SOME STRIKING FEATURES OF THE CHINESE PENSION SYSTEM

COMPONENT ONE

Jean-Victor Gruat,

EU Resident Expert

SPRP

August 2017

CONTENTS

LIST OF TABLES, MAPS AND GRAPHS

EU-CHINA
Social Protection Reform Project
中国欧盟社会保护改革项目
Component 1

SOME STRIKING FEATURES OF THE CHINESE PENSION SYSTEM

This Preface was first drafted in July 2017. I am extremely thankful to my colleague Mr. Fang Lianquan from the Chinese Academy of Social Sciences CASS and the EU-China Social Protection Reform Project for his careful reading of the first draft, and very useful suggestions for amendments, which were included in this revised version.

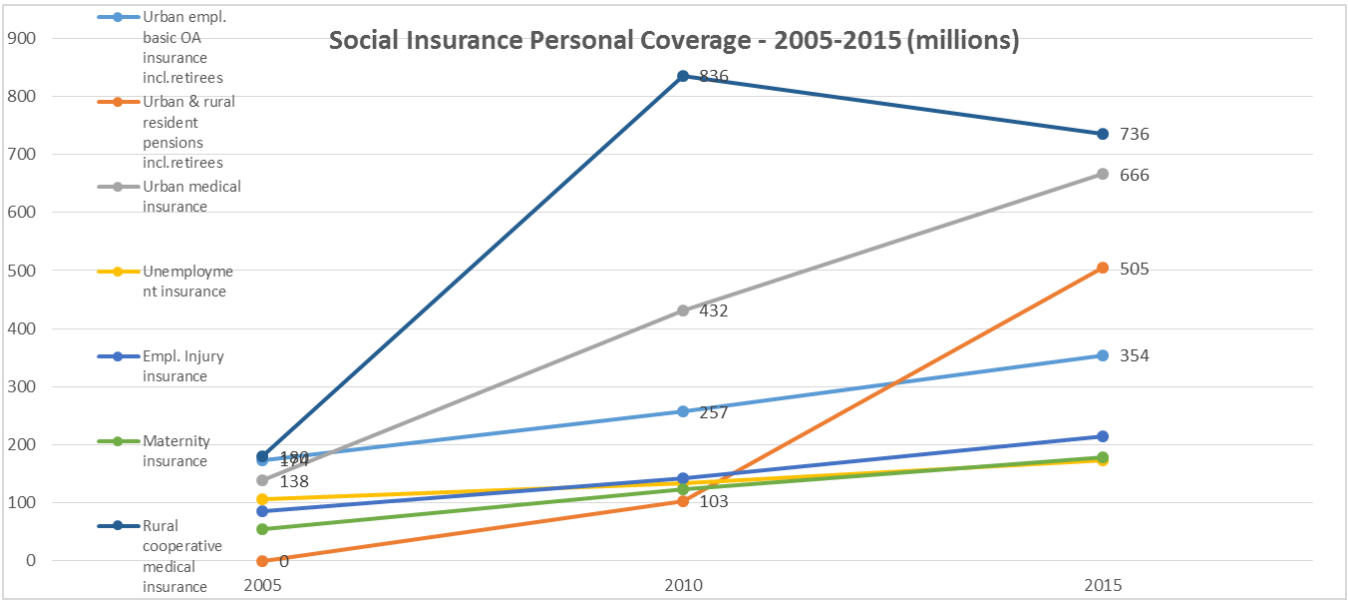
JVG., 26 July 2017

Introduction

The Chinese social security system has achieved remarkable progress over a historically short period of time. In terms of extension of personal protection, the decade 2005-2015 has seen medical coverage in both urban and rural areas become almost universal, with pension coverage increasing from less than 200 million to some 850 million persons, thanks notably to the introduction in 2009 of a new scheme for rural residents not otherwise protected. Progress was also achieved in other branches of protection (unemployment, occupational risks, and maternity protection) although to a less spectacular extent. Data in Table 1 and Graph 1 hereafter illustrate these undisputable achievements.[1]

Table 1 & Graph 1. China – Extension of social security coverage (2005-2015) – millions and %

Item / Nb. Covered	2005	2010	2015
Urban empl. basic OA insurance including retirees	174	257	354
Retirees, urban employees pension scheme	43	63	92
Urban & rural resident pensions including retirees	--	103	505
Basic medical insurance	138	432	666
Unemployment insurance	106	134	173
Employment Injury insurance	85	142	214
Maternity insurance	54	123	178
Rural cooperative medical insurance	180	836	736
% coverage medical insurance schemes	23.5	95	98.9



Concerning pensions, the number of beneficiaries (benefits in payment) in the Urban old-age insurance scheme grew from 32 million in 2000 to 92 million in 2015, i.e. from 1/3 to 2/3 of the population aged 65+. Amounts paid in benefits are also non negligible, since public pensions represented in 2015 50% of the average wage, with an economic replacement rate[2] of 44%, which fares reasonably well compared to most advanced economies.

Table 2. Value of pension benefits in the Urban old-age insurance scheme

Item	2000	2005	2010	2015	Advanced economies 2015
Nb of pension recipients, million	32	44	63	92	
Pensions as % of GDP	2.10	2.16	2.61	4.07	8.5
Pensions as % of average wage	71	50	47	49	57
Economic replacement rate, pensions	58	46	41	44	33

Sources: NBS, MoHRSS and project calculations. IMF for Advanced economies.

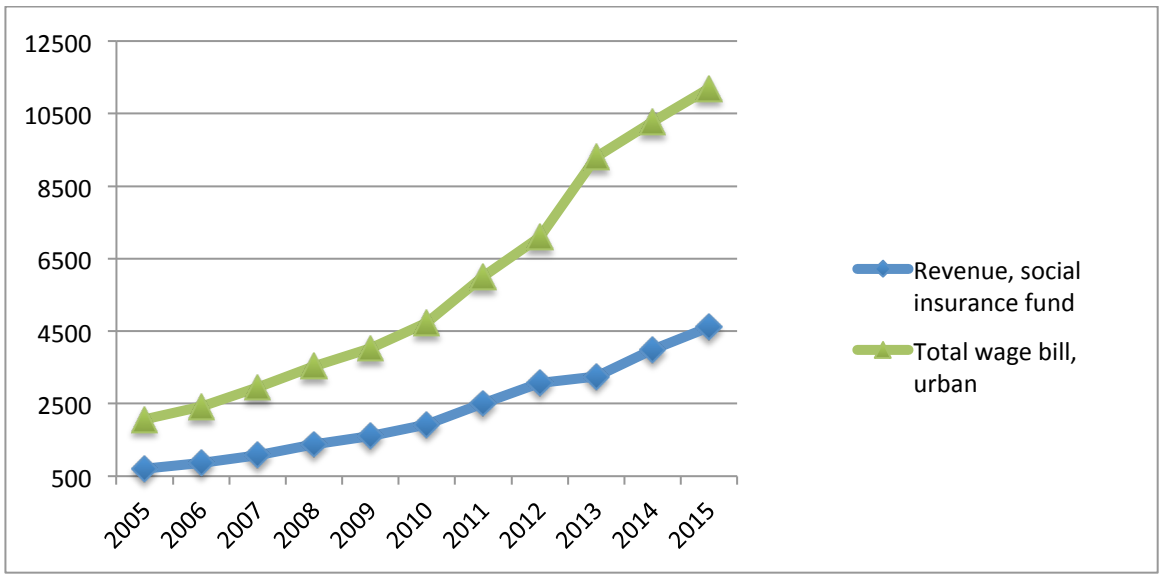
However, some difficulties are to be pointed to, that will affect the future and the viability of the Chinese pension system. Among the most critical points, paragraphs below will address the following: a marginally decreasing attractiveness of the main social insurance scheme; system fragmentation; a still low level of protection; a quite limited redistributive effect; the threat from a rapidly ageing population; a (sometimes) questioned economic affordability, before concluding on the relevance of commitments made in the 13th Five-year Plan to address these difficulties.

Scheme attractiveness

Despite progress made in coverage, the pension scheme for urban employees, which is the flagship of the Chinese pension system, has not reached its full potential, and is not substantially coming closer to it as years pass. Indeed, the coverage rate of approximately 2/3 of urban workers could be considered as already quite high compared to the situation in a number of developing countries. However, while the legislation currently in force provides for the inclusion of all salaried employees into the said scheme, important categories still do not benefit from this protection and are confined into the otherwise voluntary schemes for urban and rural residents, which level of benefits is minimal. In particular, out of an estimated total of 277 million internal migrant workers, over 200 million are still not included in the pension scheme for urban employees. In terms of active contributors, coverage under this scheme after deduction of a rapidly growing number of retirees appears as less spectacular as that of some of the other schemes – which also corresponds to increasingly efficient campaigns to have employers comply with coverage of employees under all social insurance branches, as opposed to a kind of "*à la carte*" registration which had previously prevailed.

According to national statistics from the NBS, progression since 2005 of the revenues of the Social insurance fund – mostly based on contributions assessed against salaries – is progressing at a slower pace than the total wage bill of workers in urban areas – while strict compliance with provisions in force would lead to expect a closer relation between the two series[3].

Graph 2 – Growth in social insurance revenue and urban wage bill, 2005-2015 (billion Yuan)



Source: National Bureau of Statistics http://www.stats.gov.cn/tjsj/ndsj/2015/indexeh.htm

Reasons for this apparently decreasing attractiveness of the scheme for Urban employees are multifold.

Among those most frequently quoted are:

i. the reluctance of enterprises to have workers join in a scheme they consider as costly, when there is no strong push from workers, since the latter view the corresponding payment of personal contributions as bringing little if any advantage compared to enrolment in other, cheaper, schemes like those launched in big cities for so-called casual workers (contributions assessed upon the lowest possible income level) or the Rural-Urban resident schemes where contributions are very low, but access to medical insurance still is guaranteed, which is the main short term incentive of the system;

ii. the contribution rate of 28% (20% from employer, 8 from employee) being considered as a heavy burden for private sector especially acting as a deterrent for those "informal workers" to join in the pension system[4];

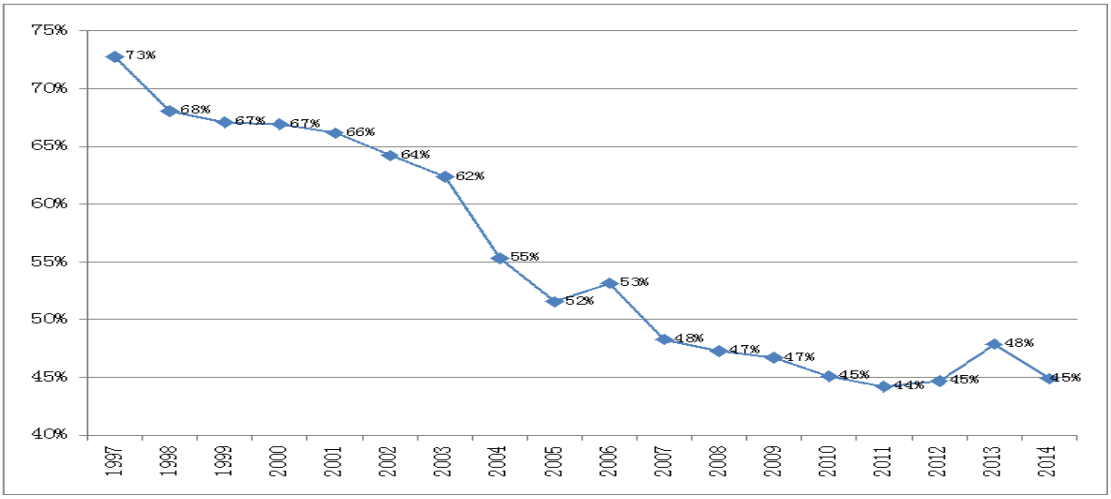
iii. the fragmentation of the scheme which makes it unattractive for a number of mobile workers confronted with still important difficulties when transferring rights in the course of acquisition in particular concerning the pooling part of the basic pension, which largely overweighs that from individual accounts in the final computation of benefits ;

iv. uncertainties concerning the very nature of the scheme, especially its individual accounts component, with personal accounts being either empty or half empty, with funding being more virtual than real in the majority of cases – which does not add to overall trust in the fund's sustainability;

v. and, somehow related to the above, a decreasing level of relative pension benefits expressed in terms of replacement of past income, as shown in graph 3 below. [5]

In fact, it seems that the maturing of the scheme, i.e. the growing influence of actually contributed years of activity in the acquisition of pension rights, bears a negative impact on the overall replacement rate – in other words, the more you contribute, the less your benefit is relatively relevant. This apparent paradox stems from the design of the individual accounts component in the accumulation of rights, for which the relevant portion of contributions paid is valued at a rate corresponding to the one used by banks for their borrowing operations (bank interest rate for savings) which is very low compared to the growth rate for wages or the GDP.

Graph 3. Replacement rate, Chinese pension system for Urban employees



The table below shows, over a number of years, the respective evolution of key indicators to appreciate the actual value of pension benefits. Over a period of 12 years, amounts accumulated in a workers' individual account for pension would thus have barely maintained their purchasing power value (bank interest rate being slightly above inflation rate on average between 1998 and 2011, which is the period under review[6]) and in fact lost every year almost ten per cent of their value compared to actual wages. This explains why the explicit objective of the pension system in terms of replacement rate of 60% after full insurance career – 30 years – which is 35% out of solidarity pension and 24% out of individual account (Zhen Li 2013) does not appear as a realistic target anymore, even though the calculation of benefits out of individual accounts portion makes use of a very generous coefficient actuarially speaking, namely 190 when retiring at age 50, 175 when retiring at age 55 and 139 when retiring at age 60, while life expectancy at that latter age may well be of 25 to 30 years, i.e. up to 360 months.

Table 3. Changes in indicators affecting yield in basic pension (1998-2011)

Year	GDP growth %	Wage growth %	Inflation %	Bank Interest rate %
1998	7.8	7.2	-0.8	5.22
1999	7.6	13.1	-1.4	2.25
2000	8.4	11.4	0.4	2.25
2001	8.3	15.2	0.7	2.25
2002	9.1	15.5	-0.8	1.98
2003	10.0	12.0	1.2	1.98
2004	10.1	10.5	3.9	2.25
2005	10.4	12.8	1.8	2.25
2006	11.1	12.7	1.5	2.52
2007	11.4	13.6	4.8	2.79-4.14
2008	8.9	11.3	5.9	2.25-3.87
2009	9.1	12.7	-0.7	2.25
2010	10.3	10.2	3.3	2.75
2011	9.2	8.9	5.4	3.5
Average	**9.41**	**11.93**	**1.8**	**2.65**

The Government is fully aware of the insufficient level of yield from individual accounts to keep its relative value over time and finally ensure a substantial replacement rate to contributors. This is why, in 2017, a joint instruction from Ministry of Finance and Ministry of Human resources and Social security established that the rate of interest on individual accounts should henceforth be somehow linked to increases in average social wage, with as a result a rate of return prescribed at 8.3% for the current year.

System Fragmentation

The Chinese pension scheme for Urban employees was conceptualised, tested and implemented at a time when economic and social mobility were not yet the rule for most of the active population. Its core feature, which is the pooled part of the pension benefit, initially expressed the amounts of entitlements in percentage of the average social wage – and the addition at a later stage of a component linked to individual contributions[7] did not fundamentally alter the anchoring of the scheme onto local realities. The prevalent pattern remains that of a kind of minimum pension, established at 40% of average social wage in the pooling area, provided a minimum of 15 years of contributions were paid and legal retirement age was reached (normally 50 – female workers –55 – female cadres, – 60 male).

THE PENSION FORMULA

Pooled pension = 1% per Contributed Year of (Average local salary + Average individual salary)/2

$$0.01*NYC*(ALS+AIS)/2$$

- Individual account = (Contributions + interest)/Nb of actuarial months (e.g. 139)

Although the State Council has established the rule that pooling – i.e. the area within which contributions are collected, benefits are processed and paid – should be established at the national level with, as a first step, the Provinces becoming the geographical basis for the functioning of the system, there are still a considerable number of instances where, within nationally prevailing legislation and rules, some local parameters and rules are kept starting with contribution rates actually in force in some Provinces. [8, 9]

Binding a substantial portion of the pension to local conditions is a measure protecting best the interests of the weakest segments of the contributing population, since it ensures that a minimum benefit be paid, at a level ensuring that pensioners do not risk falling in a poverty trap. However, in a country like China where differences are very important across regions – and sometimes even within region – in terms of standards of living including salary levels, the question arises of how to cope with such differences within the pension scheme. This is of course one of the strong obstacles to a higher level pooling – beyond the desire of existing local authorities to preserve their autonomy and avoid funds centralization[10].

The table below, based on 2015 data from the NBS, shows variations in average wage among provinces. Around a country average of some 40.000 Yuan/year[11] the lowest provincial average of

some 27.000 Yuan is to be found in the North East formerly highly industrialised Provinces (heavy industry), while the highest of some 54 and 58.000 Yuan respectively are in city provinces of Tianjin and Beijing, also in the North of China. In other words, there is a difference of more than 100% between the lowest and the highest average provincial wages – not to mention important variations also to be found at the intra-provincial level.

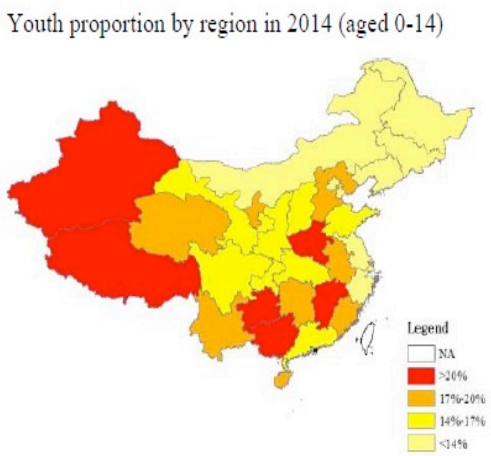
Table 4. Average Provincial wages, 2015 (RMB Yuan)

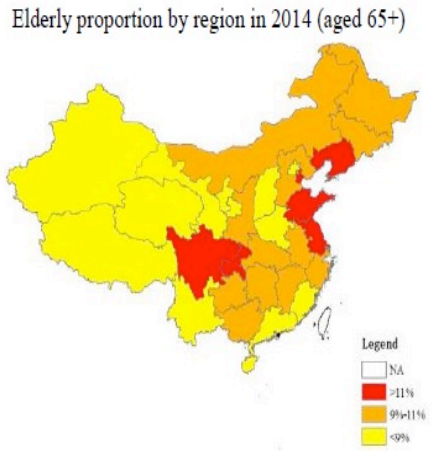
NATIONAL	39589	***NORTH EAST***		Anhui	37148	***SOUTH***		Yunnan	35015
NORTH		Liaoning	33812	Fujian	43385	Guangdong	44838	Tibet	n.a.
Beijing	58689	Jilin	27774	Jiangxi	33329	Guangxi	33519	***NORTH WEST***	
Tianjin	53352	Heilongjiang	28586	Shandong	43608	Hainan	37093	Shaanxi	33220
Hebei	34084	***EAST***		***CENTRAL***		***SOUTH WEST***		Gansu	31031
Shanxi	30195	Shanghai	41762	Henan	30546	Chongqing	44293	Qinghai	32248
InnerMongolia	35512	Jiangsu	43689	Hubei	31051	Sichuan	35127	Ningxia	36322
		Zhejiang	41272	Hunan	33033	Guizhou	36044	Xinjiang	37598

Official census data make it difficult to precisely evaluate the demographic impact of internal migration since migrant workers considered as temporary residents at their place of work are still counted as residents at their place of origin. Even with this proviso, however, the maps below[12] show that provinces in the coastal area are characterized by a low prevalence of young generation (below 14 years of age) without being necessarily affected by demographic ageing (high proportion of elderly population).

It is commonly accepted that, for returning migrant workers, the issue in terms of pension when accepting them back for retirement is linked to the pooling component (akin to a guaranteed minimum pension) for which contributions paid at the place of work are not transferred. This however does not take into account the fact that, to ensure continuity in coverage throughout life time in retirement, it is prescribed that when amounts (theoretical or real) accumulated on individual accounts are exhausted – which may happen as early as at age 72 ½ for workers retiring at age 60 – the payment of the benefit is then secured from the local pooling fund, to which returning migrant workers did not contribute locally.

Maps 1 & 2. Proportion of young and aged people by Province



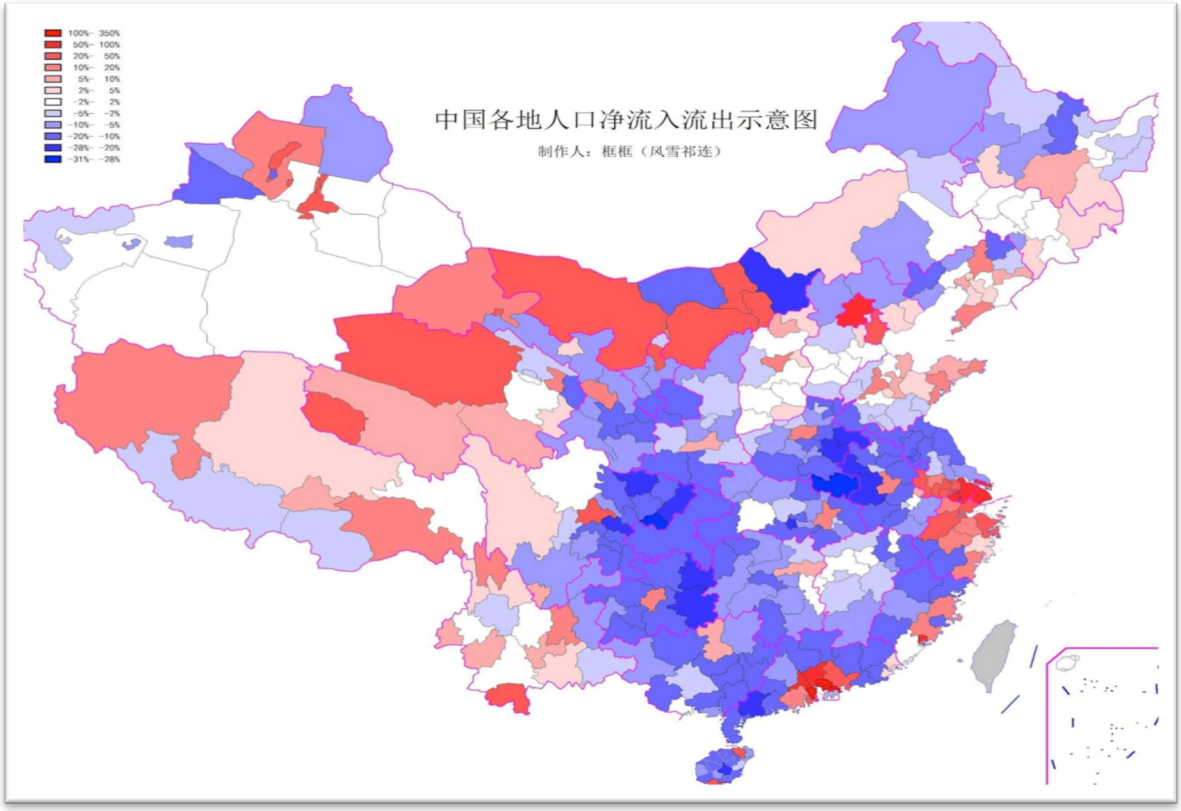


Furthermore, the multiplication of local development centers across the country has made internal migrations become an extremely complex phenomenon, where inter- and intra-provincial flows coexist.

The below map[13] illustrates these flows at the prefecture (sub-provincial) level, with red color corresponding to net recipient prefectures, and blue to prefectures of net labour emigration. In the absence of a unified pension scheme at the national, or even at the provincial level to allow for the vesting of rights following workers' mobility patterns, there is no surprise when enrollment under pension scheme does not appear as a priority for the most mobile part of the active population.

It should also be noted that, even when mobile population join the urban workers' pension scheme – which in 2015 was already the case for 56 million migrant workers out of a total of 277 million (including 169 million migrating outside their Province of origin)[14], the question remains of vesting of acquired rights under the Rural and Urban Resident Pension scheme – for which very few provinces have actually provided for specific provisions as well as of ensuring continuity in coverage when the workers make use of unemployment insurance benefits between two periods of contributory employment.

Map 3. Internal migrations



Relatively low level of protection

Whereas most of the spectacular increase in personal coverage under the pension system was achieved through the reform in 2009 of the rural savings scheme, extended in 2012 to urban residents and henceforth denominated pension scheme for rural and urban residents, the level of benefits under this scheme is far from representing a real safety net – as is the case with the pooled portion of the basic pension scheme for urban employees. The table below[15] provides nationally averaged data on the pension scheme for residents – for which parameters, notably the level of pension benefits, are under control of local authorities, which may result in quite different, but always relatively low levels. The scheme still requires to be heavily subsidized, with average monthly contributions of 17 yuan a month (average monthly benefit 117 yuan) in 2016.

To illustrate the very low level of those benefits, one may refer to[16] (year 2014) the level Beijing minimum wage of 1560 yuan/month or that of the Beijing per capita urban "dibao" (social assistance minimum income scheme) standard of 650 yuan/month compared to the (Beijing) average resident monthly pension of 496 yuan. That same year, the average pension for urban employees in Beijing exceeded 3.000 yuan a month.

Table 5. Rural and Urban resident pensions

Year	Number of participants (million)	Number of beneficiaries (million)	Average yearly contribution one person (Yuan)	Average pension benefit per month (Yuan)
2008	56	5	--	--
2009	87	15	--	--
2010	103	28	300	60
2011	326	85	172	58
2012	460	121	168	73
2013	474	128	177	81
2014	501	147	186	89
2015	505	148	196	119
2016	508	153	206	117

As for workers in the Urban employees' pension scheme, from the inception of the reform (gradually from the late seventies) protection was ensured almost exclusively through the public basic pension ("pooled" and individual account components).

In order to enhance this protection, and to allow additional resources to flow into the system, the Government launched in 2004 an Entreprise annuity scheme following upon entreprises experiments dating back from the nineties, which was also to contribute to securing commitment of workers towards the entreprise, at a time when a very rapidly expanding economy coupled with a liberalization of the labour market incited workers to frequently change positions in quest of higher standard of living and better working conditions.

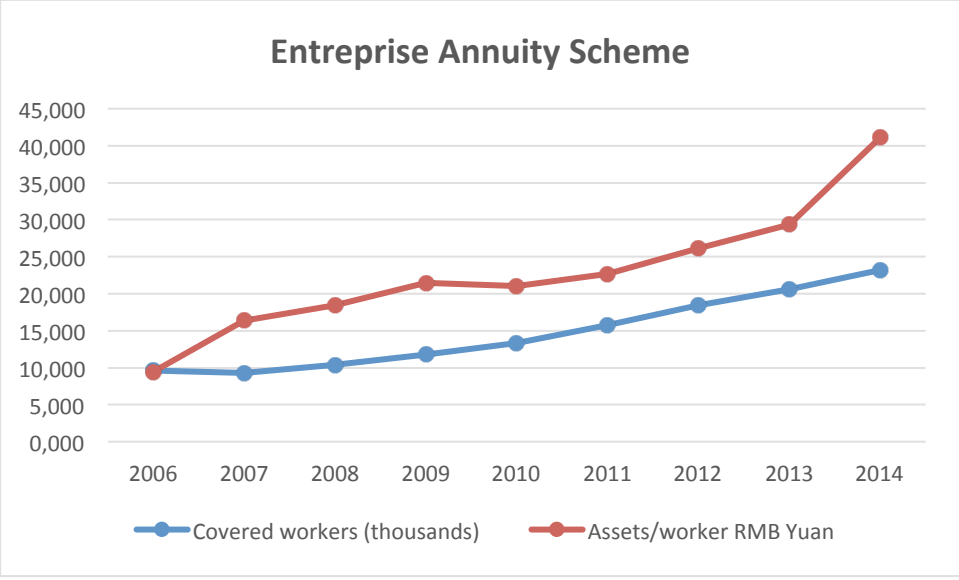
The table and graph below provide information about the development of the Entreprise Annuity scheme over the ten years for which the corresponding data are available. It appears that, although progressing year after year, the coverage under entreprise annuity schemes remains limited – since it has been established in 75.500 entreprises whereas the country counted some 16 million "legal entities" in 2015[17], for the benefit of 23 million workers i.e. some 10% of those actively contributing to the Urban employees' pension scheme.

The assets accumulated in the fund for entreprise annuities were multiplied by ten in nominal terms over the decade, and the assets per member of the scheme increased by 4.5 times.

However, in relation with economic parameters of active or retired workers, individual amounts accumulated remain quite modest since, at an average level of 41.000 RMB yuan in 2015, they were equivalent to 8 month of the average salary of urban workers in non-private sector (62029 RMB yuan per year). Considering that these amounts are earmarked for old-age protection, which spreads over some 25 years after retirement, their impact on the standards of living of pensioners would be rather limited.

Table 6 and Graph 4. Entreprise Annuity Scheme

Year	Nb entreprises	Nb workers-million	Accumulated assets billion yuan	Assets per worker 1000 yuan
2006	24000	9.640	91.0	9.440
2007	32000	9.290	151.9	16.351
2008	33000	10.380	191.1	18.410
2009	33500	11.790	253.3	21.484
2010	37100	13.350	280.9	21.041
2011	44900	15.770	357.0	22.638
2012	54700	18.470	482.1	26.102
2013	66100	20.560	603.5	29.353
2014	73300	23.160	952.6	41.131



Mention was already made (see Table 3 above) of the insufficient remuneration of amounts inscribed in workers'individual accounts for basic pension, which of course contributes to the overall feeling of insufficient yield to match the economic and individual cost of the system (high cost-benefit ratio), in particular for those whose remuneration is superior to the average social wage – who may question the rational of having to pay high nominal contributions yielding pension results not significantly different from those achieved for the lowest ranges of salaries. This has been addressed through ad hoc measures taken in 2017 to increase interest rate accumulating in individual accounts up to the level of improvement in average social wage.

However, the persistent tendency of not accumulating "real assets" in individual accounts, while the pension fund balance (Urban scheme for employees) continues to grow also contributes to create a feeling of distrust among contributors and even beneficiairies, who wonder about the reality of their rights in course of acquisition or the future of their pension benefits. The table hereafter[18] shows that over the past years the proportion of "real account assets"was of only 12.5% of the total on personal accounts, while the "empty accounts" represented a slightly more important amount than the overall pension fund balance[19].

Table 7. Composition of assets in individual accounts

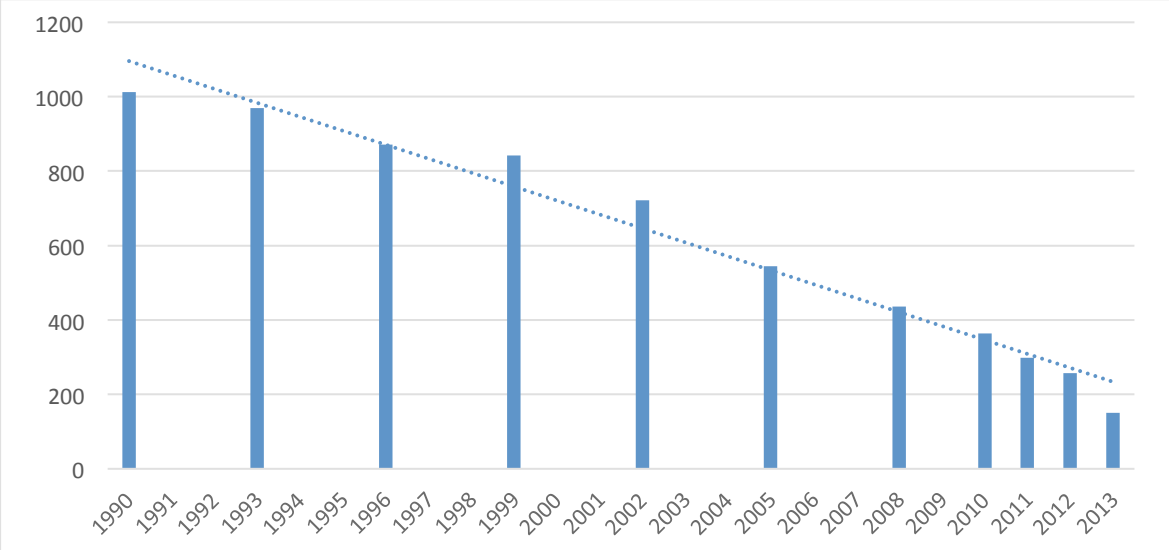
Year	Accounting Balance	Real Account Assets	Empty Account Assets	Pension Fund Balance
	billion	billion	billion	billion
2006	999.4	—	—	548.9
2007	1174.3	78.6	1095.7	739.1
2008	1383.7	110.0	1273.7	993.1
2009	1655.7	156.9	1498.8	1252.6
2010	1959.6	203.9	1755.7	1536.5
2011	2485.9	270.3	2215.6	1949.7
2012	2954.3	349.9	2604.4	2394.1
2013	3510.9	415.4	3095.5	2826.0
2014	4097.4	500.1	3597.3	3180.0

In addition to the feeling of insufficient cost-benefit analysis for old-age pensions, the Urban employees'pension scheme also attracts some criticism because it fails to address hardship situations such as those created by early disability or premature death of the worker for non occupational causes, the scheme having not yet developed specific provisions for disability or survivors' benefits.

Redistributive effect

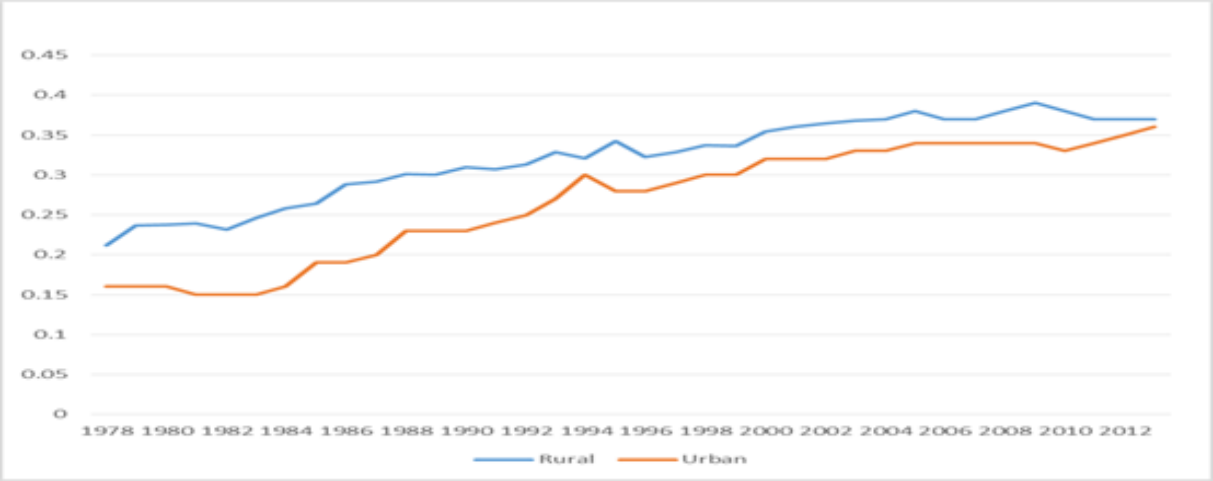
China's efforts in dramatically reducing absolute poverty are unanimously praised. The graph below, based on World Bank data using a quite high threshold of 3.10 $ a day in purchasing power parity PPP for establishing a poverty line [20] leaves little doubt on the ability of the country to eradicate worst forms of poverty among the population well ahead of the official Millennium Development Goals deadline.

Graph 5. Poverty head count, WB estimates



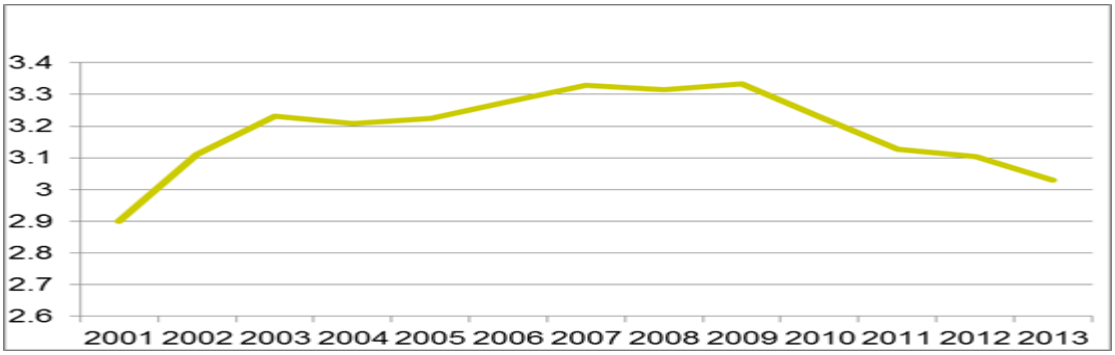
However, this decrease in incidence of poverty did not translate into the narrowing of in-country primary income gap, since economic development went on at an even faster pace than poverty eradication. The graph hereafter[21] shows that, be it in urban or in rural area, the measurement of income inequality through Gini coefficient has shown a consistent path upwards between 1978 and 2008.

Graph 6. Income inequality in urban and rural China (1978-2013)



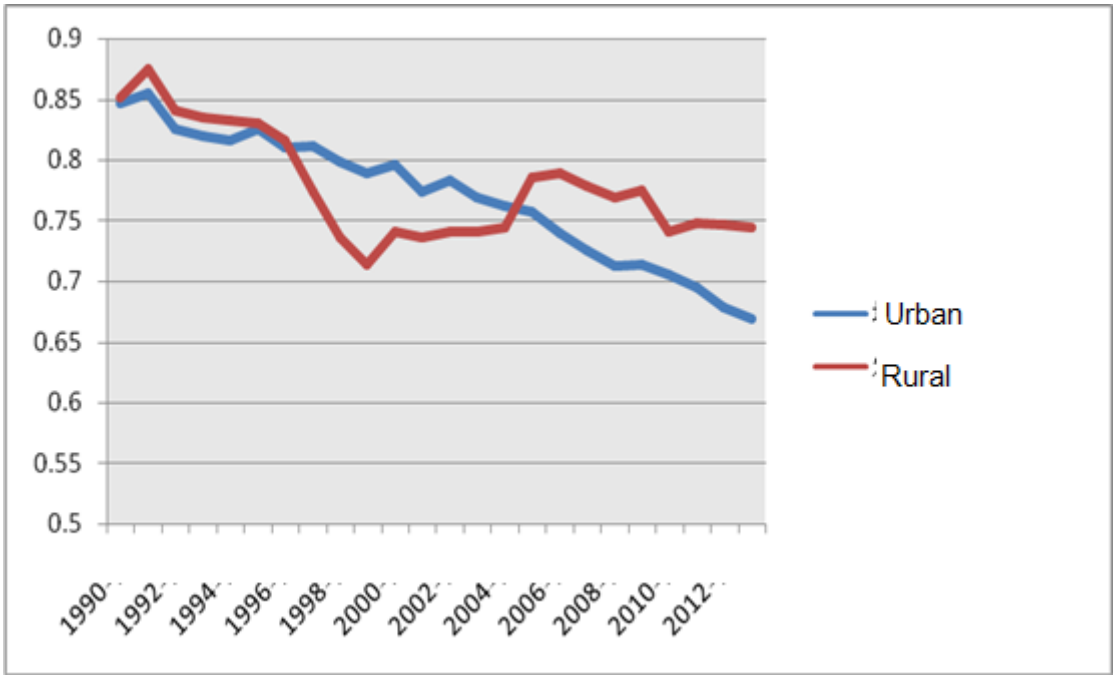
Over recent years, efforts were made by the Government at all levels to better control the situation. The Urban-Rural income gap[21] has shown some clear signs of improvement, as to be seen below, and the overall Gini coefficient had decreased to 0.47 in 2015 after reaching a peak of 0.49 in 2008-2009.

Graph 7. Urban-Rural income gap



There are numerous indicators pointing to the persistence of residual poverty and substantial income inequality in urban and rural areas of China, one of them being the evolution over time of propensity to consume in both groups. The corresponding graph[21] seems to show that, in rural areas, propensity to consume does not decline as much as it did in urban areas at least from the year 2000 – which may be partly attributable to the lack of efficient, high-standard social security protection in rural areas, where in a context of demographich ageing expenses related to health and daily subsistence for the elederly are not always efficiently taken over by collective or family solidarity.

Graph 8. Propensity to consume



Social security provisions still play a measurable, albeit limited redistribution role in China. The following table[21] details the effect of redistribution through taxes and social security policies, achieving a decrease in income inequality of some 4.5 percentage points (2013 data), with a

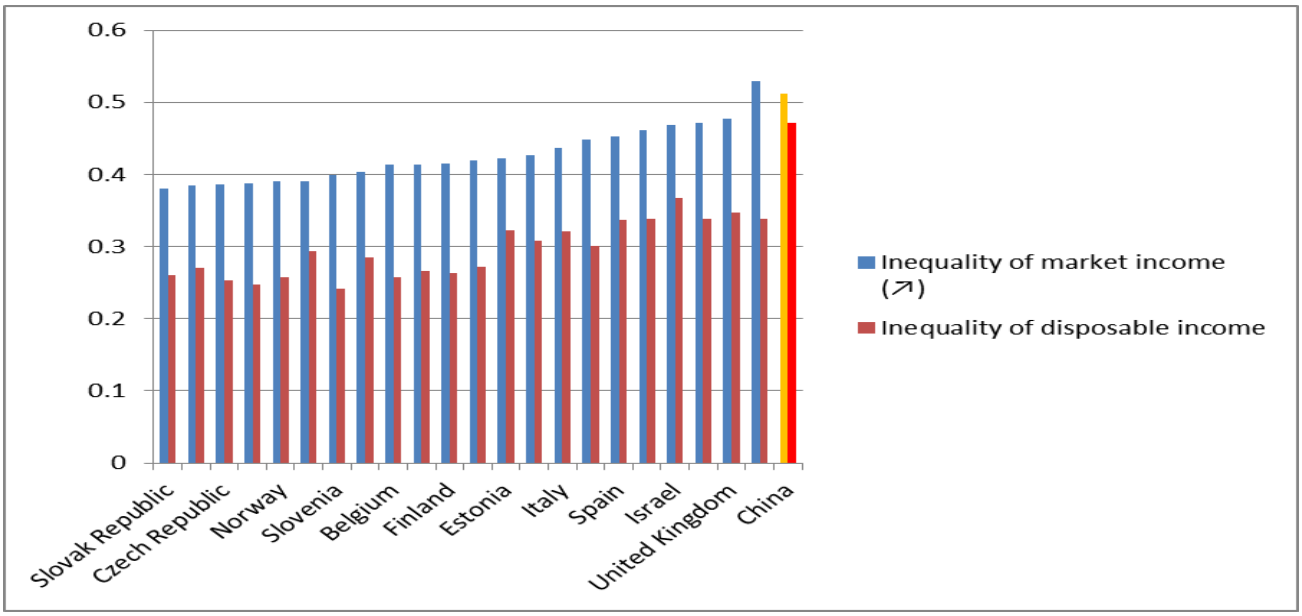
decrease in Gini coefficient from 0.5174 to 0.47203 (- 9%). The most important contribution to this reduction in inequalities is attributable to the pension system for urban workers, representing 6 out of the total of 9% reduction. This is no doubt due to the pension formula which grants a higher replacement rate for lower range of remunerations through its predominant pooled component.

Table 7. Redistributive effect of transfer income, 2013

	Gini	Change in Gini	%
Market income	0.51740		
+ Public transfers	**0.47203**	**-0.04564**	**-8.82**
+ Urban workers' pension	0.48691	-0.03076	-5.95
+ Urban residents subsidy	0.48366	-0.00325	-0.63
+ Rural residents subsidy	0.48098	-0.00269	-0.52
+ Other pension	0.48040	-0.00058	-0.11
+ Dibao	0.47848	-0.00192	-0.37
+ Social relief	0.47741	-0.00107	-0.21
+ Other relief	0.47657	-0.00084	-0.16
+ Rural medical reimbursement	0.47568	-0.00090	-0.17
+ in-kind subsidies	0.47519	-0.00049	-0.09
+ Various agricultural subsidies	0.47203	-0.00315	-0.61

The relatively limited impact of social security provisions in addressing income inequalities in China is in fact best evidenced through international comparisons. The following graph[22] thus shows that, in regard of a sample of countries from the European region having adopted different types of social security financing and benefits systems, China appears as a country where inequality of market income is almost maximum – second only to the United Kingdom – while the reduction in inequality through social security and other welfare measures is indeed minimal – among OECD countries, comparable only to the situation prevailing in Chile (high inequality, low redistribution).

Graph 9.Redistribution effects of social security and welfare

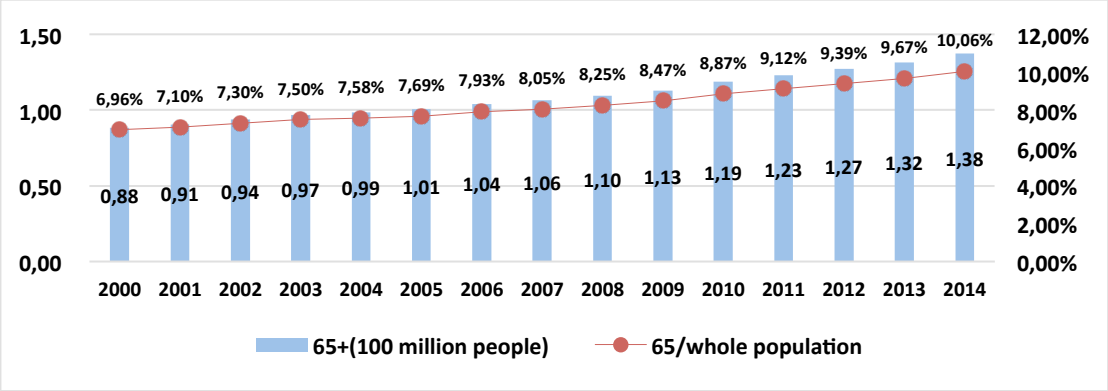


The challenge of ageing

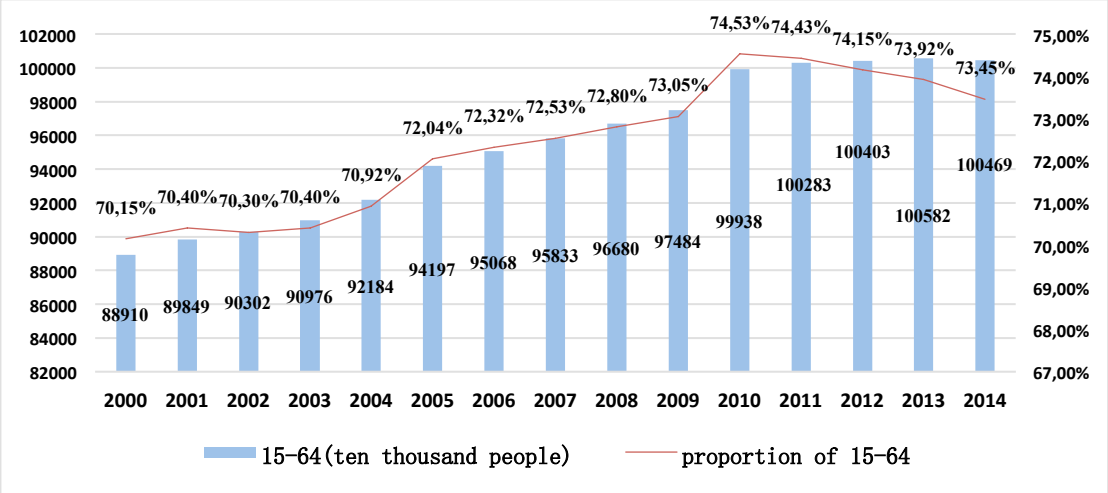
For a number of well-known reasons, combining improvements in life expectancy and decreases in birth rates, the population aged 65 and above in China has experienced a continued and important growth since the year 2000, reaching in 2014 some 140 million persons, i.e. 11% of the population. At the same time, the population in age range between end of compulsory learning and late retirement (15-64) has indeed increased over the same period, but its relative importance appears to be decreasing since 2010[23].

Graph 10. Quantity and proportion of the population (2000-2014)

A. Population aged 65 and above



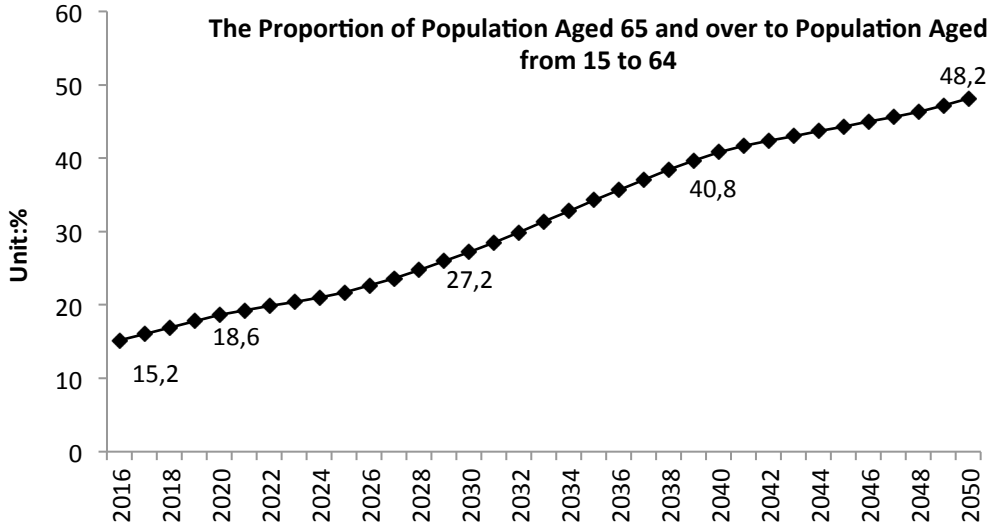
B. Population aged 15-64



When projected into the future[24], this evolution mechanically translates into a steadily deteriorating old-age dependency ratio, i.e. and increase in the population aged 65 and above to the population aged 15 to 64[25]. Hypothesis retained by the National Health and Family Planning Commission thus point to a situation where, in the year 2050, the proportion of persons aged 65 and above will be practically half of those aged 15 to 64. Table and graph below detail figures in this respect.

Table 8 and Graph 11. Forecast of China population and structural changes (2016-2050)

Year	Total Population (million persons)	Proportion (%)		Proportion (%)	
		15-59	15-64	Aged over 60	Aged over 65
2016	1382.226	66.7	72.3	16.6	11.0
2017	1391.117	66.2	71.6	16.9	11.5
2018	1399.267	65.6	70.9	17.3	12.0
2019	1406.647	65.1	70.3	17.7	12.5
2020	1411.791	64.6	69.8	18.2	13.0
2025	1422.139	61.8	68.6	21.7	14.9
2030	1417.923	58.8	66.8	26.2	18.2
2035	1404.096	57.3	64.9	29.9	22.2
2040	1382.710	55.9	62.3	31.9	25.4
2045	1352.836	53.9	60.8	33.8	26.9
2050	1313.198	50.2	59.2	37.5	28.5

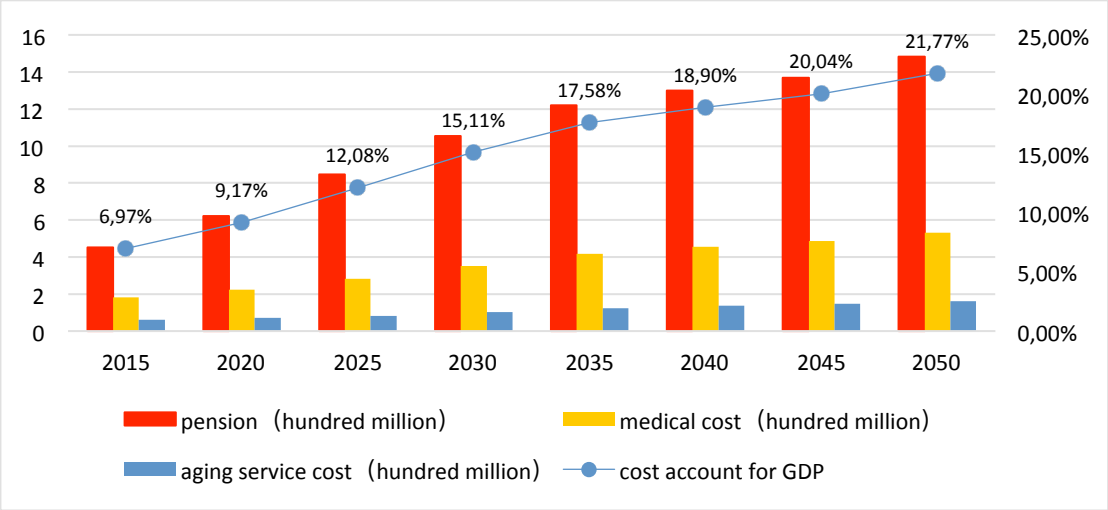


This prospective situation of course raises doubts on the capacity of a pension system mostly based on pay-as-you-go PAYG provisions financed out of income-based contributions supplemented by Government subsidies, to remain viable in the medium if not long term, which will be duly contemplated in the following section of this document.

However, the cost of population ageing is not limited to that of old-age security, as shown in the graph below[23].

According to these predictions, over the next 35 years, the cost for old-age pension, the cost for services to the elderly (including but not exclusively residential care) and the cost for medical care would amount to some 22% of GDP as against just 7% in 2015, thus starting to catch up with lower levels already reached in EU countries[26]. Not surprisingly, pension expenses will represent the bulk of the cost, reaching to almost 15% of GDP in 2050 as against less than 5% currently, but the combined effect of increases in service and health care for the elderly is not negligible, since it will reach to 7 to 8 % of GDP, which is more than the current expenditure for pensions.

Graph 12. Estimate of the cost of population ageing, 2015-2050



The Chinese government is well aware of this latter phenomenon, and special insurance schemes providing for long term care for the elderly are currently being tested across China[27].

It is also to be noted that, in the context of the New Normal Economy[28] where growth is to be more centered on internal demand and the service industry, the perspective opened on the "greying economy" is to be welcomed. As a matter of fact, ensuring a better and higher level of social protection to a growing proportion of an aging population may represent an opportunity for sustainable economic development.

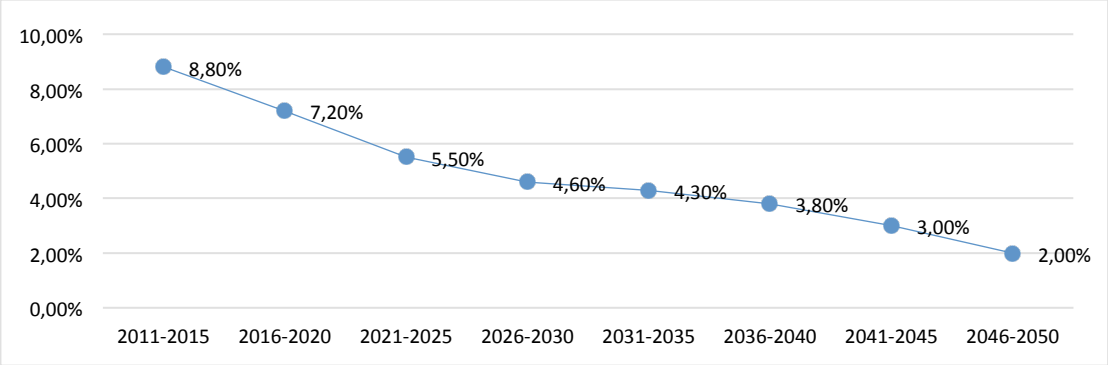
If this path is taken, current predictions according to which prospects for GDP growth would unavoidably deteriorate with – notably – the decrease in labour force (for which replenishment via international migration is not yet considered as an option in national simulations) might prove to be overly pessimistic – with as a consequence the share of the cost of ageing for the economy being over-estimated.

Economic Affordability

Demographic ageing may further affect GDP growth in China, which marginal increase is shrinking over the years due to difficulties in keeping access to foreign markets or accessing new markets, in a context of global competition where national productive costs increase with overall national wealth and standards of living. An ageing population being more inclined towards consumption than savings, resources for investment opportunities may also be shrinking, which may affect further the economic potential for growth. China has established a Strategy research team dealing with population ageing that estimated in 2014 that, while GDP growth would decrease to 4% in 2050 through mechanic factors, it would be further down to 2% if ageing is taken into account.

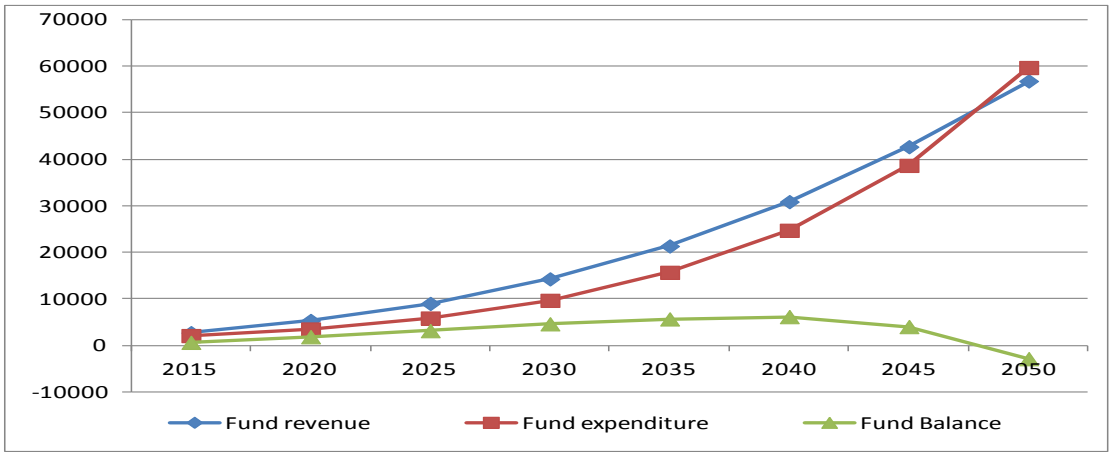
Under such assumptions, the evolution of GDP growth in China over the next 35 years would be as shown in the following graph[22].

Graph 13. Anticipation of GDP annual growth rate (2011-2050)



Under such a scenario, accompanied by an anticipated relative and perhaps absolute decrease in the labour force (see graph 10 B above), forecasts are being elaborated[29] predicting that just before 2050 expenditure will surpass revenue for the basic pension system for urban employees, which sustainability is thus formally questioned.

Graph 14. Revenue and expenditure of the Urban employees' pension scheme (2015-2050)



In fact, if public financial subsidy is not included, currently most of the provinces have undergone deficits in terms of Pension fund balance. In 2015, there were in total 24 provinces where pension expenditure exceeded contribution revenue collected (see table below[30]).

Table 9. Balance of Pension fund for Urban Employees in Different Provinces (Total Contribution minus Total Expenditure), 2015 (billion ¥)

PROVINCE	BALANCE	PROVINCE	BALANCE	PROVINCE	BALANCE
Guangdong	79.760	Yunnan	- 3.091	Inner Mongolia	-16.253
Beijing	51.331	Anhui	- 3.426	Shaanxi	-17.102
Zhejiang	17.240	Qinghai	- 3.604	Shanghai	-20.362
Jiangsu	11.768	Hainan	- 4.995	Hunan	-21.357
Shandong	3.005	Gansu	- 7.997	Henan	-23.370
Fujian	1.910	Jiangxi	-11.043	Jilin	-23.942
Tibet	0.369	Xinjiang P&C	-11.065	Sichuan	-27.567
China Agricultural Development Bank	0.092	Tianjin	-12.447	Hubei	-32.476
Guizhou	-0.043	Shanxi	-13.296	Hebei	-33.419
Xinjiang	-0.390	Guangxi	-13.666	Heilongjiang	-56.114
Ningxia	-2.705	Chongqing	-16.084	Liaoning	-69.298

It is worth noting that the 2050 "overall deficit" would occur at a time when what is commonly called the "history debt" of the pension fund, i.e. the payment of pensions to workers having retired before the inception of the new system ("old workers") or before it was fully operational ("transition workers") would have disappeared, as shown in the graph below – this dramatic decrease in 'free crediting' of insurance periods being apparently insufficient to secure a sustainable future for the Fund.

This said, the worrying trend thus identified could probably be mitigated if not avoided, through the adoption of a set of measures to improve resources and limit expenditure under the pension funds such as:

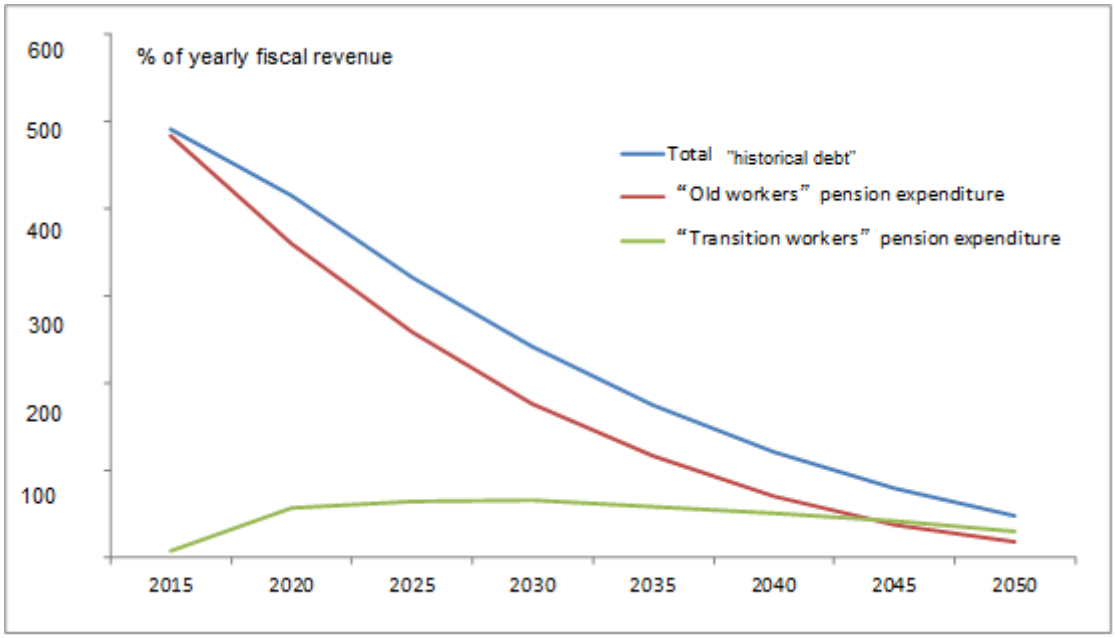
i. identification of alternative sources of financing,
ii. adjustment of pension formula to react to demographic factors,
iii. review of qualifying conditions towards incentives to longer contributory careers[31],
iv. improvement in the scope of personal coverage.

The latter factor would correspond to a better enrolment in the urban employees' pension scheme for categories until now insufficiently covered, including through upgrading the capacity of the scheme to attract new contributors[32].

It would also seem reasonable, as indeed advocated by the State Council, to promote the implementation on top of the basic pension scheme of second and third pillar schemes

(supplementary pension schemes) that would directly address the needs and expectations of better off workers, to achieve higher replacement rates[33].

Graph 15. Extinction of "history debt" in Urban employees' pension scheme



Conclusion

The 13th Five-year plan for National economic and social development of the People's Republic of China (2016-2020), to which the project contributed[34], fully embodies the critical features that were just detailed in the preceding sections of this document. While the 12th Five-years Plan (2011-2015) allowed for the spectacular expansion of the social security system both for urban and rural resident and employees, it is expected that the current Plan will ensure the consolidation, integration and, when necessary, reforming of the said system.

The table below[35] details the commitments of the Plan for social security reform (chapter 64) in the context of an aging society (chapter 65). It further relates those Commitments to the challenges that were just summarily described, and to the results assigned to the present EU-China Social protection reform project, Component 1.

Table 10. Social insurance commitments of the XIIIth Five-year Plan

XIIITH FIVE YEAR PLAN COMMITMENTS	**CORRESPONDING CHALLENGES**	**MATCHING PROJECT EXPECTED RESULTS (C.1)**
- Ensure complete coverage ○ Universal and effective coverage	SYSTEM FRAGMENTATION	1.4 RURAL-URBAN INTEGRATION & VESTING

- Make the system more attractive
  ○ Target particular groups (migrant workers, flexible employment)
  ○ Strengthen development of public service facilities and information platform
  ○ Take initiatives concerning use of social security cards
	SYSTEM ATTRACTIVENESS	1.1. IMPROVED INTER-AGENCY COOPERATION

- Guarantee sustainability
  ○ Ensure actuarial balance
  ○ Perfect funding mechanisms
  ○ Clearly establish respective responsibilities of Government, entreprises, individuals
  ○ Reduce insurance premium for entreprises
  ○ Use portion of state assets to replenish social security funds, expand channels for investment, strengthen risk management
	ECONOMIC AFFORDABILITY	1.2. POLICY DEVELOPMENT & EVALUATION

- Improve pension benefit levels
  ○ Enhance basic old-age insurance (social pooling and individual accounts)
  ○ Establish multi-layer old-age insurance system
  ○ Place social pooling under unified management
  ○ Improve individual accounts system, establish incentive/restraints on basic pensions, regularly adjust basic pensions
	LOW LEVEL OF PROTECTION	1.3 FULL COVERAGE THROUGH OLD AGE INSURANCE

- Broaden scope of coverage
  ○ Launch pension schemes that allow for deferred payment of individual income tax
  ○ Better use Unemployment insurance, Work injury insurance, establish flexible contributions
  ○ Make transferability easier
	REDISTRIBUTIVE EFFECT	1.1. IMPROVED INTER-AGENCY COOPERATION

- Population ageing (chapter 65)
  ○ Support two-children policy
  ○ Facilitate employability of elder workers
  ○ Gradually increase retirement age
	THE CHALLENGE OF AGEING	1.2. POLICY DEVELOPMENT & EVALUATION

European social security schemes have accumulated, over the years, substantial experience in related areas. The Project Component 1 has been and will continue being instrumental in allowing access to that experience, and in facilitating high-level dialogue and exchanges between European experts and institutions in all areas of common interest for a successful social security reform in China.

In that respect, the Component 1 Project team prepared a set of technical Notes presenting aspects of particular relevance in the European experience of social security pension schemes and their reforms, which will hopefully help in mutual understanding of respective Chinese and European situations, so as to increase the efficiency of project facilitated bilateral and multilateral cooperation in the realm of pension reform.

Jean-Victor Gruat, 26 July 2017 v.3

[1] Sources: National bureau of Statistics NBS, Ministry of Human resources and social security MoHRSS (Annual statistical bulletin)

[2] Economic replacement rate of pension benefits: ratio between amount of benefit and GDP per working capita

[3] Contributions cannot be expected to be strictly proportional to wages, since i. there is a minimum (60% of average wage) and a maximum (300% of the average wage) on the basis for contributions; and, ii. employers are not required to contribute for all workers to all branches of social protection (there are for example exemptions for the construction industry in the area of occupational accidents – special provisions).

[4] Whereas the ceiling on contributions at 300 % of the average social wage may be viewed at limiting the burden on entreprises and individuals, the minimum contributory level at 60% of the said avarege may conversely be viewed as adding to the costs in those branches where employment of workers with low qualifications is predominant. In any event, the basis for contributions – and hence for individual benefits – includes only the base – or social – salary, whereas premiums, bonuses, fringe benefits may represent a veery important propotion of remuneration (cases of 4:1 proportion between full remuneration and base salary are frequently mentioned).

[5] Source: EU-China SPRP project report, Dong Keyong, Sun Bo, Wang Gengyu, Multi-tiered design of pension systems, Beijing 2015.

[6] Source: Zhen Li, The basic old-age insurance of China: Challenges and countermeasures, paper submitted for the World Pension Summit 2013.

[7] This is different from the part of the pension linked to the workers'individual accounts. As a matter fo fact, the introduction in the "pooling formula"of an element related to the workers'contributions over the last year affected the "purity"of two, until then, very distinct components – that made the Chinese scheme resssemble succesful experiments in a few highly developed economies (Switzerland, Quebec) where pension benefits are composed of a solidarity, flat rate component combined with a savings component, based on individual contributions.

[8] For example, the "legal"rate of contributions for basic pension – 20% employer, 8% employee – is applied in Beijing, but not in Shanghai – 22+8 – or in Guangzhou – 14+8 . Affluent, coastal regions where a high proportion of workers come from other Provinces, justify lowering the rate of contributions for the "pooled component" of the pension precisely because they would never have to pay this share of the pension to migrant workers retiring back at their place of origin, since the corresponding amount of contributions is not being transferred to those Provinces of origin, to finance the cost attributable to incoming retirees. Individual accounts though are transferrable.

[9] In 2017, China administers 33 provincial-level regions, 334 prefecture-level divisions, 2,862 county-level divisions. In the EU-China SPRP project report "Reform of China's Social insurance adminsitration service system" (Beijing 2015), Tan Zhonghe mentions that in 2013, 5 Provinces, 108 Municipalities and 1397 Counties had set up specialized entities for managing social insurance independently of other Government activities. Otherwise, there are some 8300 administrative settings performing duties related to social insurance (specialized by risk, local or in entreprise).

[10] During a mission to Guangdong Province conducted by the EU-China SPRP, local authorities noted that "While in theory Guangdong operates on the basis of provincial social pooling, the provincial level intervenes only to collect surplus and make good for deficits at the city level. Thus, there are still some 24 de facto pooling areas, hence a great number of transfers including within the Province." (source: Project internal mission report)

[11] As of 1 July 2017, 100 Yuan RMB were worth approximately 13 Euros.

[12] EU-China SPRP publication, Beijing 2017, Michele Bruni: China in Figures – Economic grwoth and demographic trends, a Province perspective

[13] From Matthew Hartzell, 2013, Maps for internal China migration http://matthartzell.blogspot.com/2013/09/chinese-domestic-migration-map.html

[14] Source: Ministry of Human Resources and Social Security, Statistical Bulletin, http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneiyaowen/201605/t20160530_240967.html

[15] Source: Fang Lianquan Rural Pension Reform in China: Lessons from Latin American Countries, 2016, data updated by the author for recent years based on national and MoHRSS statistics

[16] Source: EU-China SPRP Project report, Component 3, Gang Shuge & Guo Yu, Experiences on unified standards for calculation of social assistance benefits, Beijing 2015

[17] Sources NBS and MoHRSS statistics

[18] Source: EU-China SPRP Project report, Zheng Bingwen, Financial sustainability of pension schemes in China, Beijing 2016.

[19] Discussions are on-going in China on the possible use of State industrial assets'value to "replenish"individual accounts. See EU-China SPRP Project report, Song Xiaowu, Evaluation of the combination of social pooling and individual accounts techniques in the pension scheme for urban employees, Beijing 2015.

[20] This corresponds in 2013 to a little bit more than 2000 RMB yuan per month – PPP index 3.545, exchange rate 6.196. For developing economies like that of China, the usual threshold is 1.90 $ a day in PPP. Data from http://povertydata.worldbank.org/poverty/country/CHN and https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm

[21] Source: EU-China SPRP Project report, Li Shi, Redistributive effects of social security system in China, Beijing 2016

[22] Sources: EU-China SPRP Project report, Jean-Yves Hocquet, Relations between Employment and Social security policies in Europe, Paris 2016 and Li Shi (2016)

[23] Source: EU-China SPRP Project report, Dong Keyong, Impact of Demographic ageing on social security policies in China, Beijing 2016

[24] Source: EU-China SPRP Project report, Zhang Juwei, Relations between labour market and pension reform in China, Beijing 2016

[25] The lower age limit of 15 is traditionally taken as starting age to be counted in the active population. However, with progress in instruction and other factors such as difficulties in finding a first suitable employment, the age at which students actually join the labour market is closer to 25 than to 15, which may contribute to a further deterioration of the above-mentioned old-age dependency ratio.

[26] See Hocquet (2016). In 2012, the net social protection expenditure represented on average 25% of GDP in the EU27 countries – ranging between 15 and 35%.

[27] One of these schemes is being tested in Shanghai. See EU-China SPRP Project presentation, Pu Haihong, Counter measures study against aging problem in Shanghai, in Perspective of Employment policy and social security reform 2016-2020: Report of the 2016 High Level Event, vol.I, Beijing 2016.

[28] Chinese President Xi Jinping coined the "new normal" economy for China in February 2015 as "a crucial rebalancing, one in which the country diversifies its economy, embraces a more sustainable level of growth, and distributes the benefits more evenly"- Hu Angang, Foreign Affairs magazine, May-June 2015.

[29] Source: EU-China SPRP Project report, Zheng Bingwen, Financial sustainability of pension schemes in China, Beijing 2016.

[30] Source: China Pension Report 2015, The Centre for International Social Security Studies at Chinese Academy of Social Sciences

[31] These possible "parametric reforms"are currently under review by the SPRP project team and experts.

[32] Among factors of attractivity one may quote: improving and guaranteeing the proportion of real assets in individual accounts; improving the rate of return on amounts invested in individual accounts; establishing a better linkage between contributions and benefits; providing for bridges between the various schemes and for easier and full vesting among pooling areas; linking contirbuting to pension schemes with access to more immediate benefits related to health, disability, survivors, family support etc.

[33] See EU-China SPRP project report, Dong Keyong, Sun Bo, Wang Gengyu, Multi-tiered design of pension systems, Beijing 2015.

[34] See EU-China SPRP Project report, Tan Zhonghe, Research Report on Development of China's Old-age Insurance for the 13th Five Year Plan period, Beijing 2015. NDRC, which is the main Chinese stakeholder for the Project, is also the body responsible for the Plan.

[35] Author's presentation. The full text of the XIIIth Five-year Plan can be accessed from http://sprp-cn.eu/XIIIFive-YearplanEn.pdf (Chinese version: http://sprp-cn.eu/XIIIFive-YearplanCn.pdf)