially began as a port centre and the cotton textile industries provided the economic base of the city. The first cotton mill was established in 1854. Being a colonial port city, the spatial layout of Mumbai was organized around the port and it functioned as a gateway between its hinterland and England. The Municipal Corporation of Bombay was established in 1872.The influence of Mumbai, along with other colonial port cities like Kolkata (Calcutta) and Chennai (Madras), has been so powerful that they have reshaped the spatial pattern of urbanization in India in complete contrast to the pattern observed during medieval and ancient times (Ramachandran, 1995).

The city of Mumbai has experienced unbridled economic and demographic growth over time. As the city has evolved, the issue of population and migration has continued to be the core issue from the point of view of planning and governance. The issue of migration into Mumbai assumes enormous significance through its deep impact on city and state politics. This paper studies the spatial dynamics of population change and migration pattern in Mumbai and its adjoining areas and reflects upon planning and governance in the city.

DATA AND METHODOLOGY

The present study follows a comparative approach developed by Jones (2008) in the study of Mega Urban Regions in Pacific Asia. The basic rationale for this approach is that the city cannot be understood simply by what is happening within the administrative city area or in the urban agglomeration, but the spatial dynamics unfolding in the entire mega-urban region must be taken into account. The general point, of course, had already been made (see, for example, Ginsburg, Koppel and McGee, 1991). However, Jones and Douglass (2008) conducted a systematic study of mega-urban region dynamics. Arguing that changes in the mega-urban region can best be understood by studying the changes that are taking place in its various geographical zones, namely the core, inner zone and outer zones, they studied six mega-urban regions in the Asia-Pacific, namely Jakarta, Bangkok, Manila, Shanghai, Ho Chi Minh City and Taipei . Some of their findings can usefully be compared with Mumbai.

In the case of Mumbai, the core, inner and outer zones of the mega-urban region have been distinctively established through historical and planning processes. Geographically, the Mumbai mega-urban region has three distinct entities which are as follows:
1. Mumbai city (MCGM)
2. Mumbai UA[4] (Urban Agglomeration)
3. Mumbai Metropolitan Region (MMR)

For our study, Mumbai City (MCGM) is defined as the core area which is again divided into island city and suburbs. The inner zone comprises Mumbai UA minus MCGM, and the outer zone consists of towns and rural areas outside Mumbai UA but within MMR (Fig 1). The MMR is therefore equivalent to Jones and Douglass' 'mega-urban region'. The three zones in the MMR have very intense inter-relationships.

Interestingly, the land area of the core in Mumbai (603 sq. km.)[5] is almost identical with those in Jakarta (662 sq. km.), Manila (633 sq. km.) and Shanghai (605 sq. km.) (see Table 1). Mumbai's population density in the core is higher than that in these other megacities, but the greatest contrast is in the inner zone, where population density in Mumbai is by far the highest. The outer zone is defined by Jones as the remaining area surrounding the inner zone in the administratively defined mega-urban region (Jones, 2008: 42). The density in the outer zone in Mumbai is comparable to that in Jakarta, and higher than in any other of the comparator cities.

The density in Mumbai's entire mega-urban region (the MMR) is over 5000 persons per sq km - one of the highest in the world, double that in Shanghai and more than treble that in Manila and Bangkok (Jones, 2008: 52; Urban Age, 2007: 24).

Administratively defined entities within metropolitan regions are important for planning and governance in many countries and need to be retained. In the case of Mumbai there are a number of governing and planning bodies within the different zones of MMR which are depicted in Fig 2.

DATA ISSUES – CENSUS POPULATION

This study is based on census data and it is important to know how far India's population is correctly enumerated. India has a long history of conducting population censuses since the late 19th century, and the 2011 Census was the fifteenth census conducted since then. Although the quality of data on population size was affected by socio-political conditions during British rule such as the civil disobedience movement (Hutton, 1986), there was no precise evaluation of the quality of data by the British Indian censuses. However, in the censuses conducted in independent India since 1951, post enumeration checks were carried out to assess the quality of the census data. The net omission rate was 2.7 per cent in urban areas as a whole in the 1981 Census compared to 3.9 per cent in the

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4   Urban Agglomeration (UA is a continuous urban spread constituting a town and its adjoining outgrowths (OGs), or two or more physically contiguous towns together with or without outgrowths of such towns. An Urban Agglomeration must consist of at least a statutory town and its total population (i.e. all the constituents put together) should not be less than 20,000 as per the 2001 Census. In varying local conditions, there were similar other combinations which have been treated as urban agglomerations satisfying the basic condition of contiguity. Examples are Greater Mumbai UA, Delhi UA, etc.

5   MCGM gives an area figure of 437.71 sq km which is different from the figures provided by Surveyor General of India. This is largely due to the area controlled by different authorities like Port Trust, Ministry of Defense, Atomic Energy Commission and Sanjay Gandhi National Park etc. which lie within the precinct of MCGM but are excluded.

2001 Census (Census of India 2011:26). This indicates some increase in the omissions of population as the urbanisation level rises. However, the census does not make any adjustment for the net omission rates in its final population.

India's census is an extended de facto count conducted by door to door visits by enumerators during 8th to 28th February in the census year. Houseless population found sleeping on pavements, parks, flyovers and open places etc. is also enumerated on the night of 28th February. The latest data on houseless population was 39,074 in Mumbai (MCGM) recorded by the 2001 Census (Census of India 2001). It is likely that the houseless population is under enumerated, and the same may also be true for some short duration temporary migrants as well. These two groups might have contributed to some increase in the omission of population in the recent censuses. Nevertheless, the magnitude of such omissions does not seem to be large enough to invalidate the use of census data to study broad trends in population size and composition.

POPULATION CHANGES

Mumbai City (MCGM)

Mumbai city (MCGM) is spread over a geographical area of 603 sq km harbouring a population of 12.47 million as per the 2011 Census. The density of population is very high i.e. 20,692 persons per sq km for the city as whole. Table 2 shows that the population (and of course the density of population) in Island city has changed little over the last several decades, with density remaining more or less around 20 to 21 thousand persons per sq km, whereas the density in the suburbs has risen from 11,119 persons per sq km in 1981 to 20,924 persons in 2011. The suburbs of Mumbai MCGM are not suburbs in the classical sense, but administratively designated as suburban district though they are very much part of the city. Mumbai is divided into 24 wards, and several wards are as big as a million city.

The history of population growth shows that Mumbai (MCGM) became a city of a million people in 1911 (Fig 3). The population of Mumbai saw a significant decline during 1921-31, a decline attributed by the Census Commissioner J.H. Hutton to the effect of the economic depression in driving the migrants back to their homes (Hutton 1986:16). On the other hand, Mumbai grew very fast - over five per cent per annum - during the decade of independence (1941-51) and thereafter it grew at a rate of over three per cent per annum until 1981. After that, the growth rate decelerated to below 2 percent during 1981-91 and 1991-2001 before plummeting to less than 0.5 per cent in 2001-2011 (Fig 4).

Mumbai experienced a significant economic transition during the 1980s and 1990s. This transition has much to do with the closure of the textile mills, followed by the prolonged strikes by textile workers. Subsequently, there was also a large-scale relocation of engineering, chemical and pharmaceutical industries to areas adjacent to MCGM in the MMR. The de-industrialization of Mumbai in the 1980s and 1990s was so prominent that it turned into a service city (Bombay Metropolitan Region Development Authority 1995; MCGM 2009; 51). The greater part of the service economy falls under informal activities, where the average income of a worker is hardly Rs 6,000 per month (about 120 US $) (MCGM, 2009). This was apparently reflected in the declining population growth of the city to well below two per cent per annum during the 1980s and 1990s.

Intra-urban population distribution between island city and suburbs of Mumbai (MCGM) is shown in Table 2. A number of studies (Sita and Phadke, 1984; Gupta and Prasad, 1996) showed that the spatial distribution of population in Mumbai had undergone significant changes, particularly since 1961. The decrease in the relative share of population in the Island city continued. The trend towards suburbanization was very apparent, with the share of the suburbs increasing from 60% in 1981 to 75% in 2011. Whatever growth Mumbai has experienced in the last three decades has mostly occurred in the suburbs (see Table 2).

The dramatic decline in the rate of population growth in the core during the past decade appears to signal a new era in the history of the Mumbai mega-urban region, though to some extent there was continuity with already observable trends – a roughly unchanging population size in the island city, (a stagnation now dating back for four decades), and continuing growth in the suburban areas to the north. The significant development in the 2001-2011 period, however, was the spectacular decline in population growth in the suburbs of the core region from about 2.3 percent per annum in the decade 1991-2001 to 0.8 percent per annum during the decade 2001-2011. The locus of rapid growth of population has shifted outside the core region altogether.

The dynamics of population change in the island city deserves more detailed attention. The island city consists of 9 wards out of 24 wards of Mumbai city (MCGM). Most of the wards of Island city showed decline in population during 2001-2011. However, the most spectacular decline is observed in wards A, B, and C. Ward A consists of areas like Fort, Esplanade and Colaba which were initially the British and European settlements, and at present the commercial heart of the city. The population of ward A declined sharply from 210 thousand in 2001 to 148 thousand in 2011. Wards B and C where the native population settled first during British time, and the most congested part of the Island city at the moment, have also seen a decline. The population in ward B declined from 140 thousand to 127 thousand and in ward C from 202 thousand to 165 thousand between 2001 and 2011. Ward C is the most densely populated ward of Mumbai city with a population density of about 100 thousand persons per sq km (MCGM 2009: 32). Other wards, namely D, E, F/S, G/S, where most of the cotton textile mills were located, have also recorded a decline in population during 2001-2011. Some wards like C, D and E have shown continued decline in population since 1981 or even before. In the last two decades, most parts of island city have been experiencing significant changes leading to the establishment of malls in the places of mills, shopping arcades and residential towers (Shaban 2010:50).

Mumbai UA

The Mumbai UA consists of Mumbai City (MCGM) and other adjoining cities and towns namely Navi Mumbai, Thane, Kalyan, Baldlapur, Ambernath, Ulhasnagar and Mira-Bhayander. The area of Mumbai UA covers 1,135 sq. km., at a density of about 16,000 persons per sq km. Among the adjoining cities, density varied from about 8000 persons per sq. km. in Navi-Mumbai (M.Corp) to about 38,000 in Ulhasnagar (M.Corp) (see Table 3).

The Mumbai UA is the largest in India in terms of population. In 2011, the population exceeded 18 million, having doubled since 1981 (Fig 5).[6] Of Mumbai UA's total population, MCGM contributed a little more than 12 million (Table 3), and the main satellite towns, Kalyan-Dombivli, Thane and Navi Mumbai, each has a population exceeding one million. Navi Mumbai is a planned city established three decades ago. Cities like Vasai Virar (M Corp) with a population 1.2 million, and Navi Mumbai Panvel Raigad – a non-municipal town with a population of 194 thousand and Panvel Municial

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[6] According to the UN projection it is the fourth largest UA in the world with a projected population of 20 million in 2010 (UN 2009).

Council with a population of 180 thousands in 2011, are situated very close to Mumbai UA and also functionally linked with suburban train and bus services, but are not part of the Mumbai UA. If these three cities are added in, the population of Mumbai UA will be about 20 million on 1st March 2011 - exactly the projected population figure by the UN for the year 2010.

The growth rate of Mumbai UA is significantly higher than that of the Mumbai city (MCGM), reflecting the faster growth of satellite towns. The growth-rate of Mumbai UA has however decreased from 2.9 per cent per annum in 1981-1991 to about 2.6 percent per annum during 1991-2001, and further declined hugely to 1.2 percent per annum during 2001-2011 (Fig 6). As noted earlier, the decline was very significant in the core areas of Mumbai – i.e. MCGM and Island, which actually experienced negative growth.

The growth rates of two major satellite towns i.e. Kalyan-Dombivli and Thane have shown a marked decrease during 1991-2001 compared to 1981-91. This is partly due to administrative reorganization. The fastest growing satellite towns in 1991-2001 were Mira-Bhayander and Navi Mumbai, and this continued in 2001-2011 (see Table 3). The former reflects the outward movement of population along the western railway corridor, with relatively cheaper real estate acting as a pull factor. Navi Mumbai, after a sluggish start in the 1970s, took off during the 1991-2001 period and maintained its accelerated growth during 2001-2011 due to real estate development, growing employment opportunities in wholesale and retail business, agricultural marketing, IT industries and call centres and rapid improvement in mass transport links with the main city.

Mumbai Metropolitan Region (MMR)

Mumbai Metropolitan Region consists of MCGM and six other rapidly growing municipal corporations, 13 small towns with municipal councils and 995 villages spread over an area of 4,355 sq km. The boundary of MMR was first demarcated by the state government in 1967 and Mumbai Metropolitan Development Authority (MMRDA) was established in 1974. The population of MMR was about 20 million in the 2001 Census with a population density of over 4000 persons per sq km. The projected population of MMR was 23.5 million in 2011 (Bombay Metropolitan Region Development Authority 1995).

The MCGM – the Core of MMR, alone accounts for half of the population of MMR although it comprises only 10% of the total geographic area. However, the share of the core in the entire MMR population has decreased from 67 percent in 1991 to 53 per cent in 2011, while the share of the Inner and Outer Zone has been increasing (see Table 5). There is a gradual increase in growth rates as we move outward from the Core to the Inner Zone and Outer Zone. The Outer Zone has grown at the rate of 4 percent per annum (and its urban areas by 5.1 per cent per annum) during 2001-2011 compared to the growth rate of 3 per cent per annum in the Inner Zone and just 0.4 per cent in the Core of MMR. Population growth in the MMR as a whole grew at the rate of 1.72 per cent per annum during 2001-2011- importantly, a slightly higher growth rate than India's (1.64 per cent per annum during 2001-2011) but lower than India's overall urban growth rate of 2.76 per cent per annum during the same period (Table 4).

In all but the outer zone (rural), there has been a decline in population growth rate during 2001-2011 compared to 1991-2001, and the decline was very sharp in the Core. The industrial structure of the Core has gone through significant changes in the recent past and it seems to have affected population growth and the migration pattern in the entire MMR region as well.

INDUSTRIAL RESTRUCTURING AND POPULATION SHIFT

Mumbai emerged as the largest commercial and industrial centre of India on the basis of port facilities and also due to its large-scale industry such as cotton textile mills, which started operation around 1850. At the beginning of the 20th century Mumbai became established as an important industrial center, with the textile industry dominating its economy. The industry developed on the outskirts of the then populated areas in Central Mumbai. In the post-Independence period, Mumbai's industrial base was diversified with the growth of pharmaceuticals and chemical industries, and a large number of industries producing consumer goods and engineering products. These were located in an extensive suburban manufacturing zone extending from Vikroli and Bhandup in the east to Andheri and Goregaon in the west. Automobile production along with its ancillary industrial units was an important component. Petro-chemical and chemical industries developed in suburban areas such as Chembur-Trombay, Mulund etc. while within the city, there was a localization of drugs and pharmaceuticals. However, the textile industry continued to be the major industry in terms of both output and labour force, employing about 250,000 workers in nearly 60 mills until the early 1980s (Whitehead, 2008). However, after the late 1970s, the manufacturing sector in Mumbai began to decline. Also, the declining manufacturing in the core led to the increased manufacturing activities outside it (Whitehead 2008). This also gradually shifted some population over the years to the periphery which is evident in the changes in the migration pattern in the Mumbai UA.

The de-industrialization of Mumbai was caused by a number of factors that are identified as follows (Nijman, 2000; Soman, 2002; D'Monte, 2002; Whitehead, 2008; Sharma, 2010):

1. The industrial policy of the government, which encouraged establishment and expansion of industries in backward areas, and shifting of the polluting industries to the peripheral areas due to environmental and pollution control regulation.
2. Bias against the organized sector in the government's taxation and other policies,
3. Relatively high costs of inputs like electricity, water and transport,
4. The militancy of the labour movement in the 1980s,
5. High property prices in the city.

However, while these specific factors bearing on Mumbai's de-industrialization were clearly important, the de-industrialization, while it could have been slowed, may have been inevitable. It has been argued on the basis of enormous manufacturing job losses in cities such as New York and Tokyo since the 1970s that de-industrialization is a natural, inexorable process in such major cities (Sassen, 1993),

The decline of manufacturing is most evident in Central Mumbai, where a number of textile mills have become 'sick'. As D'Souza (1997) points out, this is an area where at present vast spaces are underutilized. City planners are turning their attention to the 'recycling' of the mill lands and various proposals are under consideration. At present, a few piecemeal attempts at gentrification have resulted in tall skyscrapers developing side by side with the slums. In fact, the heart of the textile area has witnessed the entry of shopping arcades, bowling alleys, and other up-market developments.

In the manufacturing sector, it is not only the traditional industries that have suffered. The chemical industry which was hailed a decade ago as a 'sunrise' industry has suffered due to liberalization and opening up of the economy to competition.

Mumbai, as mentioned earlier, owed its initial growth to its function as a major port. In fact, the Port Trust owns vast stretches of coastal land. With the development of a new port called JNPT in Navi Mumbai, which is better equipped to handle container traffic, the export/import functions of the old Mumbai port located within the precinct of MCGM have been on the decline. The decline in the manufacturing sector accompanied by increasing informalisation of jobs has affected a large section of Mumbai's population. These two processes have brought about significant changes in the functional characteristics of Mumbai in recent decades since the time it had evolved during the colonial phase as a major port city and a center of trade and commerce. The declining manufacturing sector, most prominently seen in the cotton textile sector and the port activities in Mumbai, led to the growth of the service sector within the core of Mumbai. The liberalization policies pursued in India since 1991 have further strengthened the service sectors (Grant and Nijman, 2002:16).

The emergence of Navi Mumbai during the 1970s has affected the commercial core of Mumbai located in the island city. Mukhopadhyay (2003) has highlighted the decline of both the wholesale and retail functions between 1980 and 1995 because of the shift of wholesale markets to Navi Mumbai. She draws attention to the emergence of semi-wholesaling, godown and container services and the need for a massive urban renewal and restructuring of functions outside MCGM.

Due to the decline in manufacturing activities, the majority of people in the Core work in the service sector which includes transport, communications, social and personal services besides real estate, construction, banking, financial and IT sectors. The process of change also led to increasing concentration of jobs in the unorganized sector which are casual and erratic in nature.

By the end of the 1990s, the unorganized sector accounted for two-thirds of the jobs in Mumbai (Sundraram, 1997). Several researchers attribute the decline in formal sector employment to the decline in manufacturing industries and the inability of the service sector to fill this void (Sita and Bhagat, 2007). The decline in the organized sector and the rising unorganized sector could not generate enough growth in total employment, and the rate of growth in employment slowed down significantly (Shaban 2010:52). This has certainly affected the population growth and migration trend and pattern in the MMR region.

TREND AND PATTERN OF MIGRATION

Mumbai has grown through migration over the years, but the trend and pattern of migration has undergone a significant change. In the late 19[th]Century and the early twentieth century, Mumbai's population mainly consisted of people born outside Mumbai (Sedgwick, 1922). The percentage of migrants based on place of birth was as high as 80 percent at the beginning of twentieth century, gradually declining to 43 percent by 2001 (see Fig 7). Earlier migrants came mainly from erstwhile districts of Bombay Presidency, namely Rantagiri, Colaba, Thane, Poona, Satara and Ahmad Nagar districts and also from Gujarat (mainly from Kutchch, Kathiawad, Surat and Ahmedabad) which was also part of Bombay Presidency. Among the various districts, Ratnagiri which is situated adjacent to Mumbai to the south was the main supplier of migrants to Mumbai City. Migrants also came in large numbers from Portuguese and French possessions in India (Sedgwick, 1922).

The virtual lack of any growth during 2001-2011 in the Core of Mumbai (MCGM Area) resulted from a decline in migration as well as a decline in fertility to below replacement levels (TFR 1.68 in 2005-06) in Mumbai (International Institute for Population Sciences, 2009:95). The declining share of migrants in the total population of Mumbai UA has been accompanied by considerable change in the source regions of migrants to Mumbai. The most noticeable change over the last fifty years was a considerable increase in the share of migrants from the northern state of Uttar Pradesh, which

shows an increase from 12 per cent in 1961 to 24 per cent in 2001, and from Bihar, from 0.2 per cent to 3.5 per cent. On the other hand, the share of migrants from the states of Gujarat and Goa continuously declined over the same period - from 16.9 per cent to 9.6 per cent, and from 3 per cent to 0.6 per cent, respectively. The increase in inter-state migration, mainly from Uttar Pradesh and Bihar, was paralleled by a decrease in the share from within-state migration. The share of migrants from Maharashtra to Mumbai declined from 41.6 percent in 1961 to 37.4 percent in 2001. It is important to note that the virulence of anti-migrant agitation in the name of 'Sons of Soil' politics and associated violence in Mumbai during the last two decades of the 20th century and its resurgence through the emergence of a political party named *Maharasthra Nav Nirman Sena* (MNS) during the 2000s has been associated not with increasing migration in Mumbai but with the shift in the migration pattern in favour of inter-state migration.

Migration has also been shifting to peripheral areas of Mumbai UA. Migration is defined on the basis of change in the place of residence. This may take place within the district, between the districts and between the states. Within the district any change of residence across municipal as well as village boundaries is defined as migration. The MMR is spread over four districts. Two districts, namely Mumbai and Mumbai Suburban, which together constitute MCGM, fall completely in the MMR and another two districts, namely Thane and Raigarh, fall partly in the MMR outside the MCGM. The census provides data on migration only up to the district and UA levels. It is therefore possible to disaggregate the migration pattern for Mumbai UA (i.e Core plus Inner Zone), but not for the entire MMR. The available data show the markedly higher proportion of migrants living in the Inner Zone both for males and females in recent years. Male migrants with duration less than 10 years were about 32 percent in the Core compared to 45 per cent in the Inner Zone. Similarly, for female migration these figures were 30 and 45 percent respectively.

It is also observed that more never married migrants of both sexes live in the Inner Zone compared to the Core. Fifty seven percent of male migrants in the Core were never married compared to 61 percent in the Inner Zone. Similar figures for females were 33 and 36 percent respectively. Not only were recent migrants a higher proportion of the population in the Inner Zone but also a higher proportion of them are single and of younger ages. This shows the geographical shift of migration from the Core to the periphery, and is consistent with higher population growth in the peripheral areas of the Inner and Outer Zones of MMR.

Based on birth and death rates of Mumbai (MCGM) and urban Maharashtra, the contribution of natural increase and net migration can be estimated. Table 5 shows these estimated contributions for different zones of MMR for the last two decades. The contribution of migration in population growth in Inner and Outer zones was estimated to be about 85 percent in both the decades. By contrast, the Core has shown a net out migration during the decade 2001-2011. The natural increase in the Core was estimated to be 850 thousand during 2001-2011, out of which about 350 thousand migrated out from the Core, seemingly to the Inner and Outer Zones. This means that both inner and outer zones of MMR have been not only receiving migrants from outside the region but also from inside as spillover from the Core. This is natural for an expanding metropolis because the core is densely populated and accommodation is not easily available at an affordable cost. Enhanced connectivity through improved transport facilities also facilitated the redistribution of population from the Core to the Inner and Outer Zones.

Migration is generally linked with growth of slums in Mumbai. There is a huge slum population in the Mumbai Metropolitan Region, predominantly concentrated in the Core i.e the area of MCGM. There are more than 2000 slum settlements dotted all over Mumbai crammed between commercial complexes and middle and upper class localities (Sharma, 2010).Thus, one of the remarkable

features of Mumbai's social fabric is that unlike many European and American cities, rich and poor neighborhoods are not segregated but coexist.

MIGRATION, SLUMS AND HOUSING

The Slum population, which constituted 54 percent of the population according to the 2001 Census in Mumbai City (MCGM), declined slightly to 52.5 percent (6.5 million) in 2011 (unpublished data received by the first author). A large number of slum pockets are dotted across the city, but more concentrated in the western and eastern suburbs within the jurisdiction of Mumbai MCGM along the railway tracks. Although slums have grown through migration, they are also growing due to natural increase. In 2005-06, about 45 per cent of male and 53 per cent of female adults (age 15-49) were migrants and nearly two-fifths of them entered the city during the last 5 years (International Institute for Population Sciences, 2009:90). Cotton textile and factory owners, railways and the Bombay Improvement Trust used to provide housing to their workers in close proximity to the work places (Bhowmik 2011:78). These housing complexes were known as *chawl*[7]. However, the decline in the formal sector and the rapidly rising informal sector since the early1980s forced the migrant workers to seek their own shelter. Migrants provided cheap labour to the city, but could not afford housing due to its exorbitant prices compared to their income levels. The average per capita annual income was Rs 65,361 at current prices in 2006-07 (Municipal Corporation of Greater Mumbai 2009:40), or average monthly earnings as low as 5000 to 6000 rupees (less than 150 US Dollars). On the other hand, official statistics reveal a dismal picture of at least 1.2 million i.e. close to 10 per cent of total population of Mumbai (MCGM), reporting incomes of less than Rs. 591.75 per month (less than 15 US Dollars) (Municipal Corporation of Greater Mumbai 2009:44). With such a low income, formal housing of a 600 square feet flat is unaffordable as it cost around 30 thousand US Dollars in the suburban areas of Mumbai (MCGM) a few years back (Sharma 2007:289). The price has escalated further in recent years to about 100 thousand US Dollars in 2013 (The Times of India, 2013:1). Given their extremely low income, the majority of the population continues to live in slums. On the other hand, newer and better off migrants, who can afford a flat, seek cheaper housing in the far off areas outside the Mumbai MCGM, within the metropolitan region and as close as possible to the MCGM.

The housing constraints in Mumbai (MCGM) were a major reason for the gradual shift of population to the peripheral Inner and Outer zones in the Mumbai Metropolitan Region. However, in spite of rise in the share of population in the periphery, the majority of the population still lives in slums in Mumbai (MCGM).

A new slum redevelopment scheme was launched in the late 1990s under which free housing is promised to the bonafide slum dwellers who could prove they had stayed in Mumbai (MCGM) before 1st January 1995. A Slum Regulatory Authority (SRA) was also created to plan, monitor and implement this scheme in 1995. The fact that the majority of the population continues to live in slums even in 2011 indicates that the new slum development scheme has not been successful. Under the new scheme, the developers are provided extra FSI (floor space index) for sale in the market in order to cross-subsidise free houses given to the slum dwellers. Although the scheme is new and innovative, it suffered from various problems like loss of livelihood, increase in cost of living, quality of housing and corruption. As a result, there was wide spread resentment against the scheme and its non-acceptability by the slum dwellers (Gandhi 2007; Bhowmik 2011).

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[7]   A *chawl* is a building often with 4 to 5 stories with about 10 to 20 tenements having one or two rooms with shared toilets in each floor. The construction of chawls began in the early 19th century to house the people migrating to Mumbai because of its booming cotton mills and overall growing economy.

DISCUSSION AND CONCLUSIONS

Mumbai saw a significant transition during the 1980s, which had much to do with the closure of the textile mills, followed by prolonged strikes by textile workers. Subsequently, there was also a large-scale relocation of engineering, chemicals and pharmaceutical industries outside the Core in the MMR. The de-industrialisation of Mumbai in the 1980s and 1990s was so prominent that it has now become a city dominated by the services sector. The low-wage service sector could not absorb more unskilled migrant workers. This is well reflected in the population figures released by the 2011 census for Mumbai (MCGM). The new figures show that the population growth of Mumbai (MCGM) has slowed to less than 0.5 per cent per annum during 2001 to 2011; in terms of actual numbers, the population has grown marginally from 11.9 million in 2001 to 12.4 million in 2011. This slight growth in population has occurred only in the suburbs. The percentage of population living in slums has declined from 54 percent in 2001 to 52 percent in 2011 which is consistent with the decline in migration in the Core of the MMR, but at the same time it reflects that housing conditions in Mumbai have not improved during the last decade.

In the areas outside the Core, population has grown faster, but there too the growth rate is slowing. Migrants are predominantly located in the peripheries. There is also a change in the composition of migrants in favour of interstate migration. There is a resurgence of *Sons of the Soil* sentiment in Mumbai, stemming partly from the change in the composition of migration in favour of those arriving from outside the state of Maharasthra.

Despite all the talk of "world class" city status, the real challenge for Mumbai is to deal effectively with joblessness, homelessness and poverty. In particular, how are its six million slum dwellers to be provided decent housing and improved quality of life in terms of access to sanitation, safe drinking water and health care? The problems of Mumbai are also linked with the problems of adjoining cities, like Thane, Kalyan, Navi Mumbai and Mira Bhayander. The planning should not be confined to Mumbai city, but needs to encompass the whole of the Mumbai Metropolitan Region. This could be done by a Metropolitan Planning Committee, whose role and functions are clearly laid down in the 74th amendment of the Constitution on urban local bodies. The irony of Mumbai lies in the fact that there are several planning and administrative authorities in the MMR. Each one has the responsibility of preparing a development plan, but this needs to be effectively integrated by a functional and empowered Metropolitan Planning Committee. This needs to be done by the state government because urban development is a state subject in India.

The last decade has seen an enormous debate on the future of Mumbai and its planning for development. The idea that Mumbai should become Shanghai or Singapore is very appealing to policy makers, the elite and people in the corridors of power. However, over the years, any kind of urban planning process has been ignored in Mumbai. The state government has arrogated to itself all initiatives and all thinking in regard to urban development, eroding entirely the function of the municipality (Patel 2005). The real challenge before Mumbai is to provide affordable housing to the majority of its population with a very low level of income living in inhospitable slums. This is not an issue related to the access to housing alone but also the sustainability and security of income and livelihood of the slum dwellers. To begin with, effective local governance backed up by bottom-up planning could perhaps provide some solutions and help in fulfilling the needs of the majority of the people living in woeful conditions.

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Table 1: Density of Population (per sq km) in Different Zones of the Mumbai Metropolitan Region, 1991-2011, and of some other Asian mega-urban regions

Year	Area in Sq Km	Density of Population (per sq km)			
	Core	Core	Inner Zone	Outer Zone (rural+urban)	Total MMR
Mumbai 1991	603	16,461	5,018	680	3,394
Mumbai 2001	603	19,758	8,250	1,071	4,549
Mumbai 2011	603	20,692	11,163	1,590	5,403
Jakarta 2000	662	12,610	3,975	1,085	3,432
Manila 2000	633	15,642	2,047	648	1,641
Bangkok 2000	876	6,709	1,248	472	1,414
Shanghai 2000	605	16,415	1,871	808	2,603

Source :Census of India 2001, Series I, India, **Town Directory** (Compact Diskette), Registrar General and Census Commissioner, India, New Delhi; Census of India 2001, Series 28, Maharashtra, Paper 2 of 2001, "Rural-Urban Distribution of Population", Director of Census Operations, Mumbai; For 2011 Census, see website www.cenusindia.gov.in except for MMR figures which are taken from Bombay Metropolitan Region Development Authority (1995). For Jakarta, Manila, Bangkok and Shanghai, Jones, 2008, Table 3.1.

Table 2: Density, Growth and Share of Population in Mumbai (MCGM) by City and Suburbs 1981-2011

Segment/ year	Population in Million				Density Per Sq km				Share (%)				Annual Exponential Growth Rate (%)		
	1981	1991	2001	2011	1981	1991	2001	2011	1981	1991	2001	2011	1981-1991	1991-2001	2001-2011
Island City	3.28	3.17	3.32	3.14	20,924	20,223	21,185	20,032	39.8	31.9	27.9	25.2	-0.34	0.46	-0.55
Suburbs	4.96	6.75	8.65	9.33	11,119	15,137	19,188	20,924	60.1	68.1	72.1	74.8	3.08	2.37	0.86
Mumbai (MCGM)	8.24	9.92	11.97	12.47	13,670	16,461	19,758	20,692	100.0	100.0	100.0	100.0	1.85	1.82	0.46

Source: Census of India, 1981 to 2011.

Table 3: Size and Growth of Population in the Constituent Units of the Mumbai Metropolitan Region, 1981 to 2011

UA/Constituents	Total Population (000), 2011	Total Population (000), 2001	Growth Rate 1981-1991 (%)	Growth Rate 1991-2001 (%)	Growth Rate 2001-2011 (%)	Annual Growth Rate 2001-2011 (%)	Density of Population per sq km, 2011
Greater Mumbai (M. Corp.)	**12,478**	**11,914**	**20.2**	**20.0**	**4.7**	**0.5**	**20,692**
Greater Mumbai UA	**18,414**	**16,368**	**33.4**	**29.9**	**12.5**	**1.2**	**16,219**
Thane (M.Corp)	1,818	1,262	157.0	57.0	44.1	3.7	14,177
Kalyan-Dombivili (M. Corp)	1,675	1,495	130.8	47.4	12.0	1.1	9,374
Ulhasnagar (M.Corp)	506	473	34.8	28.1	7.0	0.7	38,923
Mira-Bhayander (M. Corp)	814	520	584.7	196.3	56.5	4.5	10,251
Navi-Mumbai (M.Corp)	1,119	704	-	128.8	58.9	4.6	8,423
MMR (R+U)	**23,530**	**19,810**	**-**	**34.0**	**18.7**	**1.7**	**5,403**

Source: Same as in Table 1.

**Table 4: Size, Share and Growth of Population in Different Zones in the
Mumbai Metropolitan Region, 1991 to 2011**

Population (in million)	Core	Inner Zone	Outer Zone (Urban)	Outer Zone (Rural)	Total MMR
1991	9.92	2.67	0.86	1.33	14.78
2001	11.97	4.39	2.19	1.26	19.81
2011	12.47	5.94	3.64	1.48	23.53
Share (in %)					
1991	67.1	18.1	5.8	9.0	100.0
2001	60.4	22.2	11.2	6.3	100.0
2011	53.0	25.2	15.5	6.3	100.0
Annual Exponential Growth Rate (in %)					
1991-2001	1.87	4.96	9.38	0.75	2.92
2001-2011	0.40	3.00	5.11	1.76	1.72

Source: Same as in Table 1.

**Table 5: Size of Population Increase and Contribution of Migration in
Mumbai Metropolitan Region, 1991 to 2011**

MMR/components	Core		Inner Zone		Outer Zone Urban		MMR (Urban)	
	1991-2001	2001-2011	1991-2001	2001-2011	1991-2001	2001-2011	1991-2001	2001-2011
Population increase (in millions)	2.05	0.50	1.72	1.55	1.17	1.43	4.94	3.48
Natural increase (in millions)	1.24	0.85	0.45	0.44	0.17	0.22	1.86	1.51
Net migration (in millions)	0.81	-0.35	1.27	1.11	1.00	1.21	3.08	1.97
% contribution of migration	39.5	-70.0	73.8	71.6	85.4	84.6	62.3	56.6

Source: Estimated by Authors

Fig 1: Mumbai Metropolitan Region- Core, Inner and Outer Zone
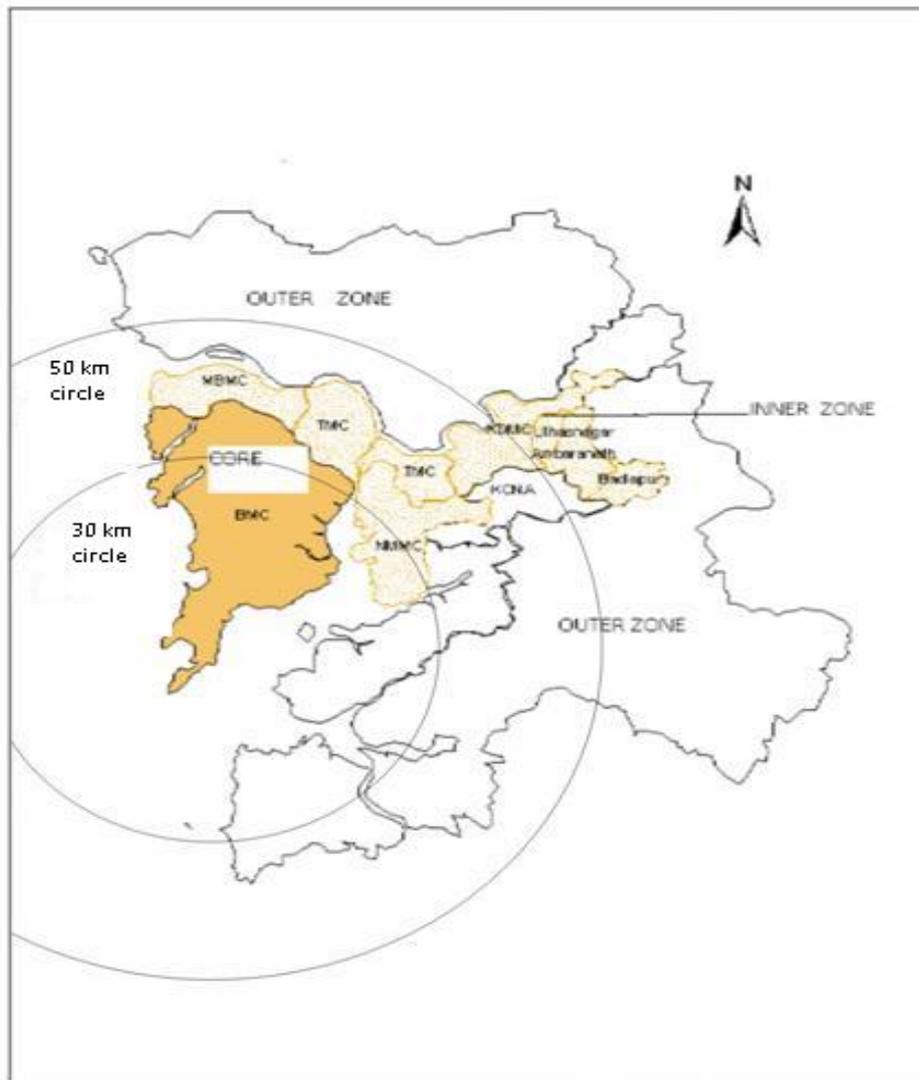
**Fig 2: Local Governance Structure and Planning Authorities in MMR**
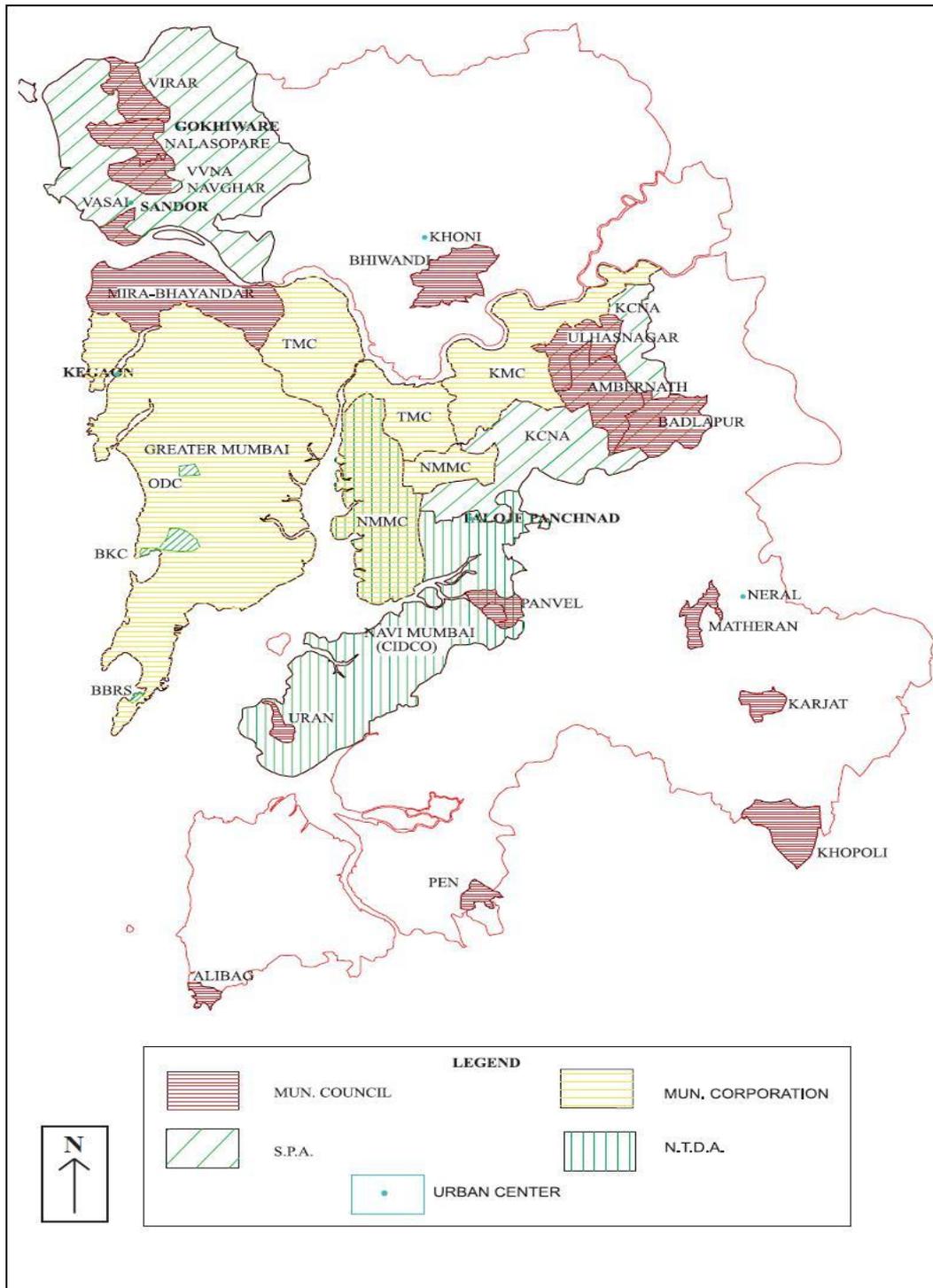
N.T.D.A- New Town Development Authority; S.P.A- Special Planning Authority;
KCNA- Kalyan Complex Notofied Area; BKC- Bandra Kurla Complex; ODC- Oshiwara District Centre;
TMC- Thane Municipal Corporation; KMC- Kalyan Municipal Corporation; NNMC- Navi Mumbai Municipal
Corporation; BBRS- Backbay Reclamation Scheme; CIDCO- City and Industrial Corporation.

Source : Bombay Metropolitan Region Development Authority (1995), p.8.

Fig 3: Population of Greater Mumbai Municipal Corporation (MCGM), 1901-2011
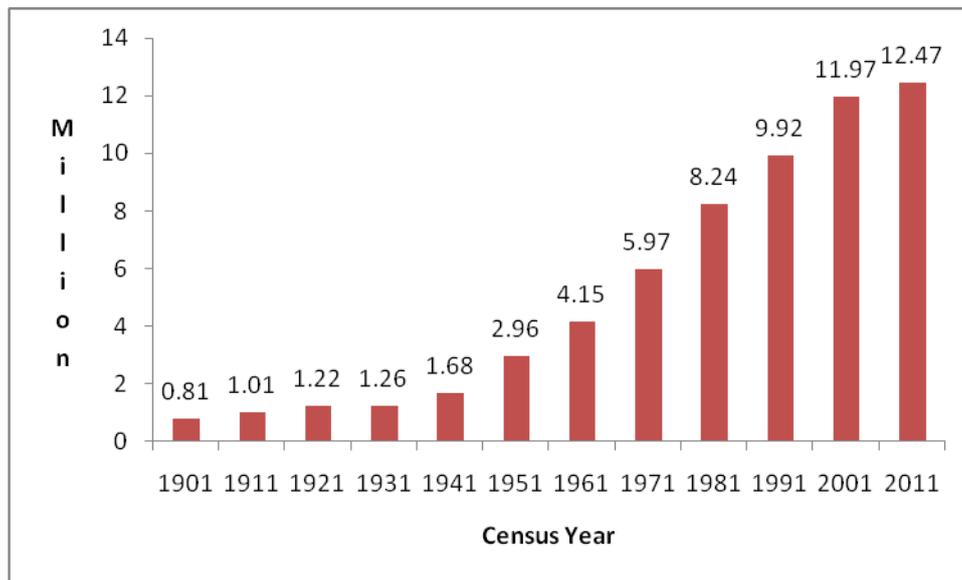
Fig 4: Average Annual Exponential Growth Rate (%), Mumbai City (MCGM)
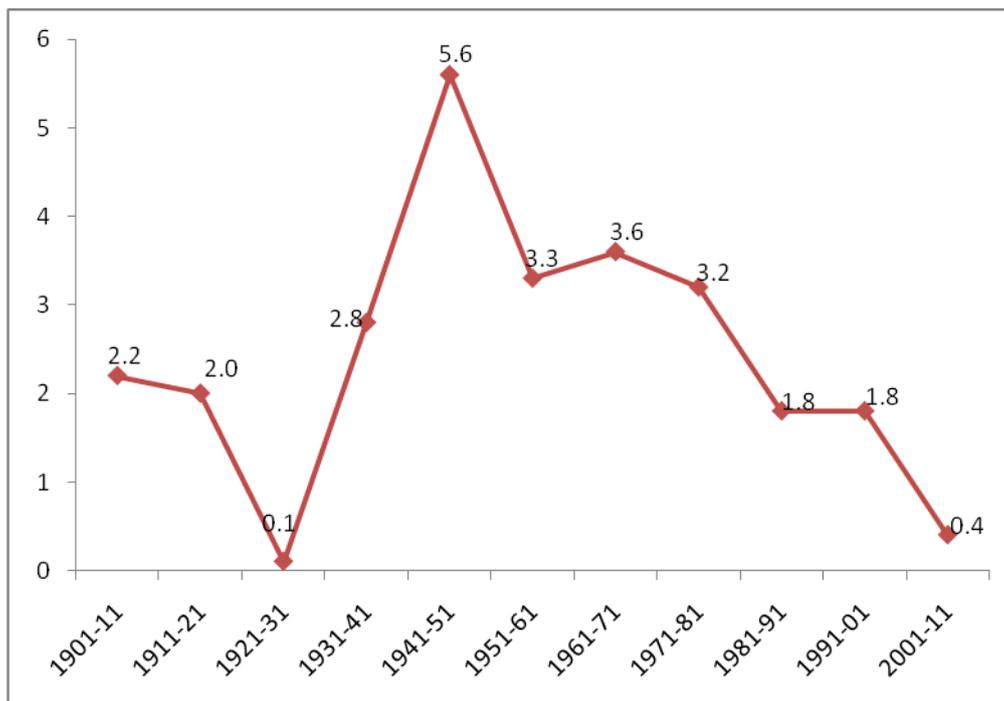
Fig 5: Population of Mumbai UA 1901 to 2011 (in millions)
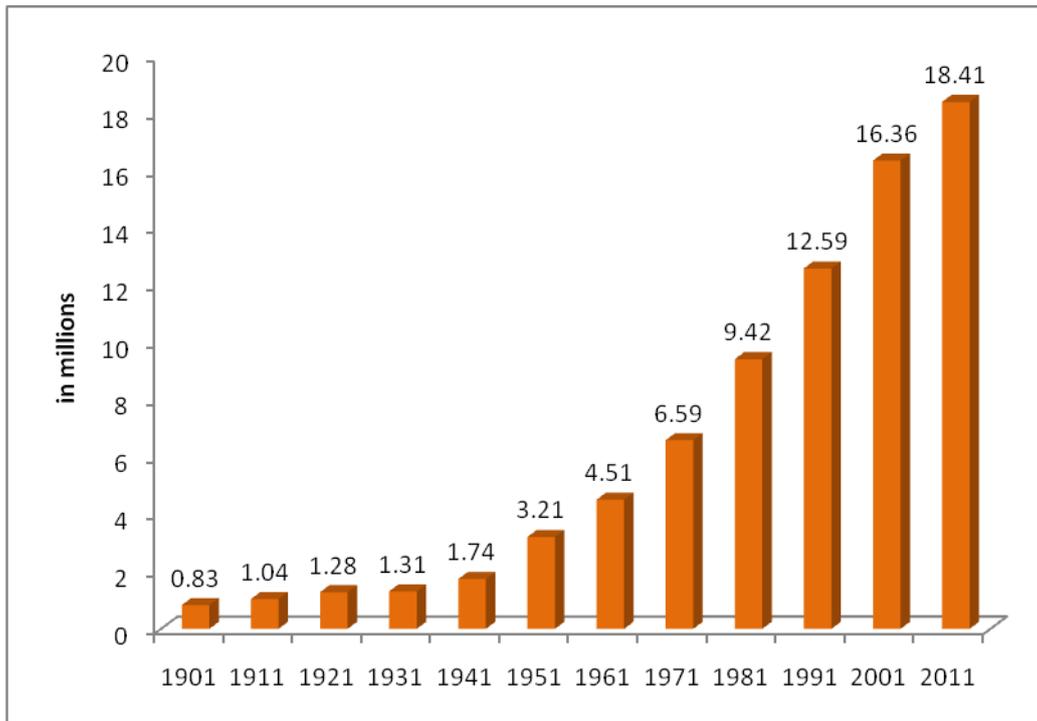
Fig 6: Average Annual Exponential Growth Rate (%), Mumbai UA, 1901to 2011
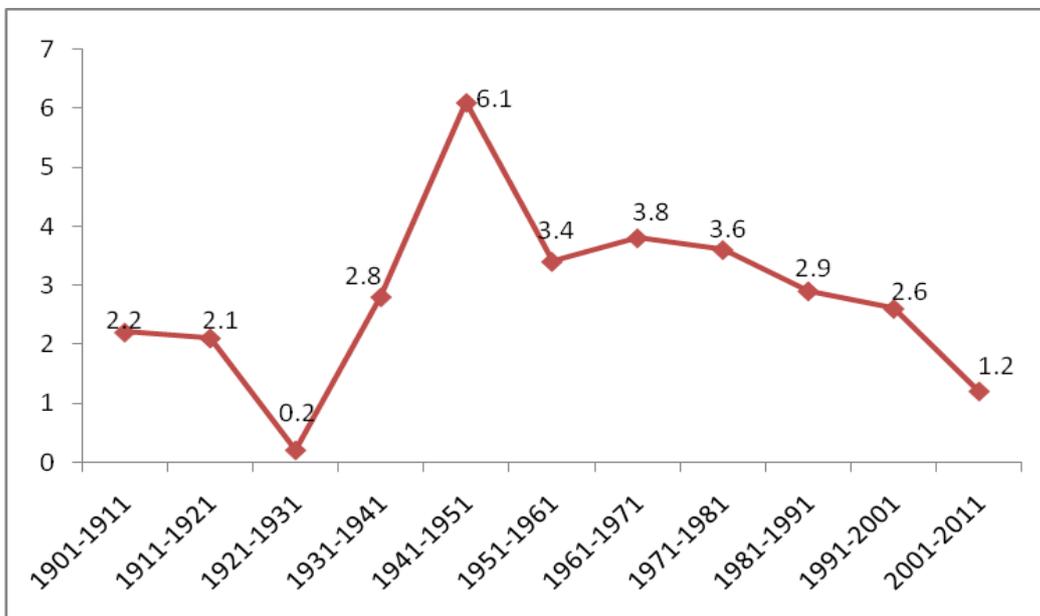
Fig 7: Percentage of Migrants in Mumbai UA, 1901-2001
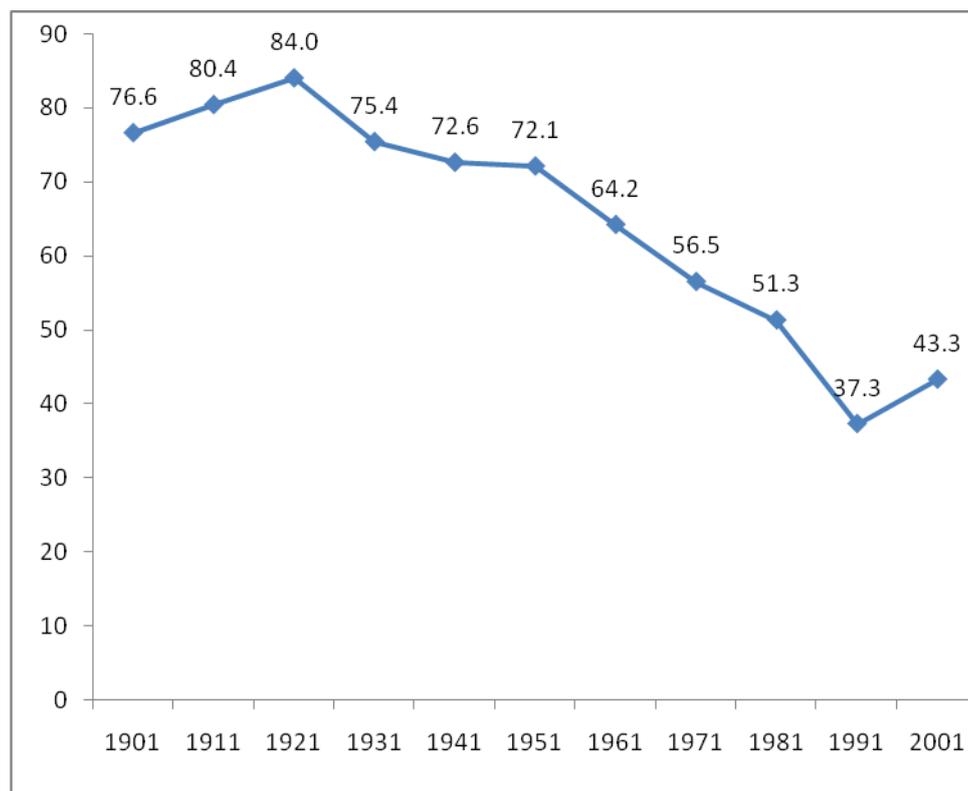
Source: Migrants are defined based on place of birth. Figures up to 1961 are taken from Zachariah (1968:45). For the remaining census years the respective Migration Tables, Census of India, 1971 to 2001.