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Deutsch-Französisches Wirtschaftspoliti-  
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Deutsch-Französisches Wirt-  
schaftspolitisches Forum

**The Impact of Eastern  
Enlargement On EU-Labour  
Markets. Pensions Reform  
Between Economic and  
Political Problems**

**Working Paper**

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# **Forum Economique Franco-Allemand**

## **Deutsch-Französisches Wirtschaftspolitisches Forum**

Together with other members of the European Union, France and Germany embarked on an unprecedented cooperative venture. To be successful, Economic and Monetary Union requires a very high degree of mutual understanding among the policymakers of the participating countries. It also requires upgrading the dialogue between those who contribute to shaping the policy debates on both sides of the Rhine.

France and Germany have a long tradition of high-level dialogue and cooperation in the framework of bilateral and European institutions. But the dialogue between their civil societies does not match this spirit of cooperation. Economists and those involved in practical economic policy making from both countries in particular rarely talk to each other to find out why they may have differing visions of the functioning of Economic and Monetary Union and of the associated challenges, and even more rarely try to narrow the divergence of their views. This lack of dialogue contributes to keeping alive entrenched prejudices on the other country's supposedly hidden policy agenda.

Yet, an Economic and Monetary Union in which policy debates with a bearing on European policy choices remain confined within national boundaries would be prone to instability, because disagreements about policies would tend to end up in dispute between countries. It is, therefore, of utmost importance to foster the emergence of a genuine *European* professional discussion on major economic policy issues.

The purpose of the *Deutsch-Französisches Wirtschaftspolitische Forum/Forum économique franco-allemand* is to contribute to this discussion through the organisation of a series of informal meetings between French and German economists.

The Forum assembles professional economists from academia, business and the public sector. As a non-partisan institution, the Forum brings together participants from all strands of thinking about economic policy with the aim of stimulating fruitful debate. Each meeting is devoted to one or two major policy issues. The Forum commissions papers to provide an informed basis for the discussion, but the focus will be on debate and the exchange of views, starting with reactions from discussants whose role will be to present alternative views and to frame the key issues for the debate.

The proceedings of each meeting are published in policy paper format. With the present brochure, we present papers of the discussion from the Forum's eighth meeting on January 15-16, 2001 in Berlin. We hope that this will be a useful input into an emerging public debate on Europe's economic policies in our two countries and beyond.

Jürgen von Hagen

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# The Impact of Eastern Enlargement on EU-Labour Markets

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## **1. Introduction**

Eastern enlargement will change the character of the European Union (EU). While the EU was a club of rich economies at least from global perspectives throughout the post-war period, it will face a distinct gap in per capita income levels among its Members after accession of the ten candidate countries from Central and Eastern Europe (CEE). Given the magnitude of income and wage differentials, there are mounting concerns among the present EU Members that eastern enlargement may have a number of undesirable effects on labour markets and income distribution. In particular, a deterioration of living standards of the unskilled, associated with job displacement and wage losses triggered by the accession of low-income countries is feared.

The textbook models of trade theory do not dismiss these concerns. Although the standard Heckscher-Ohlin-Samuelson (HOS) model predicts that the integration of economies which differ in their initial endowments will provide gains for all countries involved, it also states that the relative price of the scarce factor in each country will fall until factor prices are eventually equalised. Increasing returns to scale create additional benefits from intra-industry trade, but leave the basic propositions from the HOS-model unchanged. Moreover, if factor prices do not adjust to an additional supply of labour, integration may involve unemployment and even a net loss in welfare. Since trade and factor movements are substitutes in the standard HOS-model, it does not matter whether the barriers to trade or obstacles to factor movements are lifted. Either trade or factor mobility, or both, contribute to the convergence of factor prices.

Needless to say, a number of caveats apply to the predictions of the HOS-model. First, neither the EU nor the Central and Eastern European (CEE) countries resemble the case of two previously autarkic economies which suddenly open up to bilateral trade flows as in the  $2 \times 2 \times 2$  case (two countries, two goods, two factors) of basic trade models. In already open economies such as the present EU Members, only a large volume of trade and factor flows can have a significant impact on domestic labour markets, at least at aggregate levels. Second, even if the CEE countries were not 'too small to matter', transport and transaction costs could

prevent trade and factor flows from reaching levels required to affect wages or employment in the present EU. Third, differences in technologies and factor intensities between the EU and the CEE countries may mitigate or reverse the implications of the standard models of trade and factor mobility. Thus, factor price equalisation is just an extreme outcome within a broad range of possible consequences of eastern enlargement. An in-depth empirical analysis of the size and structure of trade, capital flows and labour migration is needed in order to assess the impact of eastern enlargement on domestic labour markets of the present EU Members.

The remainder of this paper summarises the key findings of a recent study<sup>1</sup> on the likely impact of eastern enlargement on employment and wages in the present EU Member States.<sup>2</sup> As the levels and the dynamics of wage and income differentials play a crucial role in this context, the paper starts by assessing the differences in factor endowments and the likely speed of convergence of the CEE countries to EU income levels. Then the analysis focuses on three main channels, along which enlargement may affect labour markets in the present EU countries, namely i) trade in goods and services, ii) movement of capital, and iii) migration of labour.

### ***1. Differences in factor endowments and the likely speed of convergence***

The economic conditions at the outset of eastern enlargement are characterised by a distinct gap in per capita incomes between the present EU Members and the accession candidates, which can be traced back to differences in factor endowments, technologies and institutions. Per capita GDP levels at current exchange rates, which may serve as a proxy for the productivity of the tradable sectors, amounted in the ten CEE countries to around one-tenth of the respective levels of the present EU countries in 1998. Per capita GDP levels at purchasing power parities, which are a proxy for differences in real living standards, are estimated by the World Bank at around one-third, and by Eurostat at around two-fifths of those in the present EU. This gap in per capita income levels is considerably wider than in past accession rounds. However, the variance of income levels across individual CEE countries is large: According to the World Bank estimates, per capita GNP levels at current exchange rates vary between 5 per cent and 40 per cent, and at purchasing power parities between 20 per cent and 60 per

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<sup>1</sup> Tito Boeri/Herbert Brücker et al.: The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States, DIW, CEPR, FIEF, IGIER, IHS, Berlin and Milano 2001, <http://www.diw/studien/english>.

<sup>2</sup> This paper draws on an article by the author and Tito Boeri which is published in *World Economics*, vol. 2 (1), 2001, pp. 49-68.

cent, of respective figures in the present EU (Table 1). Moreover, in the regions of CEE countries immediately bordering to the EU, wage levels vary between 20 and 60 per cent of those prevailing on the other side of the border (Figure 1).

Table 1 Selected Indicators on Income Levels and Factor Prices in the CEE-10 and the EU-15 1998

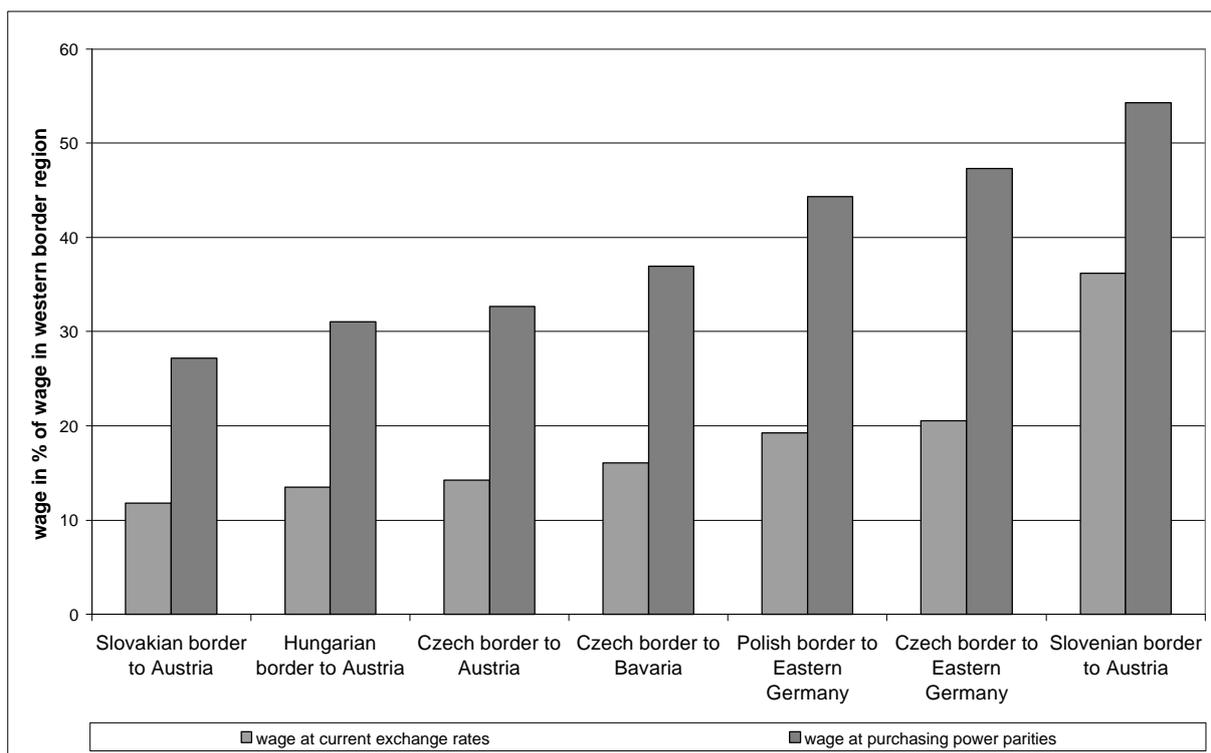
	GNP per capita <sup>1)</sup>		PPP-GNP per capita <sup>2)</sup>		gross wages and salaries <sup>4)</sup>		ICOR <sup>5)</sup>
	in USD	in % of EU-15	in USD	in % of EU-15	in EURO	in % of EU-15	
Bulgaria	1,200	6	4,304 <sup>3)</sup>	21	0.63	6	5.50
Czech Republic	5,047	23	9,545 <sup>3)</sup>	47	1.94	18	-
Estonia	3,300	15	5,736 <sup>3)</sup>	28	1.57	14	7.68
Hungary	4,400	20	8,085 <sup>3)</sup>	40	1.69	15	4.11
Latvia	2,288	11	5,346 <sup>3)</sup>	26	1.09	10	-
Lithuania	2,581	12	4,803	24	1.44	13	5.06
Poland	3,500	16	6,740	33	1.90	17	5.07
Romania	1,546	7	3,970	20	0.97	9	-
Slovak Republic	3,624	17	8,566 <sup>3)</sup>	42	1.52	14	7.96
Slovenia	9,037	42	12,833 <sup>3)</sup>	64	5.09	46	6.12
<b>CEE-10 countries</b>	<b>3,186</b>	<b>15</b>	<b>6,435</b>	<b>32</b>	<b>1.61</b>	<b>15</b>	<b>-</b>
Austria	..		22,740	113	11.24	102	8.73
Belgium	..		23,480	116	12.74	115	8.18
Denmark	..		23,830	118	17.32	157	7.99
Finland	..		20,270	100	11.87	107	4.15
France	..		22,320	111	11.11	101	5.66
Germany	..		20,810	103	16.71	151	10.00
Greece	..		13,010	64	5.62	51	2.20
Ireland	..		18,340	91	10.76	97	2.08
Italy	..		20,200	100	8.26	75	12.08
Luxembourg	..		37,420	185	14.72	133	8.18
Netherlands	..		21,620	107	12.12	110	6.16
Portugal	..		14,380	71	4.28	39	7.86
Spain	..		16,060	80	7.91	72	6.96
Sweden	..		19,480	97	16.00	145	5.51
United Kingdom	..		20,640	102	11.80	107	8.31
<b>EU-15</b>	<b>21,617</b>	<b>100</b>	<b>20,176</b>	<b>100</b>	<b>11.05</b>	<b>100</b>	<b>-</b>

1) GDP per capita at current exchange rates. - 2) PPP-GNP by the World Bank in 1998; some figures are extrapolated with the real growth rate per capita. - 3) Extrapolated from 1997 estimate by real GDP growth per capita. - 4) Gross wages and salaries excl. indirect labour costs. Note that the comparison is affected by national differences in methodology. CEE-10 countries: Gross monthly wages and salaries divided by working hours per month. EU-15: Extrapolation of 1995 figures by nominal wage index. - 5) Incremental Capital Output Ratio (ICOR): Low values of the ICOR are an indication for a high marginal productivity of the capital stock and vice versa. Note that the ICOR can only be calculated for positive growth rates of the GDP.

Sources: World Development Indicators, CD-Rom, Washington, D.C. 2000, IMF: International Financial Statistics, various editions, Washington, D.C. 2000; EUROSTAT, national statistical offices, authors' calculations.

Such marked income gaps correspond to a distinct difference in endowments with physical and human capital. The book-values of physical capital stocks in the CEE countries are reported at around one-tenth of the EU average. Rather low values of the Incremental Capital Output Ratio (ICOR) in the CEE countries indicate that the marginal productivity of real investments in the CEE countries is high relative to that of the present EU countries (Table 1).

Figure 1 Wages in selected Eastern border regions in % of Western border regions, 1998



Sources: National statistical offices, authors' calculations.

Human capital endowments, measured by formal indicators such as school enrolment rates and average years of schooling, are significantly below those of most EU Members, too. Moreover, the quality of education does not quite reach EU standards (Boeri, 2000).

Although the CEE countries are 'small' in terms of output and capital stocks, their labour force is not. It accounts for almost one-third of the labour force in the present EU and is relatively cheap: average wage levels reach only 15% (at current exchange rates) or one-fourth (at purchasing power parities) of EU levels.

The reported differences in factor endowments cannot, by themselves, account for the huge income gap between the Western and Eastern Europe. Total factor productivity is substantially lower in the CEE countries than in the EU. This can be traced back to various factors, in particular to differences in technologies and institutions. A more efficient use of the resources already available in the CEE countries therefore has the potential to reduce the income gap significantly.

Enlargement policies of the present EU are based on the crucial assumption that per capita GDPs in the CEE countries will converge to those prevailing in the present Member States. Growth theory does not provide unequivocal answers to the question whether per capita

income levels in ‘poor’ economies tend to converge to those of rich ones. Historical experience among European market economies suggests that convergence may indeed occur, but only over a long time span. Per capita income levels within the current EU Members as well as those of the other European market economies have converged slowly throughout the post-war period.<sup>3</sup> If we apply the same rate of convergence among the present EU Members and the other European market economies to the CEE countries, the half-life of the income gap of the CEE countries vis-à-vis the EU is longer than 30 years. It should be noted that growth rates recently observed in the CEE countries following the trough of the so-called “transitional recession” are generally in line with those of the post-war experience.

Nevertheless, we should not expect that the speed of convergence will be uniform in all transition countries. Differences in institutions, economic policies and initial endowments with human capital will affect the speed of convergence. Reallocating public expenditures away from the salaries of public servants and towards public investment, and allocating social spending in such a way that more weight is placed on policies that ease the reallocation of workers are approaches that could increase the speed of convergence by up to 10 per cent. Improvements in institutional quality and an increase in primary and secondary education enrolment rates are also likely to foster growth in the CEE countries (Boeri/Brücker et al., 2001, Part B).

Moreover, eastern enlargement is likely to speed up the convergence of per capita incomes by itself. Estimates based on computable general equilibrium models predict that eastern enlargement will raise per capita GNP levels in the candidate countries by 1.5 per cent under conservative assumptions, and by around 19 per cent if we take into account the impact of EU membership on risk premiums and capital accumulation (Baldwin, Francois and Portes, 1997). Nevertheless, any realistic policy scenario has to acknowledge that large differences in factor endowments and incomes between the current EU Members and the accession candidates will persist for decades rather than simply for years.

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<sup>3</sup> We applied different measures of convergence to a sample of the present EU countries and a broader sample of European market economies, e.g. the development of the variance of per capita GDP levels over time, unit-root tests, and Barro-type regressions of growth rates against initial income levels. All tests suggest that GDP levels have in fact converged over time in both country samples, but we observed a high variance in the speed of convergence across countries, too (cf. Boeri/Brücker et al., 2001, pp. 146-152.)

### ***3. Will the removal of trade barriers foster imports of cheap labour?***

Most trade restrictions between the EU and the ten candidate countries of Central and Eastern Europe (the CEE-10) have already been dismantled. Thus a rather strong degree of trade integration has already been attained: exports from EU countries to the CEE-10 have grown by a factor of 6.5 from 1988 to 1998, and imports from the CEE-10 to the EU by a factor of 4.5 at the same time. Enlargement involves the integration of the CEE-10 into the Common Agricultural Policy (CAP) of the EU, the harmonisation of product quality standards and liability rules, and the removal of the remaining trade barriers which are confined to the service sector and agriculture.

Standard trade theory predicts that free trade between economies with large differences in factor endowments has the potential to generate large benefits in terms of income and consumer surplus at the aggregate level, but that the gains and losses are unevenly distributed among the various factors of production. In particular, stronger trade integration of the CEE-10 into the EU markets for goods and services could affect wages and employment by increasing imports of labour-intensive goods and exports of (physical and human) capital-intensive goods, which would in turn increase the relative price of physical and human capital, and decrease the wages of unskilled workers.

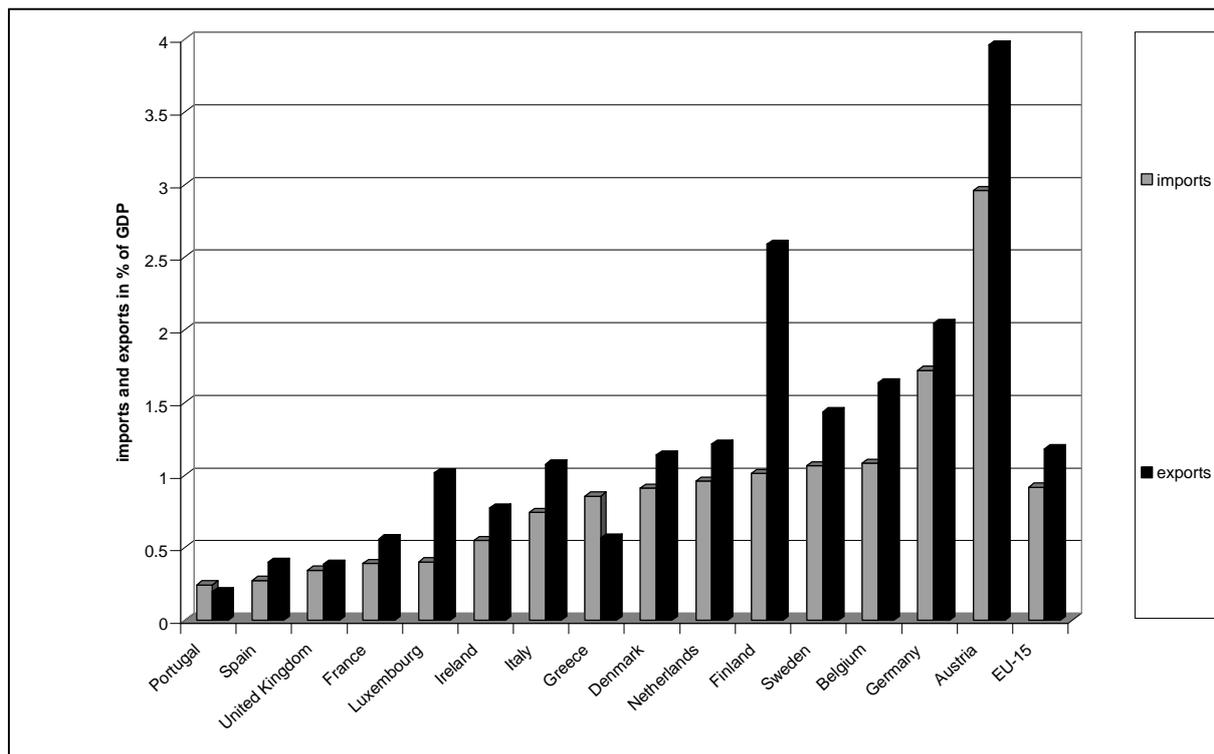
The composition of trade flows between the EU and the CEE-10 is broadly in line with the predictions of these models. EU exports to the CEE-10 are concentrated in goods with a relatively high content of physical capital and requiring highly-skilled labour, while imports from the candidate countries are based on (unskilled) labour-intensive techniques. The import penetration of the CEE-10 in the EU markets is stronger in sectors like clothing and footwear, while the EU experiences a large trade-surplus vis-à-vis the CEE-10 in physical and human capital-intensive industries such as communication equipment, computers and motor vehicles. Nevertheless, inter-sectoral differences in trade flows are less marked than could be expected due to the large differences in factor endowments, and they tend to decline significantly over time. However, persistently large differences in unit-values between the EU and the CEE-10 indicate that intra-industry trade is mainly of the vertical type (that is, involving goods of a different quality produced within the same industry). Thus, we observe a substitution of inter-industrial differences in the factor content of traded goods by intra-industrial differences.

Altogether, actual trade patterns between the EU and the CEE-10 would seem to imply a convergence in factor prices. However, there are at least two good reasons to believe that further trade integration will not, by itself, significantly affect relative wages and employment even in the EU countries most involved in trade with the CEE-10:

1. Actual and projected trade volumes are just too small to affect prices in open economies. In order to affect relative wages in open economies, the CEE-10 must become the suppliers for any additional demand of labour-intensive goods. This is not likely to happen in view of the (economic) scale of the CEE-10 and the EU. Both EU-exports to the CEE-10 and EU-imports from the accession candidate account for, at most, 1 per cent of the GDP of the European Union. In no country of the EU do exports and imports to and from these countries exceed 4 per cent of GDP. Empirical analyses of the impact of trade on wages, employment and labour mobility based on micro data in some of the EU countries most closely integrated with the CEE-10 (i.e. Austria, Germany and Sweden) are consistent with this view. Wage and employment effects of further trade integration are bound to be negligible.
2. The large gap in unit-values indicates that the CEE-10 are not specialised in the same quality segments of markets as are producers in the EU. Under these circumstances, trade theory suggests that all factors of production should benefit from trade, leaving relative wages of skilled and unskilled workers unaffected.

All this does not rule out the possibility of wage and employment losses involving unskilled workers in well-defined sectors and regions. Although the magnitudes are small, trade flows are likely to be concentrated in specific EU areas because of transport costs. In addition, due to the low mobility of workers in the EU, these regionally concentrated trade flows may locally harm the position of unskilled workers. Three quarters of trade between the EU and the CEE-10 is indeed concentrated in the EU countries immediately bordering the accession candidate, that is, Austria, Germany, Greece, Italy and Finland (Figure 2). Moreover, within these countries, trade turnover is concentrated in the border regions. If an impact of trade on wages and employment will be felt at all in the EU, this will occur precisely in these regions.

Figure 2 EU-15: Exports to and Imports from the CEE-10 in % of GDP 1998



Sources: OECD, Direction of Trade Statistics, authors' calculations.

While many concerns related to the effects of trade on wages of unskilled workers appear to be ill-founded, many optimistic views as to the job generation potential of accession are likewise lacking an empirical support. It is often argued that the large surplus in EU-trade with the CEE-10 is a job-generating machine. No doubt, the combined trade-surplus is sizeable (of the order of \$ 25 billion in 1998) and has steadily increased since the fall of the Berlin wall. The other side of the coin of these trade surpluses is a deficit in the capital balance, as income is transferred from the EU to the CEE-10 in order to finance their trade deficits. Increasing capital transfers to the CEE-10 associated with enlargement are likely to result in even larger trade surpluses. We estimate that the compounded deficit in the trade balance of the CEE-10 may double in the course of accession.

It is difficult to establish whether trade in manufacturing goods between the EU and the CEE-10 will significantly increase in the course of accession. Estimates based on gravity models, which explain trade flows in terms of geographical distance, population size and GDP levels at current exchange rates, suggest that actual trade flows between the EU and the CEE-10 have already reached their potential, as they exceed 'normal' volumes registered between market economies with similar characteristics (Brenton/Mauro, 1998). However, trade

between the EU and the CEE-10 is still growing at double-digit rates, and there is considerable uncertainty as to the measurement of value added in transitional economies, as predictions of gravity models are very sensitive to revisions of GDP series. Schumacher (1999) shows that if one uses GDP at purchasing power parities rather than at current exchange rates in gravity models, actual EU exports to the CEE-10 in 1998 were only at about 50 per cent of 'normal' export volumes among market economies, and imports were at 40 per cent of their potential.

An unambiguous prediction of our study is that trade in services will increase as a result of the dismantling of the remaining barriers to trade in this field. This may have a significant effect on the supply of non-tradable goods in countries and regions bordering the CEE-10, notably in the construction and transport sectors. However, it is worth noting that present levels of service trade are low, and hence they will only rise to proportions which are unlikely to affect wages and employment at the aggregate level.

Overall, the impact of trade on employment and wages is likely to be confined to the EU countries geographically closest to the CEE-10, and to be, in any event, concentrated in the bordering regions of these countries. Although the benefits from trade integration – in terms of increased consumers' surplus – will be significant, there will be some losers in these bordering regions, notably among the unskilled workers operating in the sectors which have so far been sheltered from the competition of low-cost labour from the CEE-10, e.g., construction, transport and textiles.

#### **4. *Will capital market liberalisation affect the export of jobs to the East?***

The barriers to foreign direct investment and other capital movements have been largely removed. However, certain shortcomings in the regulation and supervision of capital markets and the banking systems are still present. From the perspective of the present EU Members, capital flows to CEE countries are, in any event, "too small to matter": yearly capital flows currently account for barely 0.2 per cent of the EU GDP and 0.8 per cent of gross fixed investment in the EU. Even a significant increase in capital flows from such low levels can hardly have any impact on interest rates and factor incomes in the EU. FDIs originating in the EU are, however, large for the CEE-10 (in 1998 they accounted for 7 per cent of their GDP and more than 25 per cent of their gross fixed investment), and hence an increase in FDIs may

significantly contribute to capital formation, growth, and increasing wages in the candidates to accession.

Foreign capital flows to the CEE-10 mainly take the form of foreign direct investments. Portfolio capital inflows are well below those observed in other countries at comparable income levels. This suggests that equity and security markets of the CEE-10 are still at their infant stage. We expect the portfolio capital flows to pick up significantly as the harmonisation of the regulation of financial markets gains momentum. We also estimate FDIs to the CEE-10 to double in the wake of accession. Experience from past enlargement episodes suggests that accession to the EU can considerably increase capital inflows: this happened especially in Spain and Portugal in the aftermath of the southern enlargement of the EU. Furthermore, our projections for the trade potentials imply that capital flows to the CEE-10 fall short of their potential as trade and current account deficits are usually matched by capital inflows. Such an increase in capital movements from the EU to the CEE-10 may contribute significantly to growth in the CEE-10, hence to income convergence.

There are widespread concerns in the EU that labour-intensive production will relocate from the EU to the CEE-10 as a result of enlargement. However, a detailed analysis of the structure of FDIs does not provide support to these views. Nearly half of the FDIs originating from the EU are directed at non-tradable sectors in the CEE-10 (mainly public utilities and communication, as well as financial services). The branch structure of investment, as well as enterprise surveys, indicate that market access is the primary reason for the investment. Only about one-fifth of foreign investment is allocated to industries where low labour costs play a significant role and where the share of unskilled labour is relatively high<sup>4</sup>.

Overall, only a minor fraction of FDI is driven by low-wage costs in the CEE-10 and hence may displace production and employment in the EU. FDIs are mainly induced by market access considerations: this means that they are either neutral for employment and wages in the EU or are complementary to trade, thereby exerting a positive effect on employment and wages in the enterprises and branches involved. The small fraction of FDIs induced by low labour costs is associated with a specialisation of production in human capital-intensive processes in the EU and labour intensive activities in the accession candidates. This structure of FDIs may actually hurt wages and employment of unskilled workers in specific enterprises

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<sup>4</sup> In particular, in clothing and footwear, electrical machinery, rubber and plastic products, parent companies would seem to focus on significantly more capital-intensive activities than their foreign affiliates.

and branches, such as clothing, footwear, electrical machinery, rubber and plastic products. However, in these branches large trade surpluses vis-à-vis the CEE-10 can be observed, which suggests that the undesirable effects of FDIs on wages and employment of unskilled workers may be offset by increasing exports to the CEE-10.

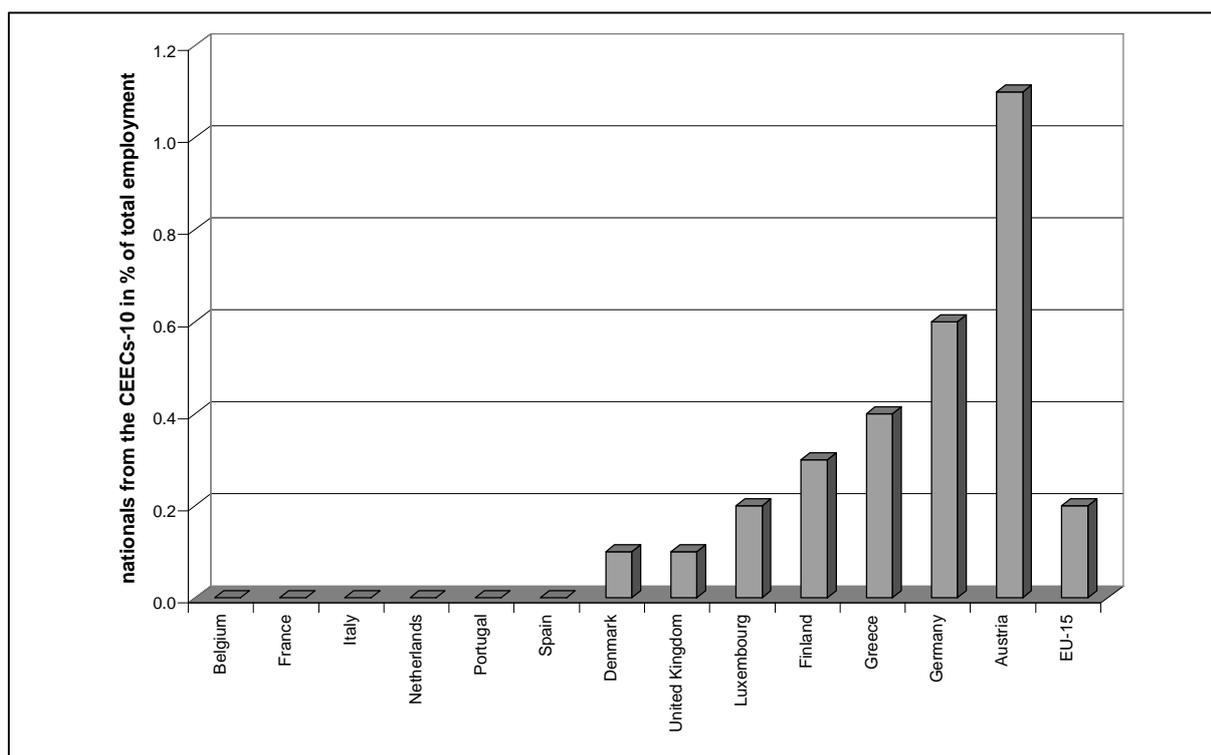
### ***5. Will EU labour markets be swamped by migrants from the East?***

Ten years after the start of economic transition in Eastern Europe, immigration from the CEE-10 is still heavily restricted by the EU Members. The authority of individual EU Members to regulate the immigration of labour and persons from the CEE-10 is also not impaired by the Europe Agreements (EAs). The removal of the barriers to free labour mobility is therefore the single dimension of economic integration that is likely to be affected most by the eastern enlargement of the EU.

The evidence presented above does not suggest that trade and capital movements can lead to an equalisation of factor prices. Insofar as large wage and income gaps between the CEE-10 and the EU are likely to persist for decades, strong economic incentives to migration are bound to be present well beyond the date of accession. This holds true particularly for the richest regions of the EU which border the CEE-10, such as the Bavarian border with the Czech Republic and the Austrian borders with Slovakia, Hungary and the Czech Republic. However, international migration is hindered by high transaction costs and by the limited absorption capacity of labour markets in the countries of destination.

Present stocks of employees and residents from the CEE-10 in the EU clearly reflect the restrictions to labour mobility and are, in view of the large gap in per capita incomes, rather negligible. The stock of foreign residents who have immigrated from the CEE-10 to the EU is estimated at some 870,000 individuals in 1999, while the stock of foreign employees amounts to about 300,000 workers at the same time. The latter figure includes the full-time equivalent of temporary and seasonal workers. Such figures account for barely 0.2 per cent of the EU population and 0.3 per cent of the EU workforce, respectively. Around 80 per cent of the migrants from the CEE-10 reside in Austria and Germany (Figure 3). However, the official statistics do not cover illegal migration or workers who are employed by foreign companies supplying services in the present EU countries.

Figure 3 Nationals from the CEE-10 in employment of the EU-15 Members



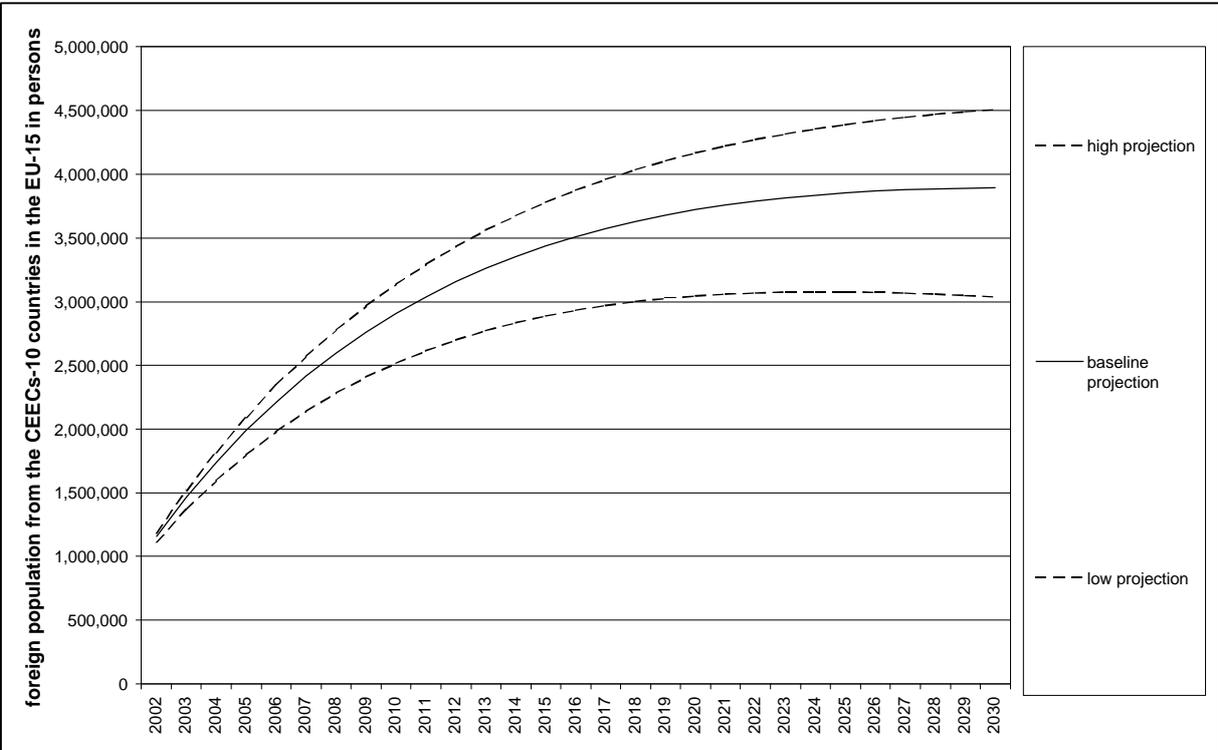
Sources: Eurostat Labour Force Survey, authors' calculations.

Our estimates of the migration potential associated with the eastern enlargement draw from a time series model of immigration to Germany in the period 1967-98 which explicitly takes into account the formation of expectations. This model allows us to estimate the long-term equilibrium level of individuals and workers from the CEE-10 residing in the EU, as well as the speed at which the adjustment to the potential takes place.<sup>5</sup> The most important factors affecting the estimates of the migration potential are the differences in *per capita* incomes, and the employment rates both in the destination countries and in the countries of origin. Institutional restrictions to migration, variables capturing the presence in the host country of ethnic minorities originating from the CEE-10 and the possibility to use a common language as well as indicators for the standard of living, were also found to affect migration significantly. Interestingly enough, our estimates suggest that the propensity to migrate decreases with the number of those who have already emigrated from each accession candidate. Thus, network effects, e.g., associated with the presence in the EU of a core group of migrants originating from the same country, would seem to influence the distribution of migrants between the different EU countries, but not to encourage a persisting expansion of migration flows. However, the propensity to migrate differs largely between countries.

<sup>5</sup> For a description of the model and its underlying assumptions see Boeri/Brücker et al., 2001; Brücker (2001).

The above econometric results can be used to simulate potential migration from the CEE-10 into the EU under various scenarios of income convergence and unemployment. The simulations should only be seen as broad indications as to the likely magnitudes of future migration flows originating from the CEE-10 and are conditional on the assumptions being made as to the pace of income convergence to the EU levels and on labour market developments in the East and the West. Heterogeneity in the migration behaviour across countries, which is present in our data, makes out-of-sample difficult. As a consequence, a good deal of uncertainty still surrounds the results presented here – which holds for other predictions based on econometric studies as well.

Figure 4 Simulation: Foreign population in the EU-15 after introduction of free movement



Sources: Authors' estimates and simulations. Note that in the high (low) projection, a convergence rate of 3% (1%), an unemployment rate of 10% (5%) in the country of destination, and an unemployment rate of 15% (5%) in the country of origin is assumed.

Our baseline simulations assume that per capita incomes between the EU and the CEE-10 will converge at a rate of 2% per annum – which is consistent with the speed of income convergence in post-war Europe – and that the unemployment rates in the EU and the CEE-10 will remain constant. They suggest that the foreign population originating from the CEE-10 and residing in the EU may rise from about 0.85 to 3.9 million under the enlargement

scenario. This corresponds to roughly 4% of the CEE-10 population and one per cent of the population of the EU-15. The peak in the size of the population of migrants is expected to be reached 30 years after the liberalisation of labour movements. Net migration inflows in the EU are bound to increase immediately reaching a maximum of about 335,000 individuals per annum, and subsequently decline to a more modest 100,000 to 150,000 people per annum. Different assumptions as to the speed of convergence as well as the unemployment rates prevailing in the countries of destination and origin yield long-run stocks of foreign residents from the CEE-10 in the EU-15 ranging from 2.9 to 4.5 million (Figure 4).

Thus, according to our simulations, migration flows stimulated by the accession will neither be negligible – as was the case at the time of the accession of the Southern EU Members – nor as large as often feared in the EU. The stock of foreign residents from the Southern EU Members had already reached its equilibrium level when free movement was introduced, according to our estimates. This will hardly be the case when the CEE-10 enters the EU. Moreover, many speculations depicting Western Europe as being swamped by masses of migrants originating from the CEE-10 ignore the fact that migration is hindered by high transaction costs and do not factor in the limited absorption capacity of labour markets in the destination countries. Even in Germany during the 1960s, under full employment and publicly-sponsored efforts to attract guest workers from abroad, average net immigration from *all* countries did not exceed 240,000 persons per year. Notice that migration flows are expected to vary widely in the wake of the business cycle: according to our simulations, net migration flows from the CEE countries into Germany would have varied between 50 000 and 600 000 persons per annum if free movement have been introduced in 1990. Thus, an economic shock such as the Peso-crisis in Mexico in the 1990s, can involve a substantial increase in annual migration rates.

Migration flows will not be evenly distributed across the EU. Germany and Austria currently attract about 80% of the migrants originating from the CEE-10. If this geographical concentration of migration flows does not change, Germany and Austria should be expected to receive 220,000 and 40,000 people per year, respectively, after free labour mobility is introduced. As in the case of trade flows, migration flows are also concentrated in the Austrian and German regions bordering the CEE-10, with the notable exception of the former GDR. At the borders of Eastern Germany with Poland and the Czech Republic, migration shares are at one-third of the German average, a factor which can be attributed to the lower income levels and higher unemployment rates registered in the eastern *Länder*.

Contrary to conventional wisdom, economic theory predicts that migration enhances aggregate welfare of natives in the host countries, while natives in the home countries lose out. This can be traced back to fact that wages of intra-marginal migrants are below their contributions to GDP. However, the gains and losses are not distributed equally across the factors of production: while factors complementary to migrant labour are supposed to gain from migration, factors which can be substituted by immigrant labour may lose out. In particular, it is feared that unskilled labour may be affected by migration in terms of wages and employment in host countries. The findings of this report, as well as the findings of a number of other studies, suggest that undesirable effects of migration are concentrated on blue-collar workers in manufacturing industries and on unskilled labour in services. Nevertheless, the impact of migration on the labour market performance of natives is much smaller than widely believed. The reason is that migrants move into prosperous branches and regions and that furthermore output and investment adjust according to the increase in the labour supply. Our estimates found that a one percentage point increase in the migrant share in a given branch decreases average wages there by 0.25 per cent in the Austrian regressions and 0.6 per cent in the German ones (Boeri/Brücker et al., 2001). At the same time, the individual risk of dismissal increases by 0.8 percentage points in the Austrian and by 0.2 percentage points in the German sample. The impact of migration on white collar workers is slightly positive or neutral. Thus, since the increase in the share of foreigners from the CEE countries is expected to last for rather long time periods, the impact of migration on wages and employment is likely to be rather moderate even in the two most affected countries, Austria and Germany.

Moreover, the impact of migration might be more dispersed across skill groups in the case of immigration from CEE than it is in the case of traditional immigration. Formal education levels of migrants from CEE are surprisingly high. Nevertheless, the branch structure of employment shows that nationals from CEE are employed in the same branches as other foreigners and probably at the same qualification levels. Furthermore, additional information on the labour market performance of ethnic Germans who have immigrated from CEE suggests that the returns on human capital attained are extremely low even when migrants possess good language skills. Although immigrants from CEE currently compete with blue-collar workers and unskilled workers for jobs in the manufacturing and construction sectors, they may over time become more able to adapt to the skill profile of EU labour market demands, and hence increasingly compete with highly-skilled workers.

## **6. Conclusions**

Trade and FDI flows associated with the eastern enlargement of the EU are unlikely to significantly affect wages and employment in the current Members of the EU. Some wage and job displacement effects of the accession may only be felt at a sub-national scale, involving unskilled workers, employed in specific industries (mainly in services, construction and transport) and resident in the relatively rich regions of the EU borders with the CEE-10 (Austria and Bavaria). In these respects, trade and FDIs, CEECs are just “too small to matter” for the current EU Members.

Migration associated with the liberalisation of labour movements from the CEE-10 will certainly be more sizeable, as income gaps between the EU and the candidate countries are large and bound to persist for decades. However, history tells us that it takes a long time before migration stocks adjust to income differentials. Even under prudent assumptions about the pace of income convergence, we expect an annual increase in the number of foreign residents from the CEE-10 of around 220,000 persons for Germany and of 40,000 persons for Austria after lifting the barriers to labour migration. Such flows will decline over time: net flows will be halved within a decade. The long-term migration stock is expected to be at around 2.5 million residents in Germany and at around 470,000 residents in Austria, respectively. The above estimates assume a complete lack of migration restrictions, that is, the free movement of labour from the CEE-10. About one-third of the foreign residents from the CEE-10 are expected to be employees.

Although we are dealing with relatively small numbers, they may not look that small to populations of neighbouring regions who fear a concentration of migrants where they live, and consequent risks of wage losses and job displacement for the unskilled. Almost 80% of the migrants from the CEE countries in the EU reside in Austria and Germany, and – with the notable exception of Eastern Germany – they are concentrated in the eastern regions. Educational attainments of eastern migrants are often relatively high, but newcomers typically compete with residents for less-skilled jobs. While in tradable sectors output adjusts to an increasing supply of labour, competition of migrants from the East may bite into non-tradable sectors such as construction, hotels, restaurants or household services. Thus, Austria and Germany will be the main winners from the free movement of labour, but nevertheless, we

cannot totally dismiss all concerns about undesirable effects on local labour markets in these two countries.

Sound enlargement policies should not neglect these concerns or the uncertainty inevitably associated with any estimate of the migration potential. It may therefore be advisable to keep actual migration flows under control for a transitional period. The proposal of the European Commission and the German government to postpone the free movement for at least five years is however not appropriate to reduce uncertainty on potential migration and support the adjustment of labour markets. Simply postponing the free movement will not reduce the migration potential by large numbers under realistic assumptions on the convergence of per capita incomes. Moreover, the uncertainty about the actual migration potential is not reduced. In contrast to simply postponing the free movement, quotas or safeguard clauses have two advantages: firstly, the usage of quotas provides information on the actual migration potential and reduces therefore uncertainty on potential migration substantially.<sup>6</sup> If quotas are not filled up, they can be lifted without risk of a mass immigration wave. Secondly, they reduce the migration potential step by step and allow therefore a smooth adjustment of labour markets.

The rationale for having some *temporary* restrictions to migration is to prevent the social tensions which could result in pressures for heavier, long-lasting migration restrictions. Immediate adoption of quotas or safeguard clauses would underpin the credibility of the EU's commitment to enlargement, as would a reform of labour market and social policy institutions in the EU in such a way as to promote, rather than oppose, internal labour mobility in the EU. This would also prevent a concentration of the undesirable effects of migration on specific regions, which, after all, is the only way that enlargement could possibly produce losers in the EU.

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<sup>6</sup> However, the information provided by quotas or safeguard clauses on the migration potential depends crucially on their design. Applications for immigration under a quota regime can be biased in both directions, i.e. upward or downward. Nevertheless, quotas and safeguard clauses provide more information on potential migration than the present restrictions to migration from the East.

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# PENSIONS REFORM BETWEEN ECONOMIC AND POLITICAL PROBLEMS<sup>7</sup>

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## Introduction

Life expectancy and fertility rates are the key factors of ageing populations in the world. The likely evolutions of these factors suggest an inescapable rise in the share of elderly people in the overall population; this sharp increase in dependency ratios will have important impacts on public finances, potential output, etc., and overall, on the financial equilibrium of retirement pension schemes.

These forecasted difficulties have induced a lot of political reactions. Policymakers have realised for some time that deficits of the pay-as-you-go<sup>8</sup> (PAYG) pensions schemes would quickly reach unsustainable levels, if no changes were introduced, whether in benefits or in contributions, so that reforms are often planned [OECD, 2000].

These reforms are of two types: parametric reforms within the PAYG system or reforms that are based on a partial or full shift towards funded schemes.

- Parametric reforms of PAYG include rather marginal adjustments; with an increase of the number of potential beneficiaries the solutions appear to be rather simple: to pay more, or to pay longer or to receive less. Increased contribution or decreased benefits, raise of the pensionable age with strong incentives to postpone retirement decisions have been the main figures of these adjustments. There were, also, more structural changes such as transformation to notional, defined-contribution accounts (Sweden, Italy, Poland, etc.) organised in order to strengthen the link between contributions and benefits;
- Moving towards funded schemes include a mix of public and private components but also funded reserve elements within PAYG systems (France, Ireland, Spain, etc.), two reforms schemes that would induce transition costs in terms of over-contributions for current or future taxpayers.

Inevitable resistance emerged as soon as pension reforms were considered. First, segments of public opinion remain doubtful about the gravity of the pension problem itself, whether they do not believe in the demographic problem, whether they think the economic growth will solve the problem; in addition, for those that are aware of the problem, there are some conflicts over who bears the burden of the reforms, current taxpayers, current pensioners, futures generations etc.

In most countries, policymakers are in the middle of the debate, standing between public opinion and expert advice that would lead to “the good reform”. The equation is all the more complicated due to economic environment. It has been shown that pension reform is not economically neutral and that its success depends upon the economic conditions: until now, the elderly workers had difficulties to find their place in the labour

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market, workers have strong aspirations for an early retirement, funding within the PAYG scheme is often based on additional public deficits, private funded schemes are considered as risky etc.

This paper is organised as follows: in the first section, a short summary of well known data presenting the forthcoming situations of pension schemes in OECDs' countries is given; in a second section, more elements about considered pension reforms is provided, more precisely some indications are given about the efficiency of such reforms; in a third part, the political economy of pension reform is considered using the French example of a pension scheme to point out some stumbling blocks.

## *I – Overview of the pension scheme situations*

Some elements of the pension debate are well known. First, ageing is a worldwide phenomenon (Table 1 shows that the problem will lie perhaps more heavily on the developing countries where the lack of capital is to be a sharp problem); in addition this phenomenon is rather irreversible: the view is now widely shared that below replacement fertility is only one factor of ageing, and not the most important one, most of the process being due to the greying of baby-boom cohorts and the general rise in life expectancy (Table 2).

**Table 1**  
**Share of population ages 60 and older**  
(%)

(%)	1995	2005	2015	2025	2035
<b>United States</b>	16,5	17,2	21,5	26,4	28,2
<b>Japan</b>	20,0	25,3	30,7	32,0	34,7
<b>Germany</b>	20,6	24,8	27,8	33,7	36,8
<b>France</b>	19,5	20,5	24,8	28,4	30,7
<b>Italy</b>	22,0	25,1	28,7	33,5	38,5
<b>United kingdom</b>	20,6	21,4	24,5	28,3	30,6
<b>Latin America</b>	7,4	8,4	10,6	13,9	17,6
<b>China</b>	9,6	8,4	14,0	18,2	24,0
<b>South Asia</b>	6,8	10,6	8,6	10,8	13,7

*Source: World Bank*

**Table 2**  
**Female fertility rates and life expectancy at birth**

	<b>Fertility rates</b>		<b>Life expectancy at birth (men and women)</b>		
	1960	2000	1960-65	1995-2000	2045-50
<b>United States</b>	3.7	2.0	70.0	76.7	81.8
<b>Japan</b>	2.1	1.4	69.0	80.0	83.8
<b>Germany</b>	2.3	1.3	70.3	77.2	81.9
<b>France</b>	2.7	1.7	71.0	78.1	82.6
<b>Italy</b>	2.4	1.2	69.9	78.2	82.6
<b>United kingdom</b>	2.5	1.7	70.8	77.2	82.0
<b>Canada</b>	3.9	1.6	71.4	79.0	83.2

*Source: OECD*

<sup>8</sup> In a Pay as you go pension scheme, current wage earners pay for current retirees. In a funded scheme, contributions from the wage earners are saved, capitalised and kept until pensions are paid.

These transformations of population structure will induce a dramatic rise in the dependency ratios in most countries (Table 3), and the old age expenditure is expected to increase at least as fast as it has increased during the past years as shown by pension contribution rates (Table 4), given the old age dependency ratios and if no reforms are undertaken i.e. if there is no change in the dependency ratios nor in the replacement rates (Box 1). This means that, with the same macroeconomic replacement rate, if no reforms are introduced the contribution rates have to be doubled between now and 2050 to match the drift of the dependency ratios.

**Table 3**  
**Structure of populations (%)**

	1960			2000			2050		
	- 15	15-64	65 +	- 15	15-64	65 +	- 15	15-64	65 +
<b>United States</b>	30.8	60.0	9.0	21.5	66.0	12.5	17.1	61.2	21.7
<b>Japan</b>	30.2	64.0	5.7	14.8	68.1	17.1	13.8	54.4	31.8
<b>Germany</b>	21.3	67.2	11.5	15.5	68.1	16.4	13.4	58.3	28.4
<b>France</b>	26.4	62.0	11.6	18.7	65.4	15.9	17.0	58.0	25.5
<b>Italy</b>	24.8	65.9	9.3	14.3	67.6	18.2	12.0	53.1	34.9
<b>United kingdom</b>	23.3	65.1	11.7	18.8	65.2	16.3	16.3	58.8	24.9
<b>Canada</b>	33.5	59.0	7.5	12.8	68.3	18.9	17.0	59.3	23.8

Source: OECD

**Table 4**  
**Pension contribution rates**  
% of average earnings

	1967	1995
<b>United States</b>	7.1	12.4
<b>Japan</b>	5.5	16.5
<b>Germany</b>	14.0	18.6
<b>France</b>	8.5	19.8
<b>Italy</b>	15.8	29.6
<b>United kingdom</b>	6.5	13.9
<b>Canada</b>	5.9	5.4

## ***II – Reforming pension schemes***

A typology of pension reforms can be roughly provided:

- Parametric reforms are reforms within the PAYG pension scheme and retain a strong unfunded component;
- Others types of reforms involve a funded component; Disney [2000] denotes them as privatisation but this term is quite reductive because reforms that planned to fund part of the PAYG schemes also belong to this category.

Table 7 provides some directions of recent pension reforms in selected OECD countries.

***Raising pensionable age***, or linking it to expected longevity is generally a key policy in parametric reforms and is supposed to have an important impact as shown in a quick calculation: assuming a replacement rate of 70% and a full indexation of pensions upon wages, increasing the contribution period by one year from 40 years to 41 years and decreasing the retirement period from 25 to 24 years lowers the pension payments/wage bill ratio from 0.44 to 0.41 and offsets 1.5 years of supplementary life expectancy.

## Box 1 PAYG pension schemes, equilibrium and definitions

Pay-as-you-go schemes pay pensions out of current contributions or taxes. Let:

$t$ , be the current PAYG contribution rate;

$\bar{w}$ , the average wage of the contributing workers;

$N_t$ , the number of contributing workers at time  $t$ ;

$\bar{p}$ , the average old age pension;

$N_{t-1}$ , the number of retirees (those that were active in period  $t-1$ ).

For each period, the equilibrium of the PAYG scheme can be written as follows (for a PAYG scheme without a trust fund or reserve fund) since contributions (revenues) have to equalise pensions (payments):

$$t \cdot \bar{w} \cdot N_t = \bar{p} \cdot N_{t-1} \quad /1/$$

or:

$$t = \frac{\bar{p}}{\bar{w}} \cdot \frac{N_{t-1}}{N_t} \quad /1'/$$

where  $\frac{N_{t-1}}{N_t}$  is the **dependency rate**, ratio retirees to contributors;

and  $\frac{\bar{p}}{\bar{w}}$  is the macroeconomic **replacement rate**, ratio of average pension to the average wage. Note that this replacement rate is a good index of the relative standard of living of retirees. This ratio differs from the usual replacement rate, which is the ratio of the first pension to the last wage and which is given by the scheme's characteristics. As shall be seen, it is not the only good index of a scheme's generosity.

As equation /1'/ states, the only way to get back to the equilibrium when the dependency ratio is rising is:

- Paying more: increasing  $t$  ;
- Decreasing the scheme generosity: decreasing  $\frac{\bar{p}}{\bar{w}}$  ;
- Paying longer by setting the dependency ratio at a lower level: decreasing  $\frac{N_{t-1}}{N_t}$ . This is possible by increasing the pensionable age and has a important effect by rising the numerator while lowering the denominator.

These three types of reforms have been attempted to improve the resistance to demographic shocks of PAYG pension schemes (see below).

The return of PAYG schemes is given as follows:

From equation /1/ and taking into account the demographic change whose rate is  $n$  and the rate of productivity change,  $g$ :

$$\begin{aligned} \frac{N_t}{N_{t-1}} &= 1 + n \\ \frac{\bar{w}_t}{\bar{w}_{t-1}} &= 1 + g \\ /1/ \Leftrightarrow p_t &= (1 + n)(1 + g)t_t \cdot \bar{w}_{t-1} \\ \Leftrightarrow p_t &\approx (1 + n + g) \cdot t_t \cdot \bar{w}_{t-1} \end{aligned}$$

Productivity changes and demographic changes play the same role in the PAYG rate of return.

This yield has to be compared with funded schemes rate of return. This yield is generally given by the interest rate, normally supposed to be equal to the marginal rate of return on physical capital. Usually, in papers that deal with a comparison between funded schemes and unfunded schemes, the former are preferred to the latter if the interest rate exceeds the sum  $n+g$  (see Feldstein, 1973 for a seminal analysis).

The problem is that employment rates in the years prior to reaching state pensionable age are well below 100 % in most OECD countries (Table 5); people being in fact beneficiaries of unemployment or disability benefits or other forms of welfare support which have been developed in recent past years of high unemployment rates in order to replace old workers by youngest ones.

**Table 5**  
**Employment rate of workers aged 55-64 in OECD countries**  
% of the population aged 55-64

	1980	1985	1990*	1995	1998
<b>United States</b>	53.8	51.8	54.0	55.1	57.7
<b>Japan</b>	61.3	60.5	62.9	63.7	63.8
<b>Germany</b>	..	37.1	39.2	37.8	38.8
<b>France</b>	..	37.2	35.6	33.5	33.0
<b>Italy</b>	..	33.3	32.0	27.0	26.9
<b>United kingdom</b>	..	47.0	49.2	47.6	48.3
<b>Canada</b>	51.5	47.2	47.0	43.6	45.4

\*refers to 1991; source: OECD.

Table 6 shows that in most countries (except in Italy) there are rather high incentives to continue working when old if we consider only implicit taxes embedded in old age pension benefits; more precisely there is no empirical evidence of a negative correlation between this implicit tax on continued work and the share of the population aged 55-64 that is still employed. It is necessary to consider the other welfare support programmes in order to understand the low participation rates of the elderly.

**Table 6**  
**Implicit tax rates on continued work embedded in benefits for the elderly; 1995**

	Old age pensions	Old age pensions plus:		
		Unemployment benefits*	Disability benefits*	Special pre-retirement benefits*
<b>United States</b>	12	..	..	..
<b>Japan</b>	28	..	..	..
<b>Germany</b>	14	37	46	..
<b>France</b>	14	49	..	57
<b>Italy</b>	79	..	..	..
<b>United kingdom</b>	5	15	..	..
<b>Canada</b>	6	..	..	..

\*".." denote that the couple (old age pension, xx) is not an option  
Source: Blöndal and Scarpetta [1999]

Most of the parametric reforms do not take into account the fact that what is treated as parameter is behaviour; in this sense, such parametric reform that only lengthens the working period necessary to obtain a pension will have lower benefits than estimated.

**Table 7:  
Directions of recent pension reforms for selected countries in OECD**

	Pensionable age	Promoting longer employment	Changed benefit rate	Required contribution period	Contribution rate	Convergence of schemes	Greater reliance on schemes funded	Promoting private schemes	Others
<b>United States</b>		Increase (M, W)				Legislative requirement for non-discriminatory within a working place	DC scheme is tax-favoured for corporate pension	Tax concessions	Pension trust fund.
<b>Japan</b>	Increase (W and M) Partial pension introduced		1994: net income indexation		1994: contribution on bonuses	Private pension is promoted, including discussion for introduction of DC schemes, etc.			
<b>Germany</b>	Increase (W)		1992: Net income indexation 1997: decrease of the target replacement rate				<ul style="list-style-type: none"> <li>Corporate schemes are promoted with legislation dating back to 1974 and recent reforms;</li> <li>Wanted to further expand private schemes</li> </ul>		Attempted to share the burden of ageing equally between pensioners and contributors
<b>France</b>			1993: base period for benefit calculation: 10>25 years	1993: 37.5 > 40 years					
<b>Italy</b>	Increase (W and M with 5 years difference) 1995: flexible (57-65) with no pre-retirement	Yes	Reduction of benefits	Increase for seniority pension and old age pension	Increase	1995: greater equity for workers in different industries	1995: complementary funded scheme, DC scheme.	Yes	Survivors pension now means tested.
<b>United Kingdom</b>	Yes (W)	1986: flexible retirement age to 70	1986: Reduction of value of pension (SERPS)				Contracting out permitted	Tax concessions; Intro. of personal pensions; 1995: regulation of private schemes	
<b>Canada</b>		1987: flexible retirement age to 70	1997: Reduction of some benefits related to disability		1997: to 9.9% in 2003 and held steady	1996: New basic pension with means test, by 2001	1997: increase of the funded portion	Tax concessions	1997: more aggressive investment policy with pension reserves

Source: OECD

Another strategy to postpone retirement age and/or to avoid adverse behaviour is the explicit linkage of benefits and contributions. In such a strategy, the board of pension schemes calculates a sustainable implicit rate of return on the contributions of each cohort and then sets the accrual rate of the pension. This kind of reform lies behind the “actuarially fair” basis. These reforms have to include substantial computational modifications of pensions, taking into account the full lifetime basis for calculating pension entitlements rather than a final salary. The logical extreme of this strategy is the creation of “notional accounts” in which each individual pension is supposed to be explicitly based on a history of contributions. Once at retirement age, the pensioner transforms his accumulation of points towards pension liabilities according to a transformation rate linked to changes in demography; post-retirement indexation arrangements are also linked to these changes.

Recent Latvian and Swedish reforms have introduced notional accounts; the French system introduced such mechanisms for its complementary schemes, which have been compulsory since 1972.

Two difficulties have to be pointed out:

- First, actuarial fairness means that the actual balance of any modification in the retirement age, chosen by the wage-earner, does not impact on the pension scheme equilibrium. As a result, as soon as the implicit yield is positive, the liabilities continue to grow;
- Second, if the wage-earners have larger freedom to anticipate their retirement, they effectively quit earlier as soon as their preference for leisure is higher than the implicit yield of the retirement pension scheme (Artus, 2000a, Blanchet and Mahieu, 2001). This will not damage the financial equilibrium of the pension scheme but will induce great difficulties in increasing the pensionable age.

This means that the political will to adjust the working (and accumulation) period has to be accompanied by a visible counterpart that will encourage people to contribute more to such programmes.

One of the main difficulties of these schemes (national accounts or others) is that their returns can automatically be compared by participants with the returns to be obtained in marketed private saving accounts. This reform is one of the alternative to replace all or part of an unfunded pension programme.

***Funding the pension schemes*** is another means of reform (that is implicitly encouraged by the decrease of pension schemes generosity). Two forms have been explored. The first one is to shift from PAYG to private saving accounts; the second one is to create a reserve fund (or a trust fund) within the PAYG pension scheme.

Since Aaron and Shoven [1999] showed that the shift from PAYG to a funded scheme is neutral<sup>9</sup>, the only good argument lies in the superiority of yields of the saving accounts to increase the households’ welfare. But does this argument of higher yields really hold?

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<sup>9</sup> Such a shift will have no impact on disposable income and wealth of individuals who move from the old system to the new. The government will run an increased deficit, but this will be exactly offset by the increase of private savings from the surplus of the new pension plans. The national saving rate will not increase. The reform only converts an implicit government obligation to future retirees into explicit debt. Pestieau and Possen (1997) show that this conclusion holds under 3 assumptions:

- i. the transition generation is compensated by public borrowing,
- ii. the benefit rule is unchanged,
- iii. individuals’ portfolio choices are not constrained.

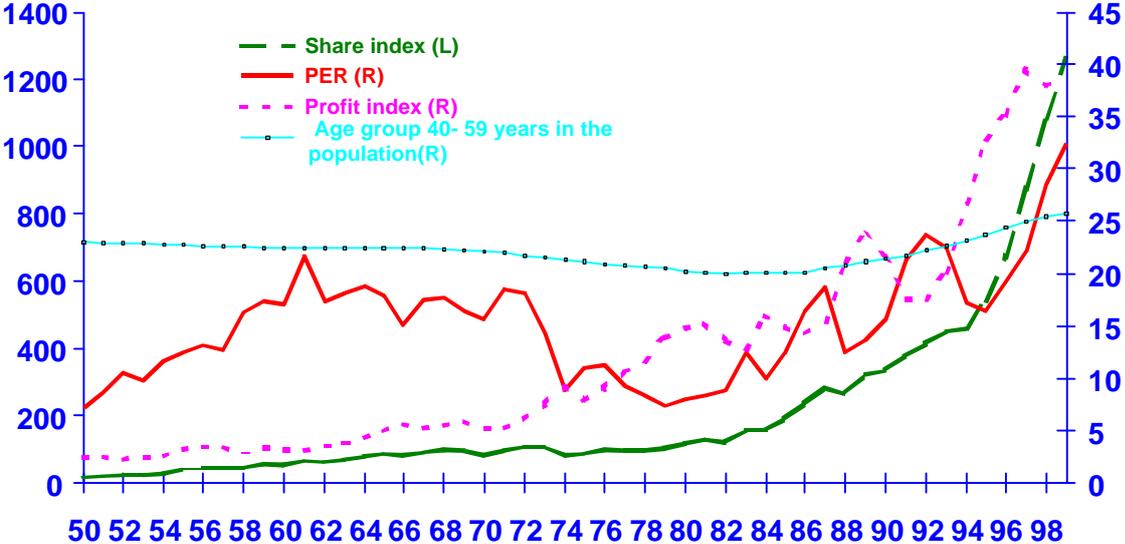
One of the main arguments is that funded schemes are intrinsically better insulated from demographic risks than PAYG schemes. Artus [1999], on the contrary, argues that the demographic cycle that will begin in 2005-2010 will paradoxically favour the PAYG schemes, especially if these funded schemes are invested in fixed income assets. The analysis is that the active population has been large in past years, which have also involved high rates of unemployment, low levels of wages, low levels of consumption and weakness of the economic growth in Europe and Asia where the saving rates – pushed up by the increasing life expectancy and the uncertainty facing PAYG schemes – are great, relative to investment rates. While the numerous generation of baby-boomers will be retirees and when active population will slow down or decrease after 2005-2010, wages will rise, consumption will be more dynamic and inflation higher. In addition current cohorts of numerous baby-boomers who bought expensive assets will have difficulties to sell them back to the following, less numerous generation. High wages, low yields and higher inflation rates will create a gap between PAYG and funded schemes. This gap cannot be reduced in the long run by exporting saving flow surpluses, because the emerging countries are ageing as well [Holzmann, 2000 and Table 1].

Empirical evidence of this phenomenon is given by the following chart (Chart 1) where the correlation between the prime savers ratio and the share index can be observed.

The switch towards a funded scheme is not sufficient to limit the problem of financing retirement pension schemes: the problem of the transition is not solvable and funded schemes do not provide any immunisation against such demographic changes when a numerous cohort is followed by a smaller generation.

In order to smooth intergenerational consumption, some policy makers have created trust funds (United States), provident funds (Singapore) or reserve funds (France). Whatever the name of these funds, they are generally run by governments, mobilise various forms of resources such as public assets, additional contributions, pension schemes surpluses, etc.

**Chart 1**  
**Primary savers ratio (age group 40-49), 1950-2000, and share indexes – US**



The main criticism of these funds is the evidence that they do not avoid intergenerational incidence [Kotlikoff, 1992] for Ricardian equivalence reasons. On the other hand, if there are households kept away from the equity market (because of heavy entry fees, for instance), investing part of their contribution in the equity market through the trust fund can be Pareto improving. In the same time, households that find that their social security benefits suddenly became too risky will reallocate their portfolio so as to keep risk and yields patterns constant (according to Modigliani and Miller).

To sum up, these trust funds can provide a good tool to smooth the contribution rates and the consumption across generations but as in the others systems, if both taxes and the retirement age are kept constant there is no room for such a fund, as there is no room for other measures than adjustments of the replacement ratio to meet demographic changes. It is obvious that such adjustments will induce a dramatic impoverishment of the elderly.

That said, it is also obvious that the choices are political choices because it is unlikely that social security reforms will be Pareto-improving measures.

### ***III - Political economy considerations***

This point of view has been produced by some economists (notably by Cremer and Pestieau, 2000, or Barr, 2000). For the latter, the difference between PAYG and funding is second order, which does not mean that reforming pension is not usefull. Particularly, pension schemes have to be designed with labour incentives (which are not avoided by funded schemes that often do not allow for labour mobility), in order to postpone the retirement age with relation to demographic prospects, or their generosity has to be reduced in order to limit payroll taxes if economic growth demands it.

If many reforms have yet to be introduced to affect pensions, it is likely that they may not be sufficient to face the future demographic challenge. The problem is, then, the future of our pension schemes. With no more reforms, the rate of return of the PAYG based pensions will decrease (Table 7 for the French case), but a lot of persons remain opposed to such reforms.

Browning's seminal paper [1975] about the political economy of social insurance, some models have dealt with the problem of resistance against reforms in the field of social security (for a survey of these models, see Casamatta [1999]). The standard result is that if models focus on majority voting, it implies a level of social security in excess of that which maximises lifetime welfare, since the median voter belongs to the oldest members of the working population. Casamatta *et al.* [1999, 2000] have found the same result with different classes of voters differing in productivity and wages.

In this case, the level of PAYG pensions is higher than optimal and, in case of an unexpected demographic shock, the transition relies totally on one generation. This is because the median voter himself finds saving schemes more attractive if the equilibrium rate of contributions become too high. In this exercise, the authors adopt the hypothesis that the economy is characterised by a return on physical capital  $i$  which is higher than the rate of return of PAYG, i.e. the sum of the population growth rate and real wage growth ( $n+g$ , see Box 1).

The authors show that with the same hypothesis, but with entrenched interests (the grey pressure is able to impose its entitlement to a replacement ratio based on its contributions<sup>10</sup>), the transition between generations is softer: the transition generation will not bear the whole burden.

On the one hand, entrenched interests block reform towards a more efficient scheme, on the other hand they mitigate the impact of efficiency resulting from the nature of political process itself.

Artus and Legros [1997] have obtained the same, usual results: if the return on savings (i.e. on physical capital) is higher than the return on PAYG pension schemes (i.e.  $n+g$ ), which (see above) is a hypothesis that can be denied except considering the very long run, a transition towards a funded scheme is desirable. But, in this case, while the social optimum would be a move to a funded scheme, the lack of altruism – entrenched interest – in the older generation (retirees or near retirees) imposes a generous PAYG which has a disastrous influence on the economic growth.

In fact, one can show very clearly the importance in considering the (very) long run in the “pension schemes file”. The most famous example of this importance is the impact of immigration on pension schemes equilibrium: during the working (and contributing) period of the immigrants, there is a transition period characterised by a surplus which disappears as soon as the migrants retire.

Others examples show the importance of taking into account the long run.

With regard to France, the Charpin report (named after the Director of the French planning agency, and published in spring 1999) put much emphasis on the very long run (forecasts were given up to 2040). Roughly speaking the main recommendation was:

- To develop a reserve fund within the PAYG scheme;
- To increase further the required duration for reaching the full pension rate in the general regime before age 65, thus extending the Balladur reform – named after a former prime Minister - (see Table 7), i.e. 42.5 years of contributions instead of 40. Given the current distribution of ages at entry into the labour force, this should *de facto* raise the normal age at retirement to 65.

Despite the very cautious approach of its authors, the report has been perceived as extremely pessimistic as attested by reactions of the social partners, the *media* and public opinion. Initial reactions was that increasing the pensionable age was not realistic in a period of high unemployment among the elderly, but favourable recent trends suggest that unemployment should progressively disappear and could progressively become less of an obstacle to policies aimed at increasing the age of retirement. Despite this new context, the opinions remain strongly divided and the early retirement is seen as vested interest.

A simulation exercise on French pension scheme by Hamayon *et al.* helps to understand why. It shows that increasing the retirement age and creating a reserve fund with the scheme surplus that results from the decreasing equilibrium contribution rate, the effective rate can remain constant till 2045<sup>11</sup>. This has strong implication on PAYG return, because during the

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<sup>10</sup> Losing the goodwill of an other part of the electorate if they do not represent the majority. This is limited of course, because after a certain limit, the other part of the electorate refuse higher contributions.

<sup>11</sup> In addition this mechanism avoids the use of budget source to feed the reserve fund and limits the intergenerational problem revealed by Kotlikoff [1992] or Disney [2000].

phase of retirement increase the yield is much lower than without reform (Table 8) but this yield gets higher at the end of the simulation problem (Table 8: columns 3 and 7), notably because contributions are lower and economic growth higher.

**Table 8**  
**French model under reform**

Model of French pension system with unique scheme of average wage-earners

Years	No reform		Reform: increase of pension age (42.5 years of contributions) and Reserve fund			
	Contribution rate (% of gross wages)	Actuarial yields for selected cohorts*	Equ. contribution rate	Effective contribution rate	Reserve fund surplus (% of GNP)	Actuarial yield for selected cohorts*
2000	27.5	3.6	27.5	26.8	0.0	3.6
2010	28.0	2.8	24.2	26.8	3.0	2.5
2020	31.0	2.6	25.5	26.8	7.5	2.3
2030	33.5	2.5	28.2	26.8	8.0	2.45
2040	34.0	2.3	29.8	26.8	2.5	2.55

\*years indicates dates of retirement

Source: Hamayon, Legros and Sylvain (2000)

One can consider that taking into account the very long run would be a characteristic of immortal people (the equivalence between infinite life and altruism is well known) which is the case for a country. Barr [2000] uses that argument in order to show that there is no matter to pre fund pension schemes unless it has a positive effect on output: what matters is the sustainability of the whole debt and not only age-related liabilities.

Following this argument, taking into account that increasing the pensionable age will have only temporary effects if this increase is not a continuous function of the life expectancy (in the French above example with trust fund, the pension scheme has a new deficit in 2042 if there is no new reform), one can imagine a kind of mechanism which stabilise the whole public debt: associating age related and non age related debt.

In a environment where the public debts are to collapse, and will be important surpluses (which is the actual trend), Artus [2000b] shows that it would be efficient to use these surpluses in order to feed trust pensions funds and argues that investing these surpluses for half part in bonds and for half part in equities would permit to receive the excess returns associated to equities.

These reserve funds associated with increase of the pensionable age would solve the pensions problem in most countries in the very long run. In addition, even with low financial returns, this is a mean to gain the difference between improved returns, when diversifying portfolios, and interests on reduced public debt.

This mechanism implies, of course, an important increase of the age related debt in the global public debts.

**To sum up**, recent experiences in Europe indicated that pension reforms are a curious mix of political and economic problems, which need to take the very long run into account. As pension reforms are often a field for ideological debates, with a lack of attention for the long run, the reforms are often partial and/or sub-optimal and/or of very short run effect. In fact, it seems very difficult to find a consensual Pareto-improving path; and pathes are of course non unique but the main difficulty could be being able to differentiate between what is useful and what is not. Life expectancy is growing implying an important increase of age related burden. As there is no miracle to decrease this burden, the problem is reduced to a simple set of

questions : do I accept to pay more – now, tomorrow, longer -? If the answer is negative, a dramatic impoverishment of the eldest will ensue.

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