Strengthening Social Cohesion in Luxembourg: Making Efficiency and Equity Go Hand in Hand

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STRENGTHENING SOCIAL COHESION IN LUXEMBOURG: MAKING EFFICIENCY AND EQUITY GO HAND IN HAND

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ABSTRACT/RÉSUMÉ

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Luxembourg is a rich and fast-growing country. However, inequality of disposable incomes has trended up modestly over the past decades and relative poverty has risen reflecting mainly the rapid growth of high incomes. The relatively high inequality of market incomes is substantially reduced by large social transfers, but the risk of relative poverty still affects the most vulnerable, such as the young, the less educated, single parents and migrants. At the same time the generous transfer systems tend to reduce work incentives. There is significant room for improvement in the design of the tax and transfer system to enhance work incentives and improve targeting, particularly for the less skilled workers. Reforms that tackle poverty traps would both reduce inequality and improve the labour supply of residents. Strong activation policies are important in getting people to jobs. Job opportunities would also be enhanced by improving education outcomes for pupils from low socio-economic backgrounds and for second-generation immigrants. Reducing high repetition rates and better targeting education spending to schools with high shares of vulnerable students would help improve outcomes.

JEL Classification: D31; H23; H53; I38; I24.

Key words: Luxembourg; Income distribution; Redistributive effects of taxes and transfers; Minimum income; Education and inequality.

This working paper relates to the 2012 OECD Economic Survey of Luxembourg. (www.oecd.org/eco/surveys/Luxembourg).

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Renforcer la cohésion sociale au Luxembourg: concilier efficacité et équité

Le Luxembourg est un pays riche en croissance rapide. Néanmoins, les inégalités de revenus disponibles se sont légèrement accentuées au cours des dernières décennies, et la pauvreté relative a augmenté, essentiellement du fait de l'accroissement rapide des hauts revenus. Les inégalités relativement élevées des revenus marchands sont sensiblement atténuées par d'amples transferts sociaux, mais le risque de pauvreté relative pèse toujours sur les catégories les plus vulnérables, comme les jeunes, les personnes ayant un faible niveau d'instruction, les parents isolés et les migrants. Par ailleurs, le généreux système de transferts tend à réduire les incitations au travail. Il est possible d'améliorer sensiblement le système de prélèvements et de transferts pour renforcer les incitations au travail et améliorer le ciblage des dispositifs, en particulier pour les travailleurs peu qualifiés. Des réformes visant à remédier aux phénomènes de piège de la pauvreté permettraient à la fois de réduire les inégalités et d'améliorer l'offre de travail des résidents. Il importe de renforcer les mesures d'activation pour amener les individus à l'emploi. On pourrait également renforcer leurs perspectives d'emploi en améliorant les résultats scolaires des élèves issus de milieux modestes et des immigrés de deuxième génération. Une réduction des taux élevés de redoublement et un meilleur ciblage des dépenses d'éducation sur les établissements comptant une forte proportion de jeunes vulnérables contribueraient à améliorer les résultats du système d'enseignement.

Classification JEL : D31; H23; H53; I38; I24.

Mots clés : Luxembourg; Distribution des revenus; Effets redistributifs des taxes et des transferts; Revenu minimum; Éducation et inégalités.

Ce document de travail se rapporte à l'Étude économique de l'OCDE de Luxembourg 2012 (www.oecd.org/eco/etudes/Luxembourg).

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Strengthening social cohesion in Luxembourg: making efficiency and equity go hand in hand

By Jean-Marc Fournier and Clara Garcia[1]

The high growth of Luxembourg over the last decades has not been equally shared across the population, with the most vulnerable lagging behind. As social cohesion is an important value in the Luxembourg society, the trend of rising inequality despite overall high incomes is of concern for its citizens. To preserve social cohesion, a win-win package of interconnected policies can both strengthen growth prospects and reduce income inequality. This includes activation policies to find employment for the vulnerable groups, education policies that increase work and the market income prospects of the less skilled, tax and transfer that are well targeted, while preserving sufficient work incentives. This paper analyses the sources and trends of inequality and discusses these win-win policies to get people to jobs while ensuring a basic social safety net. The first part describes the sources of the rise in disposable income inequalities, highlighting the role of widening labour income inequalities. The second part investigates the role of taxes, cash transfers and some of the in-kind transfers to reduce the market income inequalities. The third part examines the determinants of inequalities in education outcomes.

Inequality has risen despite high taxes and transfers

Luxembourg, the richest country in the OECD, puts great value on social cohesion. Growth over the past 30 years has been more than 2 percentage points above the euro area average, and net wealth of households is estimated to have reached more than €700 000 per household in 2010-2011 (Mathä *et al.*, 2012). While market income and wealth are quite unevenly distributed, social cohesion in Luxembourg is ensured by its own model of fair sharing of incomes in an environment of consensual decision making. This model is appreciated: 73% of people say they trust their political institutions, which is one of the highest rates in the OECD (OECD, 2011a).

Nevertheless, both disposable income inequality and relative poverty have been on the rise despite the high share of financial transfers in GNI by OECD standards. This suggests that there is room for improvement in the design of policies to make sure that everybody benefits from growth on a fair and sustainable basis. In addition current policies can blunt work incentives and are not always well targeted to the neediest. While those with no income at all benefit from generous transfers, low wage earners receive relatively little. At the same time, those at the higher end of the income distribution benefit from non targeted transfers (such as family allowances) and regressive transfers (such as tax rebates). Rebalancing transfers from high income earners to low wage earners would not only reduce inequality, but also make it more worthwhile to participate in the labour market.

Apart from the lower skilled, poverty tends to be concentrated on the immigrant resident population. As a rich and small open economy, Luxembourg has a high rate of inward migration. The share of migrants among the resident population grew continuously over the past 30 years to reach 43% in 2011. Within the foreign population, the Portuguese community represents more than one third, with closer European countries such as France, Italy, Belgium and Germany also highly represented. Among these

diverse populations, children face greater difficulties at school. There is room for improvement in the education system to tackle these difficulties at their root. On top of this immigrant population, cross-border workers, mostly from France, account for more than 40% of employment (Figure 1). This paper will discuss social cohesion of the resident population, with particular consideration granted to groups facing larger difficulties.

Figure 1. **Employees in the economy by origins**

1995

2011
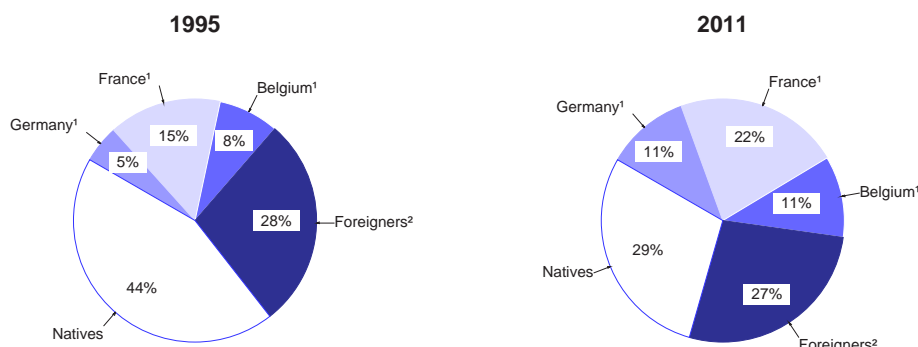
1. Cross-border workers.
2. Foreigners resident.
Source: IGSS.

The gap between the top and lower decile of disposable income has increased

There has been a steady trend increase in overall inequality in Luxembourg over recent decades. The headline Gini coefficient for the whole population reveals a moderate increase of inequality since the mid-1980s, at a pace faster than the OECD average (Box 1). The increase in top incomes is above country average, while the increase in low incomes, still above the OECD average, is below the Luxembourg average growth rate. While most income inequality measures point to a moderate deterioration since the mid-1980s, it is striking that the lowest decile of the population is far from benefiting from the average growth trend of the country. The gap between the poorest and other groups (whether one compares the lowest decile to the highest decile or to the total population) increased much faster than in the OECD on average since mid-1980s (Figure 2).

Box 1. **Indicators to measure inequality and poverty in Luxembourg**

- Various inequality indicators show that although disposable income[1] inequality in Luxembourg is below the OECD average, inequality has grown since the mid-1980s. In a ranking by Gini coefficient (most equal first), Luxembourg ranks eleventh among the 34 OECD countries (late-2000s figures). On average, people within the top quintile earn 4.2 times more than those within the bottom quintile, which is close to that for neighbouring countries (France, Germany), and below the OECD average. All these indicators converge to show that inequality has increased since the mid-1980s in Luxembourg. In particular, the Gini coefficient increased by 4.2%, substantially more than the OECD average (2.6%). However, that rise appears to be less sharp if one puts more weight on the lower-end of the income distribution, as the interdecile ratio rose by 0.5% in Luxembourg versus the 0.4% OECD average rate.

- Poverty can be measured as absolute or relative. Relative poverty compares the income of the poorest to the median income of the population. Absolute poverty is the share of people below an international poverty threshold defined in purchasing power parity terms (*e.g.* Smeeding (1997) counts the number of people living with less than $14 per day in terms of a 1997 base year at the world scale). Absolute poverty is very low in Luxembourg by any standards, given that the level of income is very high. The relative poverty indicator is a very different concept that aims at capturing relative deprivation (following the seminal work of Runciman, 1966), considering that the poor are those who cannot meet the

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convention of minimum needs. In this perspective, the minimum needs increase with the growth of median income, and hence are supposed to be high in Luxembourg. In addition, this indicator is comparable between countries even if the level of prices is high in Luxembourg relative to the euro area. The poverty threshold considered for 2011 is €1 627 per month or 60% of the median disposable income, following Eurostat standards. According to this standard, the poverty rate is 13.6 % in 2011, a level that is not far from the European Union average.

1.   Disposable income refers to household disposable income adjusted for the size and the composition of the household. It thus takes into effect both the financial transfers between and within households. In-kind benefits that present significant measurement issues at household level are ignored in these headline indicators. The resident population is considered to compute the inequality indicator, i.e. including migrants but excluding cross-border workers.

Figure 2. **The gap between top and low incomes is widening[1]**

Difference of average annual growth rates between top and bottom deciles since mid-1980s
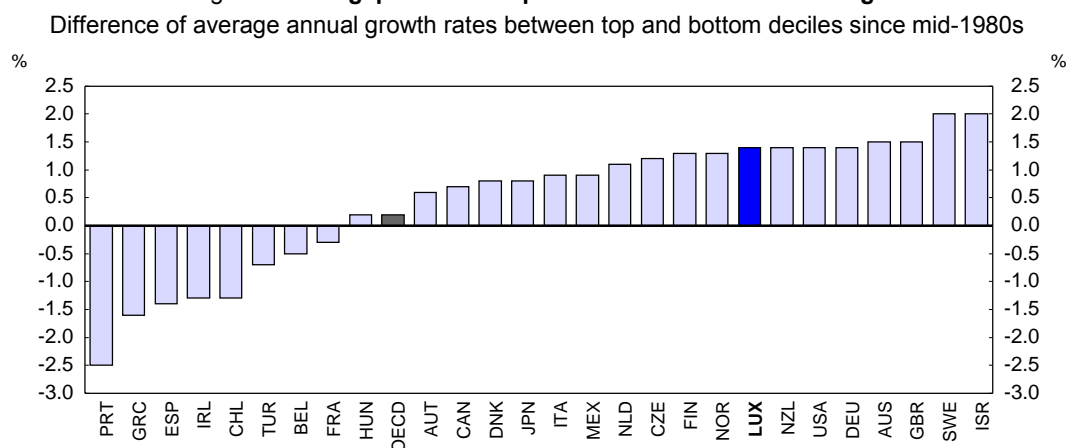
1.   Income refers to disposable household income, corrected for household size and deflated by the consumer price index (CPI). Average annual changes are calculated over the period from 1985 to 2008, with a number of exceptions: 1983 was the earliest year for Austria, Belgium, and Sweden; 1984 for France, Italy, Mexico, Turkey and the United States; 1986 for Finland, Luxembourg, and Norway; 1987 for Ireland; 1988 for Greece; 1991 for Hungary; 1992 for the Czech Republic; 1995 for Australia and Portugal and 1996 for Chile. The latest year for Chile was 2009; for Denmark, Hungary, and Turkey it was 2007; and for Japan, 2006. Changes exclude the years 2000 to 2004 for Austria, Belgium, Ireland, Portugal and Spain for which surveys were not comparable.

Source: OECD, Household Income Distribution and Poverty database.

Relative poverty is also increasing

Relative poverty rates, defined as the share of individuals who earn less than 60% of median income (see Box 1) has risen from 12 % in 1995 to 14 % in 2011, close to the European average (Figure 3, panel A). While the relative poverty rate for the whole population remains below the European average, the young and single parent families are particularly vulnerable. For these two categories, relative poverty, which has substantially increased, is higher than European average (Figure 3, panel B). People who did not reach an upper secondary level of education also face high relative poverty risks (relative poverty at 21% in 2011), roughly in line with the European average. Among residents, relative poverty rates also hinge on nationality: the Portuguese community and, to a lesser extent, the Italian community have the highest relative poverty rates (Figure 4). This is likely to be at least partly due to differences in education levels. By contrast, women and elderly are not particularly at risk of relative poverty in Luxembourg. The old age population benefits from the high level of minimum pensions, while the progressivity of the pension system is more moderate than in the OECD on average (Joumard *et al.*, 2012).

Figure 3. **Relative poverty has been rising**[1]

Relative poverty rate (cut-off point: 60% of median equalised income after social transfers)
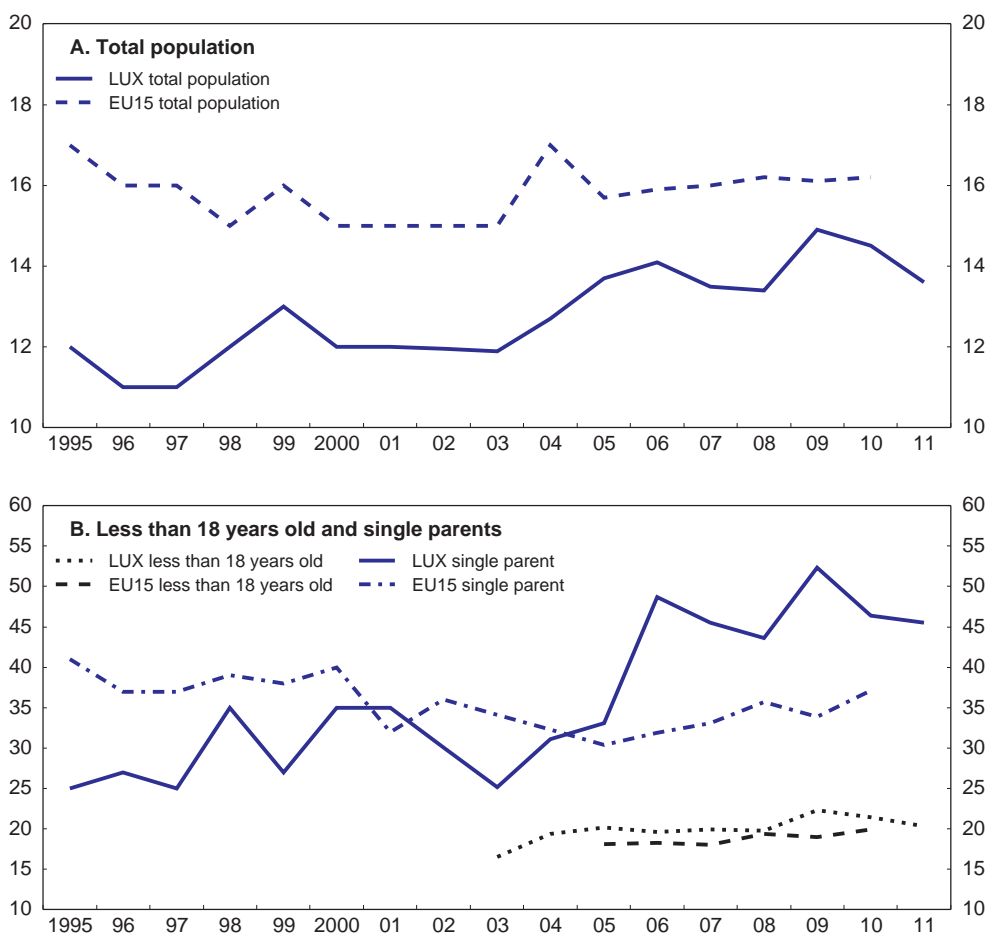
1. In-kind benefits are not included in the computation of poverty rates.
Source: Eurostat.

Figure 4. **Relative poverty rates depend on citizenship**[1]
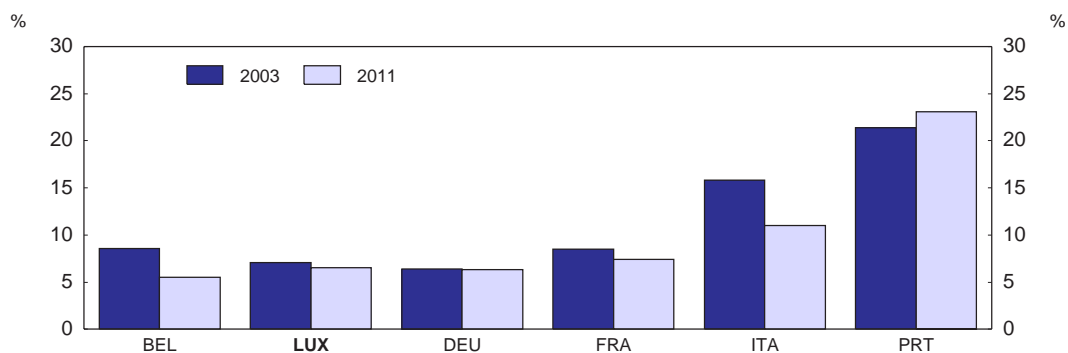
1. Relative poverty rate, threshold set at 60% of median income (€1 627 per month). Income is adjusted for family size.
Source: STATEC.

Both market income inequality and its redistribution are high by OECD standards

1.1   Market income inequality is slightly higher than the OECD average, reflecting a high share of the financial sector among the income earners. The financial intermediation activity represented 11% of total employment in Luxembourg in 2010, which is well above the euro area average of 3%. This has led to an important dispersion of inco

1.2   me: a one percent rise of the share of the financial sector among the working population increases the interdecile gap by 0.3% in Luxembourg as in many OECD countries (Figure 5). In addition, the distribution of wealth, which is much more uneven than income, leads to a high inequality of capital income: it amounts to 6% of gross income among households of the highest decile, compared to 1.5% among households of the lowest decile (STATEC, 2011). While this fact is common to other countries (Fredriksen, 2012), the high level of wealth in Luxembourg increases its importance there. Other noticeable drivers of earnings inequality are education inequality, part-time work, temporary contracts and self employment, in Luxembourg as in most other OECD countries (Fournier and Koske, 2012).

Figure 5. **An increase of the size of the financial sector increases inequality**

Percentage income gain associated with the increase of the share of the financial sector in employment by one percent[1]
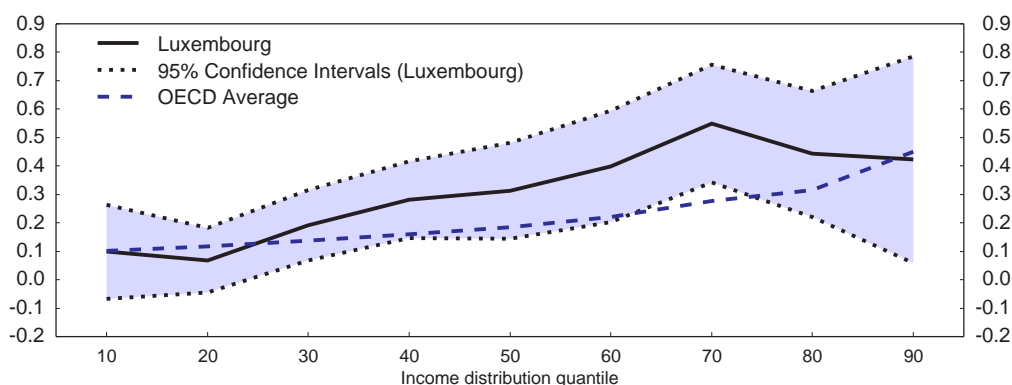
1.   For instance, a 1 percentage point increase in the share of workers in the financial sector in Luxembourg increases the 10th quantile of income distribution by 0.1%, while it increases the 90th quantile of income distribution by 0.4%. Overall, a rising curve means that an increase in the share of the financial sector pushes income inequality up. The shaded area represents the 95% confidence interval.

*Source*: Based on Fournier and Koske, 2012.

Market income inequality has been reduced by rising employment rates. To get a full picture of the overall market income inequality, people outside the working population need to be included. They typically have few alternative sources of income, and hence a lower employment rate is associated with a higher market income inequality in most OECD countries (Hoeller *et al.,* 2012). Between 1985 and 2004, the employment rate as a share of the total working age population increased by 0.17% per year, which is one of the largest improvements within the OECD (OECD, 2011b), albeit from a low level. At the same time, market income inequality among the sole working population increased by less (0.12% per year). The first effect dominates: the inequality of labour income among the whole working age population decreased between 1985 and 2004.

The minimum wage is relatively high as a share of average wages in Luxembourg compared to other European countries (Figure 6). This suggests that reforming the setting of the minimum wage could improve labour market participation. If the minimum wage is above the wage level that would prevail in a perfectly competitive labour market, allowing the minimum wage rise less fast than average wages could increase employment (Bassanini and Duval, 2006). This could be achieved by setting up an independent council to advise on the minimum wage or by not allowing the minimum wage to rise as rapidly as average

wages, as suggested in the 2010 *Economic Survey of Luxembourg* (OECD, 2010a). However, this is likely to increase the dispersion of wages among the working population (Checchi and Garcia-Penalosa, 2008, Koske *et al.*, 2012). Overall, the effect of a high minimum wage on income inequality remains ambiguous, while its effect on labour participation and growth is negative.

Figure 6. **The minimum wage as a percentage of average monthly earnings**
2011[1]
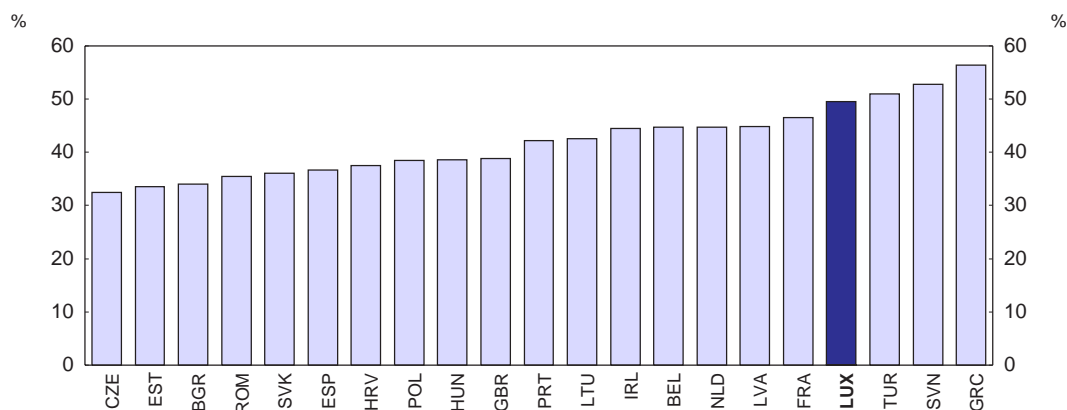
1.   For Belgium, France, the Netherlands and Turkey, the data refer to 2010.
Source: Eurostat.

Substantial market income inequality is reduced by large taxes and transfers. The substantial gap between labour market income and disposable income, by nature, reflects the important role of financial redistribution in Luxembourg. Luxembourg ranks 6th among OECD countries in terms of social expenditure to GNI. The progressive tax system also contributes to redistribution. Overall, Luxembourg ranks rather high among OECD countries in terms of the reduction of the Gini coefficient before and after taxes and transfers (Figure 7).

Figure 7. **Redistribution substantially reduces income inequalities**
Gini coefficient
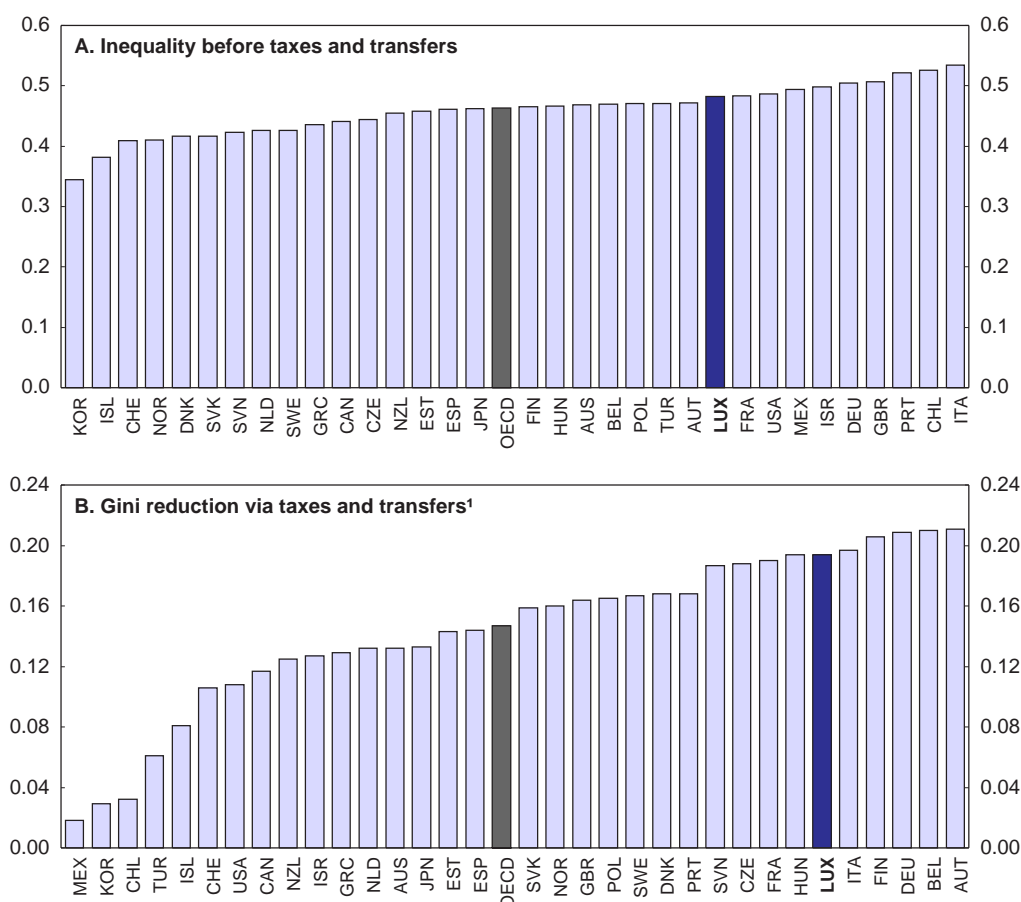
1. For the panel B, the Gini reduction is derived as the level difference between the Gini coefficient before taxes and transfers and the Gini coefficient after taxes and transfers.
Source: OECD, Social and Welfare Statistics - Income Distribution and Inequality database.

However, in terms of relative poverty rates, Luxembourg is not far from the European Union average (Figure 8). Nordic countries such as Denmark or Sweden, which spend a comparable share of national income on transfers, yet reach lower relative poverty rates. Rather than the reduction of inequality *per se*, it is indeed the actual inequality, taking into account not only the government intervention but also the behaviour of the population, that really matters for standards of living. In particular, the poverty rate before taxes and transfers in Luxembourg is higher than the European average, suggesting that a sound transfer system should also provide incentives to work for the lowest skilled to increase their labour market income.

Figure 8. **Relative poverty rate is close to the European Union average[1]**

2010 (cut-off point: 60% of the median equivalised income after social transfers
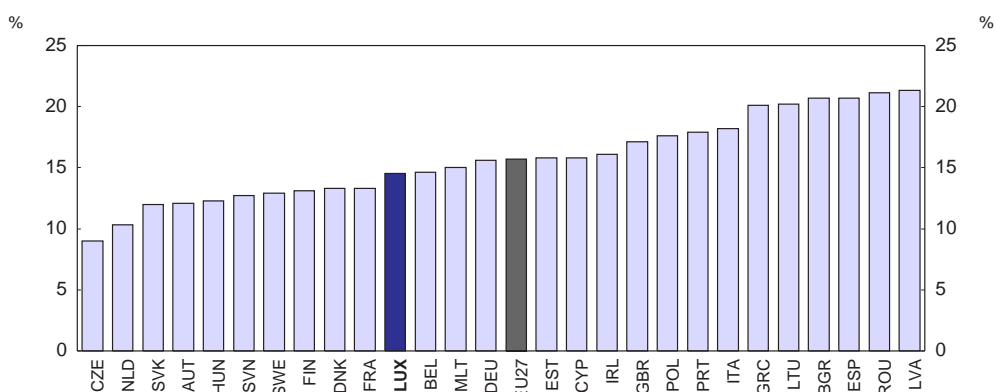
1. While 2010 data are shown here for sake of comparability, 2011 poverty data shows an improvement in Luxembourg, the poverty rate decreasing from 14.5% to 13.6%.

Source: Eurostat, income and living conditions database.

The large transfer system is poorly targeted

Most of transfers and tax rebates could be better targeted

The overall redistributive performance of the transfer system is dominated by the features of the largest programmes such as pensions, survivor's benefits or family allowances. These schemes are designed mainly to tackle specific social issues and are not primarily designed for redistribution purposes (Table 1 and Box 2). As a result, the progressivity of cash transfers is rather low in international comparison (Figure 9).

Figure 9. **The progressivity index of cash transfers is low[1]**
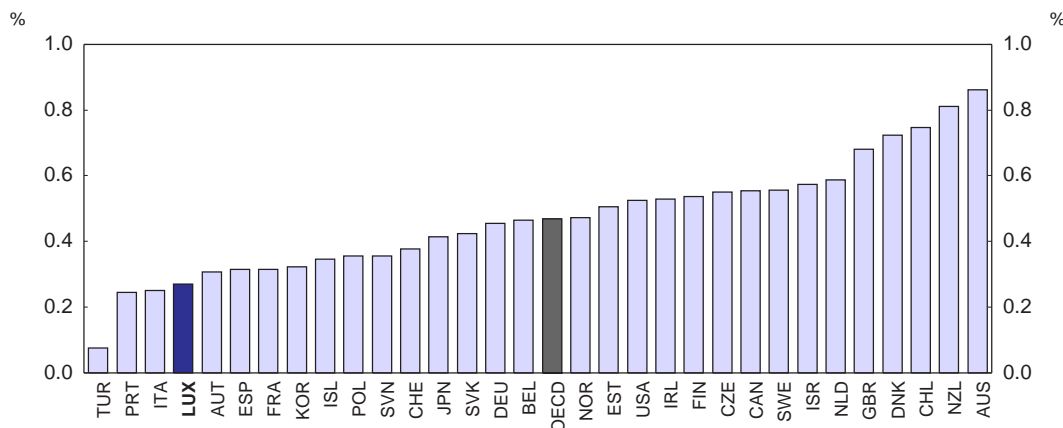
1. The progressivity index of cash transfer is the Kakwani index. A progressive index means that the cash transfers as a share of individual income is higher at the lower end of the income distribution. See Joumard *et al*. (2012) for more details. While the whole population is considered here, the broad picture still holds with the working age population only.

Source: OECD, Joumard *et al.* (2012).

Table 1. **Cash transfers**

As a share of GNI, 2007

Benefits	Luxembourg	OECD average
Old age	6.0	6.2
Survivors	2.1	1.0
Incapacity related	2.3	1.9
Family	3.3	1.3
of which: RMG	*0.5*	
Unemployment	1.1	0.8
Other social policy areas	0.4	0.3
Total	15.2	11.3

Source: OECD National Accounts database and Government of Luxembourg.

Box 2. **Overview of the welfare system**

The Luxembourg social system has a number of pillars. These include the insurance-based pension and unemployment benefit systems, which cover both resident and cross-border workers. While these are contingency-based and not aimed primarily at redistributing income, their effects in this regard are not altogether neutral. A second element is pure transfers, such as family and disabled allowances, and the minimum guaranteed income. These schemes are only for residents. The third element is in-kind benefits, notably access to health care and education.

The **pension** scheme is a pay-as-you-go system that redistributes income between generations. It redistributes little within generations (OECD, 2011c), but relative poverty is low among the older population. While the system is rather generous, its size remains contained today because the dependency is relatively low thanks to the inflows of cross-border workers. Nevertheless, survivors' benefits represent 2% of gross national income, which is twice as much as the OECD average.

Unemployment benefits are characterised by a very high replacement rate (from 80% to 85% of previous income, capped at 2.5 times the minimum wage), and it can be available to young people without work history. When this unemployment insurance expires after 12 months, recipients may switch to the minimum income scheme (*revenu minimum garanti*, RMG). Unemployment benefits are particularly generous for the youngest and the oldest among the working population. The young who have graduated can earn them even without a work history and the oldest workers benefit from extended benefits.

F**amily allowance** is the most generous among OECD countries, designed to reduce the child related costs and support the birth rate. Most benefits are not means tested. The government provides a birth allowance (€1 740.09) for all women and a maternity allowance (€194.02 per week) for women who do not benefit from maternity leave. A monthly child allowance (€185.60 for the first child, €440.72 for a group of 2 children and around €802.74 for a group of 3 children) is provided for all children below 18 years, resp. continued up to 27 years in case of secondary studies. This allowance is increased by €16.17 for children older than 6 and by €48.52 for children older than 12. From 2008, each tax-paying family receiving a family allowance – as well as families with an income below the taxation threshold – are entitled to the so-called "boni pour enfants" (child bonus). The amount payable is €76.88 per child per month, along with family allowance. Family allowances for a family with two children older than 12 sum up to €691.51 per month. Childcare service vouchers are provided for children aged below 12 according to an income scale taking into account of the income situation of the recipients, a system which enables a targeted approach towards households with a low income situation. Children in households benefitting from RMG or identified by the municipality as being at risk of poverty are entitled, respectively, to 25 and 15 gratuity hours of care per week and to 35 and 45 supplementary hours per week at low tariff of €0.50 per hour.

The **minimum guaranteed income** (*revenu minimum garanti*, RMG, 0.5% of the Gross National Income) is designed to ensure to all residents[*] a universal minimum income that is regarded as a vital necessity. This subsidy, one of the most generous among OECD countries in relative terms, is given to residents aged above 25, the amount depending on household income. Single households with no income are entitled to €1 283.24 per month, with an additional € 641 for a second adult and € 116.66 for each child. A rental allowance (maximum €123.95 per month) adds on top of the RMG if rent is due for an occupied flat. Work earnings are not taken into account up to 30% of the RMG (Figure 10, rising part of the line on the left hand-side). By contrast, when earnings

exceed 30% of the RMG (and below 130% of the RMG), each euro earned is subtracted from the allowance, so that the additional income from extra work is reduced to zero (Figure 1.10, flat part of the line). Any capital income is subtracted from the subsidy, starting with the first euro earned. Furthermore, the wealth of the household, converted into its equivalent life annuity, is also added on top of household income to assess total eligibility.

The RMG is divided into two schemes: an "insertion allowance" and a "complementary allowance". The individual insertion allowance is linked with labour activation such as training or community work. The complementary allowance, aiming at compensating the difference between the statutory limit of the RMG and the sum of the household resources, is granted also to those who cannot take part in such activities. Roughly 7 out of 10 adult RMG beneficiaries are exempted from activation policy, either because they are already in full-time training, or because they take care of dependents (their children in most cases), they are too old or they cannot work for medical or social motives. Among those who are not exempted, 63% of beneficiaries are taking part in labour activation activities (SNAS, 2012), and the unmotivated refusal of labour activation may lead to the withdrawal of the allowance. Furthermore, to facilitate activation measures and promote labour market participation of (lone) parents, the childcare service voucher (*chèque service accueil)* provides discounted access to childcare facilities to RMG beneficiaries among others (They benefit from 25 hours for care per week that are free of charge and reduced tariffs, for those hours of care exceeding 25 hours per week).

Figure 10. **The RMG reduces the incentive to work**

Gross income, household with neither capital income nor wealth (October 2011 scale).
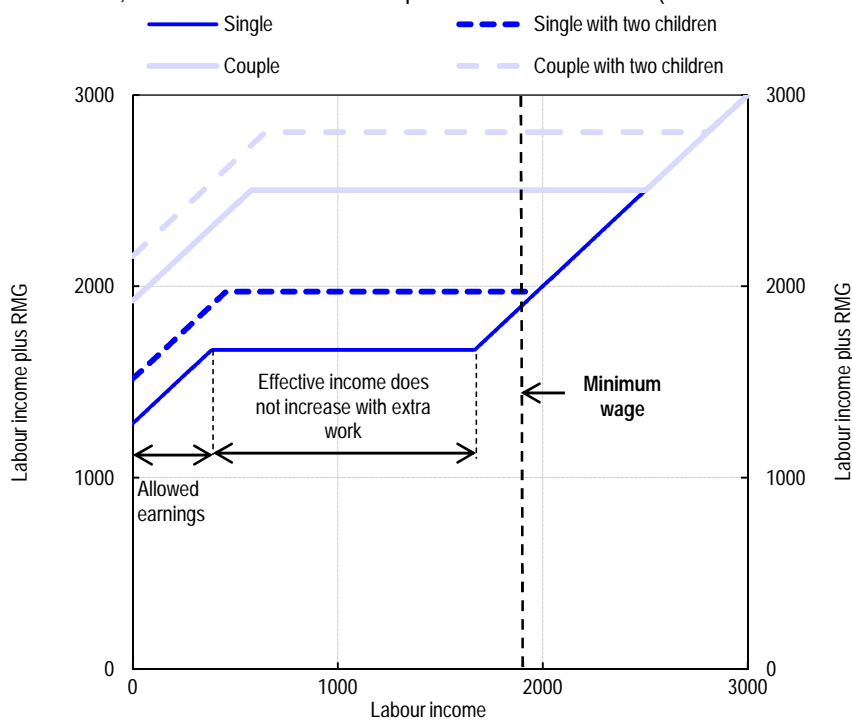
Sources: *Fond National de Solidarité*, OECD estimates.

Parents who take care of their children during early childhood are entitled to an education allowance that amounts to € 485.01 if they do not work, or € 242.51 if they work part-time. This benefit, which may come on top of the RMG, substantially reduces the size of allowed labour earnings.

Other benefits include a gross disabled allowance equal to the RMG allowance. A dependency insurance is granted to those who cannot carry out "activities of daily living" on their own. Overall, incapacity-related spending is much higher than the OECD average but slightly below that in Nordic countries.

*.   The RMG is granted to a resident foreigner so long as he has lived in Luxembourg for at least five years during the last 20 years, or at least 3 months if
        one member of the family in an EU citizen.

In Luxembourg, children are legally entitled to receive family allowances, which explains why parental income is not taken into consideration in the legal attribution and determination of family allowances. It is the child's personal right related to its place of residence that matters. As a result, these family allowances, that are large by OECD standards, are universal benefits. Such a design, which is more expensive and less redistributive than means-tested allowances, is also not optimal in terms of fertility incentives. Although some analysis suggests that financial incentives can have an impact on fertility, the effect is rather small (Gauthier and Hatzius, 1997) and fades with the level of income (Cohen, 2007). In addition, there is no correlation across OECD countries between the size of family allowances and the fertility rate (Figure 11).

Successive reforms, such as the introduction of a child bonus (*boni pour enfant)* in 2008, have tackled the anti-redistributive feature of the system by making the family allowances independent of income. Still, as the size of the family allowances is high relative to the overall size of the tax and transfer system, the family allowance benefits largely to the higher end of the income distribution, with no clear impact on fertility. As a result, the tax wedge, that encompasses all taxes and transfers that contribute to the gap between the labour cost to the employer and disposable income, is much smaller for those who have children. For instance, the difference between a single person's tax wedge and the tax wedge for a family with two children is the largest among OECD countries. All this suggests that there is room for reducing family allowances for those who need it least, giving space to provide more for poor single parent families. Furthermore, the design of a better targeted allowance matters: the reduction of the allowance with rising income should be smooth so as to avoid sharp threshold effects to ensure that improved targeting does not substantially increase marginal tax rates.

Figure 11. **Large family allowances have a weak correlation with fertility**

2007

Source: OECD, Social expenditure database and the World Bank.

Higher but more targeted benefits could be financed by removing poorly targeted tax expenditures that alter the progressivity of the income tax (Joumard *et al.,* 2012). These include tax benefits that encourage home ownership (mortgage interest rate and low taxes on principal residence capital gains), which in addition have undesirable side effects on raising housing prices. As property wealth is higher among high income earners (Figure 12), such a scheme benefits the rich disproportionally. Life-insurance tax rebates are also likely to benefit more the rich which, on average, save more. Therefore, the relatively low tax rate of long term capital gains is likely to have a large regressive impact, as capital gains represents a large share of top incomes earnings in Luxembourg (STATEC, 2011) as in most other OECD countries (Hoeller, 2012). Other tax expenditures have also undesirable side effects, such as the deductibility of commuting costs that encourages urban sprawl. As a result, the effective marginal tax rate among the top ten percent of earners, as approximately inferred from the EU-SILC survey, is much smaller

than the nominal top marginal tax rate. Estimates from the EU-SILC survey also suggest that the rate is close to the effective marginal tax rate among the decile immediately below. Reviewing, simplifying and reducing all these tax expenditures would not only increase the progressivity of the income tax, but foster the efficiency of a system that has become very complex.

Figure 12. **Property wealth and disposable income**[1]
2007 wealth in thousands of euros
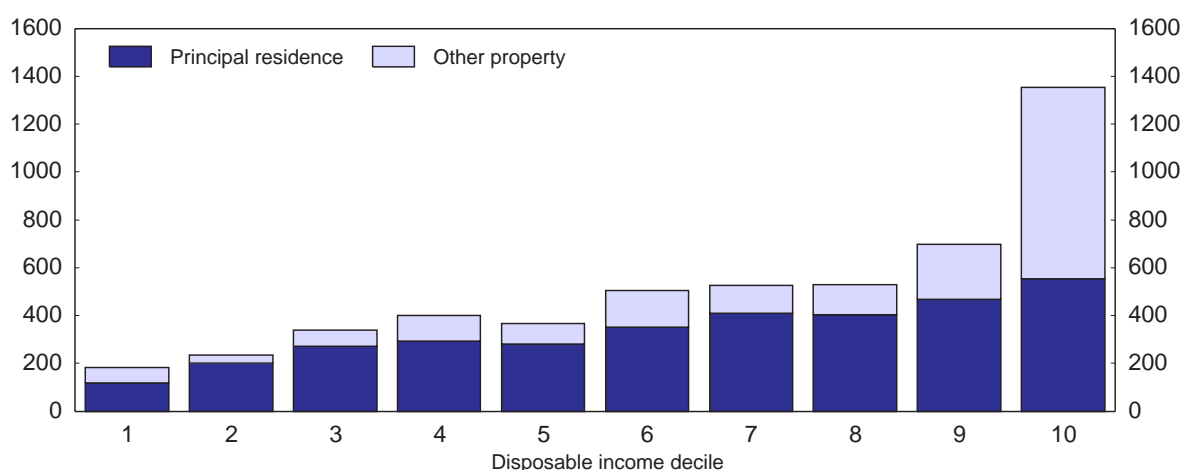
1. According to 2010/2011 data from the survey 2010/2011 (BCL, 2012), the mean value of the principal residence ownership more than triples from the first to the fourth income quantile (from €207 000 to €748 000), suggesting the link between income and property wealth may have even strengthened in the recent years.
Source: Institut national de la statistique et des études économiques (STATEC) (2011), Cahier Économique, Rapport Travail et Cohésion Sociale 2011 (based on the Luxembourg Wealth Study).

Housing policy does little to reduce housing shortage as the supply side is rigid.

Public housing policy is not very well targeted and appears not to solve the housing shortage problem (Box 3). Rental applications are more numerous than available dwellings: more than 1 200 applicants are queuing in the *Fonds du Logement* waiting list, which is long relative to turnover. Admission criteria are flexible at the cost of lower transparency and waiting time may vary across applicants as matching hinges on households' specific needs. This raises a fairness issue as those who have had the chance to get public housing have a significant advantage over those who have not. Households that are not poor may benefit from this scheme, as the rents rise little with income. Raising rents for those who are close to or above the median income would encourage such renters to switch to the private housing market, and hence free housing for those who need it most. Better targeting of housing subsidies can, on the other hand, have negative side effects on work incentives. As the rent increases with income, this scheme raises the effective marginal tax rate. All in all, providing well designed means tested cash transfers disregarding the use of funds, rather than subsidising housing, would make the system simpler and less distortive.

Furthermore, housing rent subsidies, which 14 000 households receive, cannot reach their goal to make housing more affordable as they tend to push house prices up when housing supply is rigid. Even if the current level of construction of new dwellings is rising, substantial barriers remain for increasing supply, many of them being policy-induced (As discussed in the 2010 *Economic Survey of Luxembourg*, OECD, 2010a). When supply is rigid, support of demand does not change the affordability of housing as the subsidy is fully transmitted into rent prices. In other words, that means that the subsidies are actually redirected toward landlords, as evidenced in the empirical literature (see Fack (2005) for the case of rent subsidies in France).

Box 3. **Social housing: attribution and rent computation**

Public housing is granted by the *Fond du Logement* or by other public bodies, such as municipalities. Attribution and rent computation are set by the implementing regulation of the 1979 law on social housing as updated in 2009.

Candidates provide relevant information about their income, dwelling and the composition of the household without a specific income threshold. This information is supplemented by an interview and a visit in the current dwelling of the applicant. Attribution depends on vacancies matching the household composition. For each vacancy, priority depends on the current dwelling of the applicant: first served are those who have no dwelling in the near future and those who live in substandard dwellings.[1]

The rent is the sum of two components. One is linked to the size of the dwelling and a second linked to income after taxes and transfers. The first component is 86 cents per square meter and per month, which is very small in a country where rents average more than 16 €per square meter.[2] The second component is 6% of income of a candidate who earns the RMG, or €83 per month, and it increases steadily with income and decreases with the size of the household. To take a break-even example, a couple with 2 children with a net income of €5 000, or roughly twice the median income, would pay a rent close to the average market price for an 80 square meter flat. Children's earnings are not fully taken into account in the calculations to reduce the disincentive to enter the job market. For retirees and the disabled, the computation puts a higher weight on the size of the apartment, weakening the link between the rent and the level of income.

1. Prior to 2009, this rule was tighter: only the four applicants with the lowest income per consumption units could be considered.

2. The examples are built on 2011 indexes and prices.

Public higher education spending is not targeted to disadvantaged families

The high share of public funding of higher education is not means tested even though the share of students from advantaged socio-economic backgrounds is relatively high. For instance, the University of Luxembourg is free for residents and charged €200 per semester in 2011 for non-Luxembourg students, which is much lower than the cost. Although higher tuitions may discourage students from poor families from attending, evidence suggests that the link between socio economic background and access to higher education is primarily determined by cognitive development in early childhood and the foundation laid during school (Carneiro and Heckman, 2003). Furthermore, negative effect of tuition fees on participation can be fully offset through improvements in the financial support for students (Heller, 1999; OECD, 2008). Reforming the financing of higher education by a system of fees supported by loans and grants to needy students would help achieve redistribution goals. Loan repayments could be linked to future incomes, as occurs in Australia.

Insufficient work incentives within the minimum income scheme

If most transfers are poorly targeted, the minimum income scheme, which represents roughly 3% of overall transfers, is well targeted to tackle extreme poverty, but at the cost of sharply reducing work incentives (Box 2). This gives to those who have no or little income a relatively high subsistence benefit (Figure 13). However, the allowance remains below the poverty threshold and the beneficiaries could be better included within society if they were to go back to work.

Figure 13. **Income levels provided by cash minimum-income benefits[1]**
Net income value in percent of median household income, 2010
Single, no children
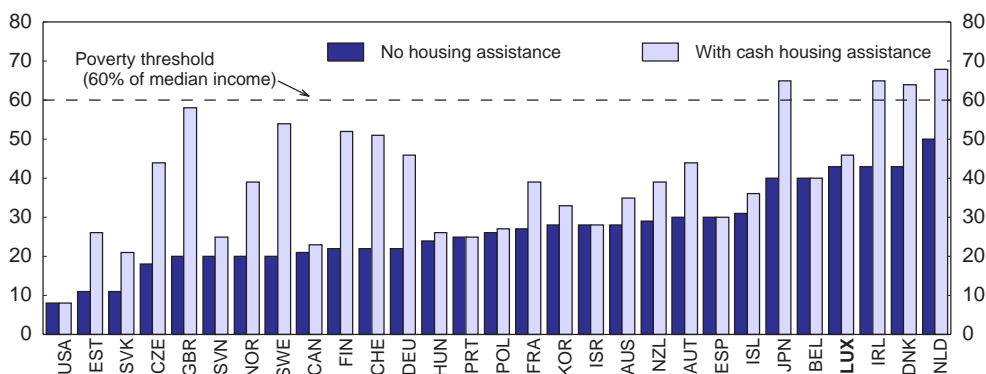
1.   Median net household incomes are for a year around 2008, expressed in 2010 prices and are before housing costs (or other forms of "committed" expenditure). Results are shown on an equivalised basis (equivalence scale is the square root of household size) and account for all relevant cash benefits (social assistance, family benefits, housing-related cash support as indicated). US figures include the value of SNAP ("food stamps"), a near-cash benefit. The cash housing assistance indicates the range of benefit levels in countries where they depend on actual housing expenditure. The bottom end shows the situation where no housing costs are claimed while the top end represents cash benefits for someone in privately-rented accommodation with rent plus other charges amounting to 20% of average gross full-time wages.

Source: OECD, Income distribution database.

The design of the Minimum income scheme (Revenu Minimum Garanti, RMG) implies a high marginal tax rate for the poorest (Box 2). In particular, there are cases in which the marginal tax rate is equal to 100%, meaning that working one hour more ultimately yields nothing. The RMG should be reformed to reduce this effective marginal tax rate (*e.g.* like the introduction of the *Revenu de Solidarité Active* – RSA – in France, see Box 1.4). With a similar reform in Luxembourg, the RMG transfer would decrease more smoothly with labour income (Figure 14). Such a broad reform is consistent with the recommendation of the 2010 *Economic Survey of Luxembourg* to include a larger system of in-work benefits (OECD, 2010a). This can enhance welfare (Immervoll *et al.*, 2005) and could be financed by a reduction of tax expenditures for high income earners.

Reforming the RMG can be done at a reasonable cost. A simulation on individual data suggests that replacing the current share of allowed earnings by an amount of allowed earnings that represent 40% of labour earnings, with no ceiling, would increase the overall cost of the RMG scheme by only about 0.05% of GNI if one assumes for simplicity that work behaviour does not change. Assuming further that 5% of those who do not work switch to a minimum wage job, the reform is approximately cost neutral. However, such a reform would imply a loss of net income for singles with two children who earn less than €1 000 per month. Therefore, a combination of a raising the RMG by 16% for those who have no other earnings, and setting a 40% rate for allowed earnings, would ensure that no one looses from the reform. This would increase the overall cost of the RMG scheme by roughly 30% (or 0.15% of GNI), assuming again that 5% of those who do not work at all find a minimum wage income. On top of that, financial support for single parent families could be further enhanced to target transfers toward those who need it most.

Figure 14. **Smoothing the RMG scheme**
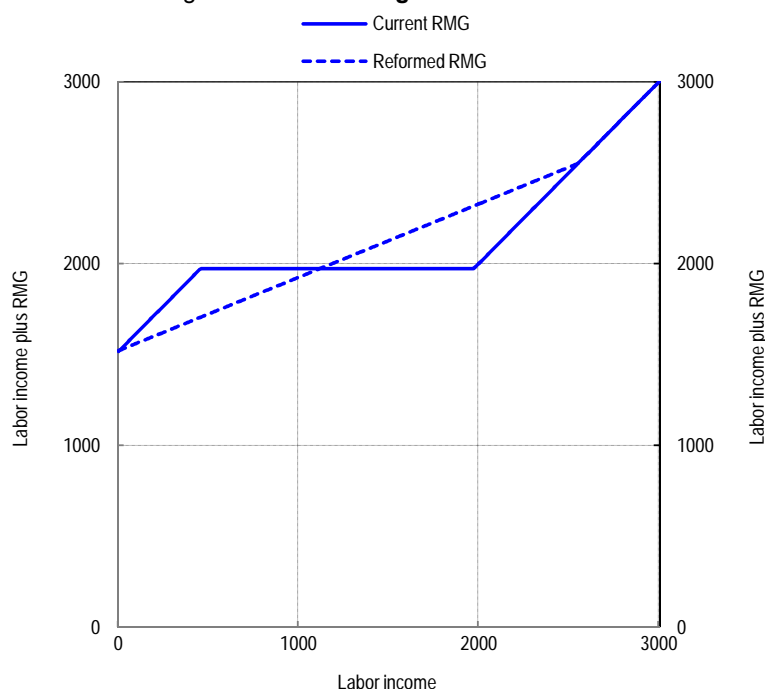
A reform of the RMG could be combined with a simplification of various miscellaneous benefits and reforming active labour market policies (ALMPs) to make the whole system simpler and more efficient in enhancing work incentives and opportunities. A good example of such a general reform is the introduction of the Universal Credit in the United Kingdom that replaces a patchwork of transfers with a more universal benefit while at the same time ensuring that effective marginal tax rates do not deter work.

ALMPs are sizeable in Luxembourg, but there has been "no systematic favourable impact" (Grubb, 2007) and there is too little early intervention before unemployment risks become entrenched, as discussed in the 2010 *Economic Survey of Luxembourg* (OECD, 2010a). The ongoing assessment of ALMPs should be used to scrap inefficient schemes and to further develop good practices. This is important, as many recipient of the RMG can face strong difficulties to compete in the private labour market. For instance, programmes like "Affectation Temporaire Indemnisée" that subsidise firms temporarily employing former RMG recipients can have ambiguous effects: it may prevent firms from hiring those who do not fulfil the criteria, pushing some low skilled workers outside the labour market. Priority could rather be given to other existing programmes that increase employability, such as training programmes. The programme "aide au réemploi", could also be encompassed in the new reform. Employees who accept a new job with a lower wage earn 90% of the previous wage during 4 years, whatever the employer pays 90% or half of the previous wage. There is thus an incentive for firms to pays wages as low as possible to maximise the burden supported by the government. This side effect has to be addressed.

Box 4. **What can be learnt from the introduction of the RSA in France?**

Both the current RMG in Luxembourg and the former *Revenu Minimum d'Insertion* (RMI) in France were characterized by 100% effective marginal tax rates for certain cases. While the optimal marginal tax rate should be set in line with marginal productivity (Bourguignon, 2001), the 100% rate must be too high since it suppresses yields from any relatively small additional amount of work. Marginal tax rates that deter work were sharply reduced when the RMI was replaced by the *Revenu de Solidarité Active* (RSA): the amount of the transfer now fades out smoothly as the income increases, so that the marginal tax rate is 38%.

Such a reform has two effects that are likely to reduce poverty. First, poverty is reduced though a mechanical effect: the working poor add to their market income an in-work benefit. Second, as work rewards more, it can increase the share of beneficiaries who increase their work (or who declare underground activities). However, the behavioral effect has been small at best (Bourguignon, 2011), and was much smaller than the effect of the macroeconomic crisis that happened at the same moment. The complexity of a system that combines two benefits called "RSA socle" and "RSA d'activité", the existence of other means tested benefits that may also discourage work and the weakness of activation policies are explanations of this small behavioral effect.

The income tax adds further disincentive to work for second earners, because it is a progressive tax built on the sum of earnings of a couple. Second earners thus face a higher marginal tax rate. This marginal tax rate further increases with the income of their spouse, albeit it is mitigated by an earned income allowance of €4 500 where both spouses have earned income and are taxed jointly. Kleven, Kreiner, and Saez (2009) find that in some circumstances, having a lower marginal tax rate for second earners (relative to the tax rate they would face if they were a single person) can raise work incentives. This suggests that removing the joint-taxation would further increase labour participation and hence reduce individual labour income inequality.

However, the effect of removing joint taxation on household disposable income is ambiguous. Stay-at-home spouse situations are very diverse. Some of them belong to poor households while others benefit from large transfers within the household, depending on the income of the first earner. Removing the joint taxation can thus increase labour participation for second earners that are poor, but also for those that are better off (the latter would otherwise decide not to work because of the high level of income of the spouse). At a minimum, such a change would reduce within household inequality while boosting activity via a higher labour participation.

Better work incentives are also important for the youngest and the oldest, whose participation rates are low (Figure 15). For younger and older workers, unemployment benefits are particularly generous. Young people can benefit from unemployment benefits 26 weeks after they have completed their education in most cases. These unemployment benefits for the young are poorly targeted, as benefits are granted whatever their parents' income, and hence disregarding intra-family transfers or the fact that they may live at their parents'. For the unemployed older than 55, a longer extension of the benefit period than for other workers is likely to trap this population outside employment.

Figure 15. **Participation rates are low for the youngest and the oldest**
Labour participation rate by age brackets, 2011
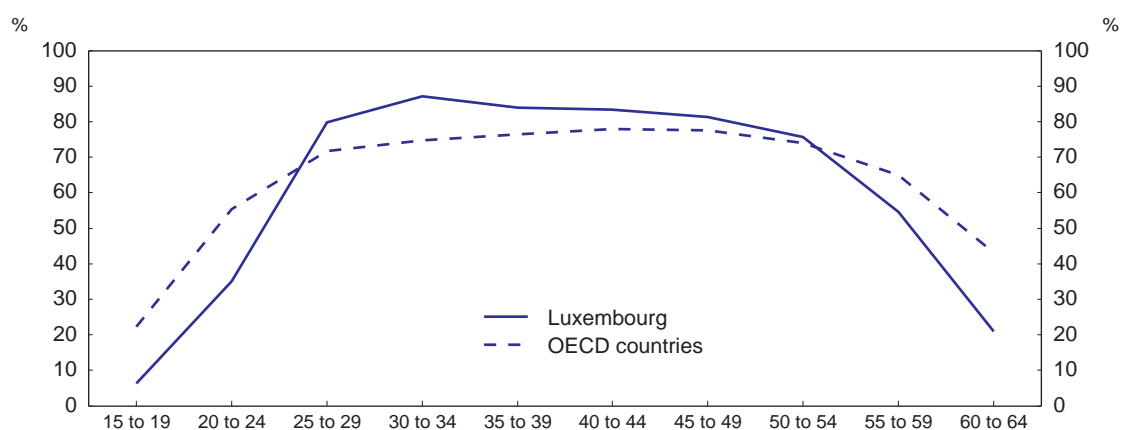
Source: OECD Employment Outlook database.

Incapacity related spending is high (Figure 16), but its size in terms of share of GNI declined recently. This decrease comes from stricter eligibility criteria (OECD, 2009) to better target those who really need it. However, the substitution between unemployment benefits and incapacity benefits is high in Luxembourg, as in most OECD countries (OECD, 2009), highlighting the particular care that is needed to help those who lose these benefits to enter the labour market.

Figure 16. **Incapacity related benefits are high**
Incapacity related benefits as share of GNI (2007)
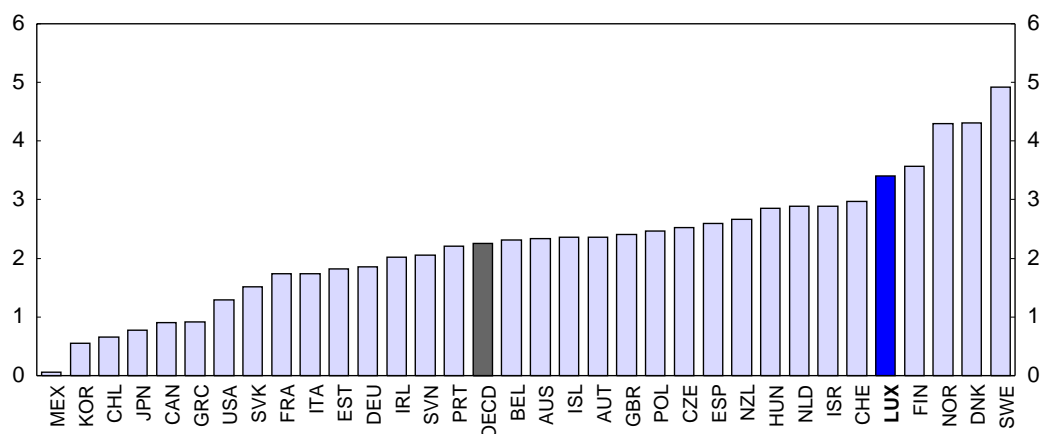

Source: OECD Social Expenditure database.

The underperforming education system does little to address inequality

A well-performing education system improves labour market outcomes, reduces income inequalities, and promotes social cohesion. Luxembourg ranks 34 out of 36 countries in terms of years in education and 29 out of 36 countries in terms of students' skills according to the Better Life Index (OECD, 2011a). Education outcomes are unevenly distributed and about a quarter of students lack basic literacy skills, as measured at the age of 15. Socio-economic inequality among students is one of the highest in the OECD, well-above neighbouring countries and second only to Portugal within Europe (Figure 17, panel A). The existing income disparities are reinforced by the poor labour market outcomes faced by the low-skilled, with three times higher unemployment and about half the earnings of the high skilled.

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Strengthening education outcomes with a particular focus on the most vulnerable groups would improve social cohesion, and promote stronger civic and social engagement. Moreover, higher education levels enhance well-being through higher living standards, better health and more opportunities for social relations (OECD, 2010b).

Parental background and educational performance are strongly linked in Luxembourg (Figure 17, panel B). Indeed, the performance gap faced by students in the bottom socio-economic quarter, compared to those in the top, is equivalent to almost three years of schooling. This gap is one of the highest among the OECD countries (Figure 17, panel C), and it is of particular concern, as Luxembourg has a relatively high share of disadvantaged students, almost twice the rate registered in some neighbouring countries such as Belgium or Germany. As a result, educational persistence across generations is high, only surpassed by a few countries in peripheral Europe, thereby contributing to the rather limited intergenerational social mobility (OECD, 2010c).

Figure 17. **Socio-economic background and education performance**
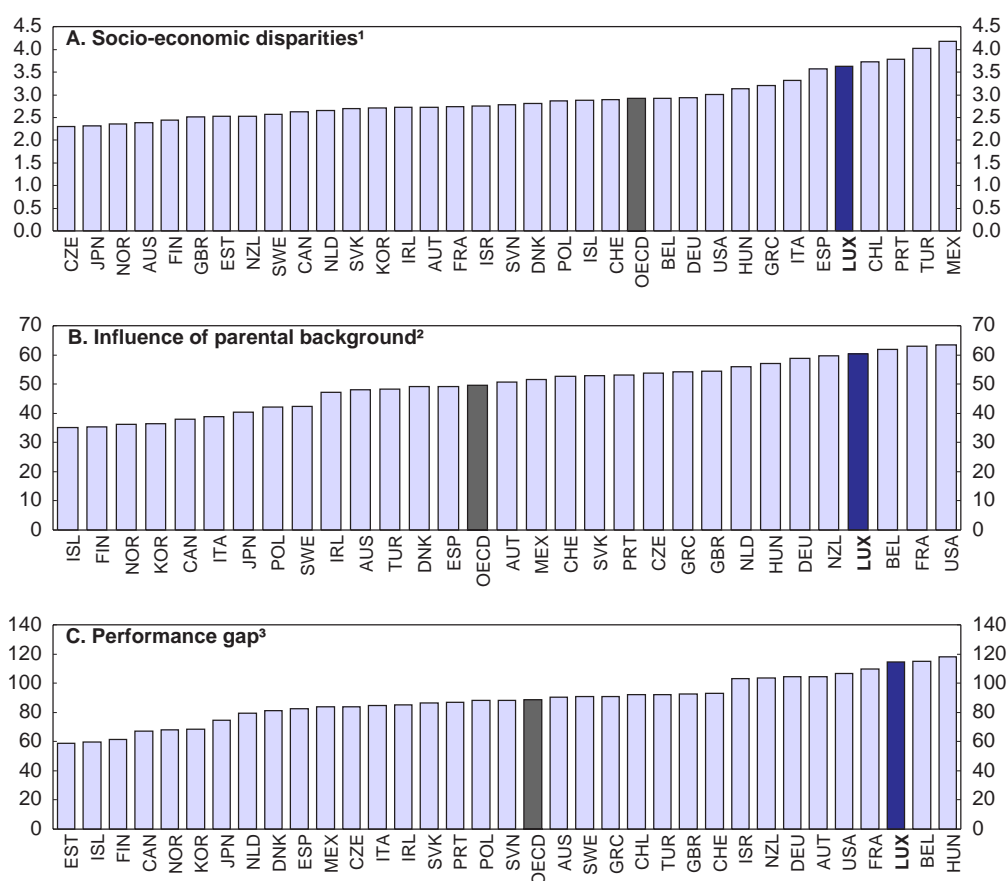
1. Difference between 95th and 5th percentile of the PISA index of economic, social and cultural status (ESCS Index).
2. Relationship between student performance in science and socio-economic background taking cross-country distributional differences into account.
3. Difference in performance on the reading scale by the top and the bottom quartiles of the national quarters of the ESCS index.

Source: OECD (2010), PISA 2009 Results: Overcoming Social Background: Equity in Learning Opportunities and Outcomes (Volume II), Causa, O. and C. Chapuis (2009), Equity in Student Achievement Across OECD Countries: An Investigation of the Role of Policies.

However, a number of countries with similar or higher proportions of disadvantaged students have succeeded in not letting them fall behind, hence achieving a better performance. For example, in Portugal or Poland pupils from the bottom socioeconomic levels perform better than their counterparts in Luxembourg, as indicated by reading scores that are better by the equivalent of an additional year of schooling (Figure 18, panel A). In particular, the education system in Luxembourg exhibits very low levels of resilience, namely the proportion of disadvantaged students that performs better than predicted by their socio-economic background (Figure 1.18, panel B).

Figure 18. **Disadvantaged students are particularly vulnerable in Luxembourg**
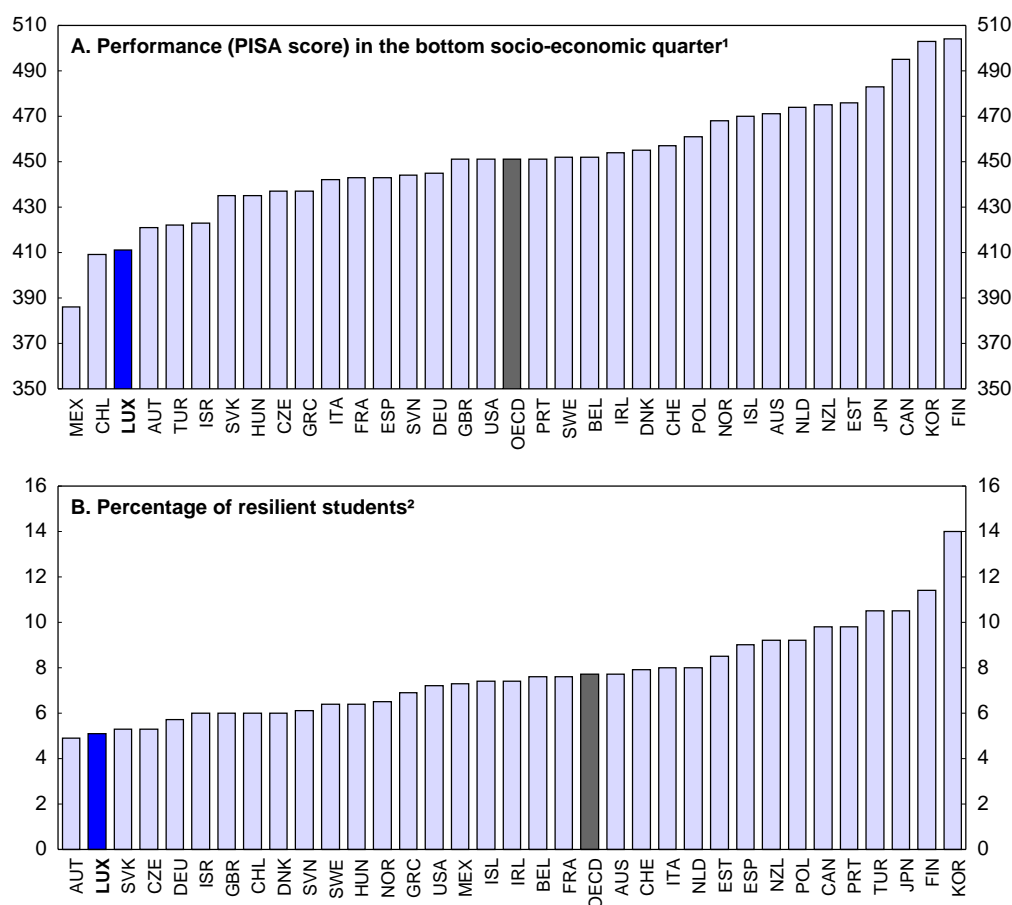
1. Performance refers to the reading scale. Socio-economic background is measured through the PISA index of economic, social and cultural status (ESCS).
2. A student is classified as resilient if he or she is in the bottom quarter of the ESCS in the country of assessment and performs in the top quarter of students from all countries after accounting for socio-economic background.
Source: OECD (2010), PISA 2009 Results: Overcoming Social Background: Equity in Learning Opportunities and Outcomes (Volume II).

The large immigrant community tends to fall behind

Performance is influenced by the heterogeneity of the population. Students with an immigrant background account for over 40% of pupils. Their proportion declines as the educational level advances: the share stands at around 50% in pre-primary and primary education, but falls to below 20% in the general secondary track, which leads to tertiary education. Students with immigrant backgrounds have a poorer

performance than natives, a gap that is wide by international standards. The results are largely explained by student's socio-economic characteristics. Foreigners are 60% more likely than natives to hold at best lower secondary education, and their median income is half of that enjoyed by Luxembourgers. Indeed, controlling for socio-economic background reduces the performance disparities between immigrant and native students, pushing the score difference below OECD levels (OECD, 2012a).

Mother tongue and country of origin are important determinants of immigrant student's performance, especially for newer entrants. Immigrants of French origin perform better, as they tend to enjoy a higher socio-economic status, and French is the instruction language in general secondary education. By contrast, students from former Yugoslavia, who are many in Luxembourg, face stronger headwinds, as they need both to overcome the language barrier and to adapt to higher educational standards. The average difference in performance with respect to Luxembourg amounts to the equivalent of one school year. However, alternative host countries for students from former Yugoslavia, such as Austria, Denmark, Germany or Switzerland with potentially fewer languages of instruction, succeed better to reduce these headwinds. In Luxembourg, institutional arrangements to facilitate adaptation should be improved. For instance Luxembourg should increase the share of immigrant students who attend language remedial classes, which is low by international standards (OECD, 2012a). The level of language command is a key issue, as there is a rather large difference in learning achievements between native students whose mother tongue is the language of instruction, and first-generation immigrants who speak a different language at home. This finding is quite robust: even when considering children with similar socio-economic backgrounds, the learning achievements depend on the mother tongue.

The trilingual system does not provide enough language support for vulnerable groups

The importance of mother tongue is not surprising, as Luxembourg is a trilingual country, where the instruction language depends on the educational level. Luxembourgish is taught in pre-primary school, where language support is very scarce (Ministre de l'Éducation nationale et de la Formation professionnelle, 2012a). The language of instruction in primary education is German, in which almost one third of immigrant students have limited proficiency. Although less than 5% of them go through a preparatory phase, they get full immersion with two hours per week of language support, which increases to three to nine hours per week in lower secondary school. In upper-secondary school those students enrolled in vocational training continue using German and French is used in the general secondary track. Despite the complexity of the system, the share of first-generation immigrant students attending language remedial classes is one of the lowest in the OECD, 6% compared to the average 16% (OECD, 2012a). Better language skills could not only raise education outcomes, but also have spill-over effects as it would enhance full participation in society and avoid discrimination, also providing better opportunities to access the labour market.

The educational reform approved in February 2009 includes measures to improve language support. In the early and pre-school level classes that have a high proportion of Portuguese children, who represent over half of foreign students, a Portuguese-speaking person may be called upon to collaborate in the class on a regular basis for a certain number of hours per week. Immigrant pupils who speak neither French nor German are not granted help in the general secondary education, which is reserved to pupils who have very good knowledge of both. However, they do get support in technical secondary education, as integration classes exist for students who have little or no proficiency of the languages, but who have acquired a good academic level in their native country. They receive language support in French and German, and may get assistance from intercultural mediators. While similar measures would be welcomed in general secondary education, the project of reforming secondary education is still at a preliminary stage.

Remedial classes are too few

In the same vein, parental educational attainment is related to their childrens' learning outcomes. In Luxembourg, many immigrant mothers hold significantly less than compulsory education levels, with more than 30% having at best primary education, which is very low in international comparison. This is important as the link between performance and maternal education is especially strong at low levels of education (Figure 19). Targeted support should be reinforced for immigrant students, as parental support may not suffice given the additional challenges they face to adapt to a new educational system and possibly to an unfamiliar language of instruction.

Figure 19. **Average reading performance across mother's education**
Score difference with respect to the average of each group
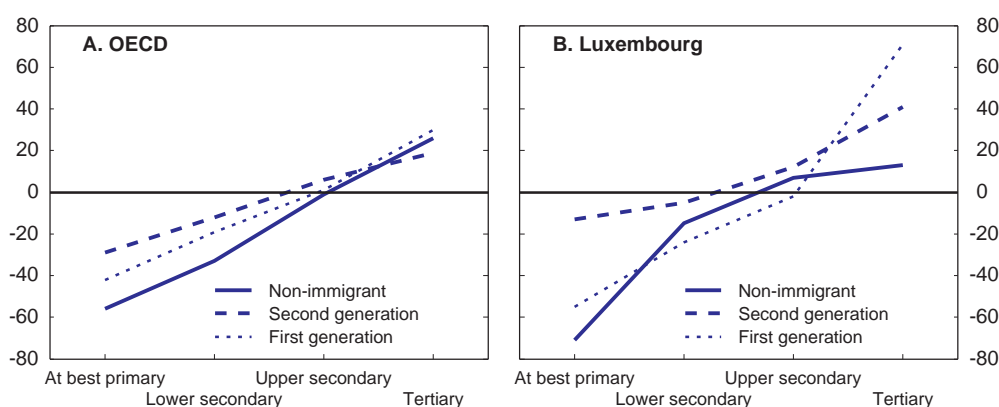
Source: OECD, Untapped skills: realising the potential of immigrant students (2012).

The new primary education reform introduced support courses for students with academic difficulties. These support courses represent 5% of the total number of hours taught, and teachers have room for decisions on their modalities. While such discretion is welcome to match courses with local needs, sufficient monitoring should be ensured so as to promote good practices in terms of content, group size, duration and time during the day.

Another policy measure that helps to bridge the performance gap between native and immigrant students is early education, which not only improves overall learning performance, but also yields higher benefits for immigrant students as it increases exposure to the language of instruction. Moreover, evidence suggests that early development of competencies is likely to make future investment in skills more effective (OECD 2010b, Chetty *et al.,* 2011). In Luxembourg compulsory education starts at the age of 4, which is rather early by international standards. Children aged 3 may attend early childhood education, whose enrolment rates have been rising steadily to 80%. This has greatly benefited from the recent educational reform, which obliges municipalities to offer early education, although attendance remains non-mandatory for children.

For children aged under 3, crèches are available upon payment, and fees usually depend on parental income. Additionally, tax rebates may also be granted, including for costs pertaining to childcare in crèches, day care centres and recognised collective nurseries. A desirable side effect of these schemes is that they are likely to reduce the gender gap by fostering female participation and reducing the occurrence or length of career breaks.

Resources are not targeted to more socio-economically disadvantaged school

Education spending per student stands at around €15 000 per student, the highest in the OECD and more than double the average. However, socio-economically advantaged schools tend to have more educational resources than schools with more students from disadvantaged backgrounds. In fact, there are strong relationships between schools' socio-economic profile and resources, as measured in terms of teacher shortages, extracurricular activities and teachers with university level degree (Figure 20). The performance of schools in more advantaged areas tends to be better (Figure 21).

Fairer access to educational resources should be ensured, regardless of the student's individual characteristics. The 2009 reform of pre-primary and primary school to tackle these issues by allocating funds to municipalities according to a set of socio-economic indicators, with the allocation designed to favour disadvantaged students. This measure is being introduced progressively over a 10-year period, starting in September 2010. This is a welcome initiative, and should be further extended to cover secondary education.

Moreover, teacher shortages could be alleviated by loosening the language command requirements in the recruitment of teachers. Fluency in the three official languages is required, but most of the otherwise well qualified foreign candidates cannot fulfil this requirement. This can create recruitment pressures as the pool of teachers from Luxembourg is relatively small. For instance, there were 240 vacancies for primary education in 2012, compared to 116 graduates from the Bachelor's in Educational Sciences (the teachers' training degree) in 2011. Accepting teachers who do not command the three languages in fields for which this is not needed in practice would help to meet hiring needs while keeping the high recruitment standards. Furthermore, there may be a positive side effect for immigrant pupils who are not trilingual: they would find it easier to identify themselves with their teachers.

Figure 20. **Socio-economically advantaged students attend schools with more resources**
Correlation between the schools' average socio-economic background and selected indicators
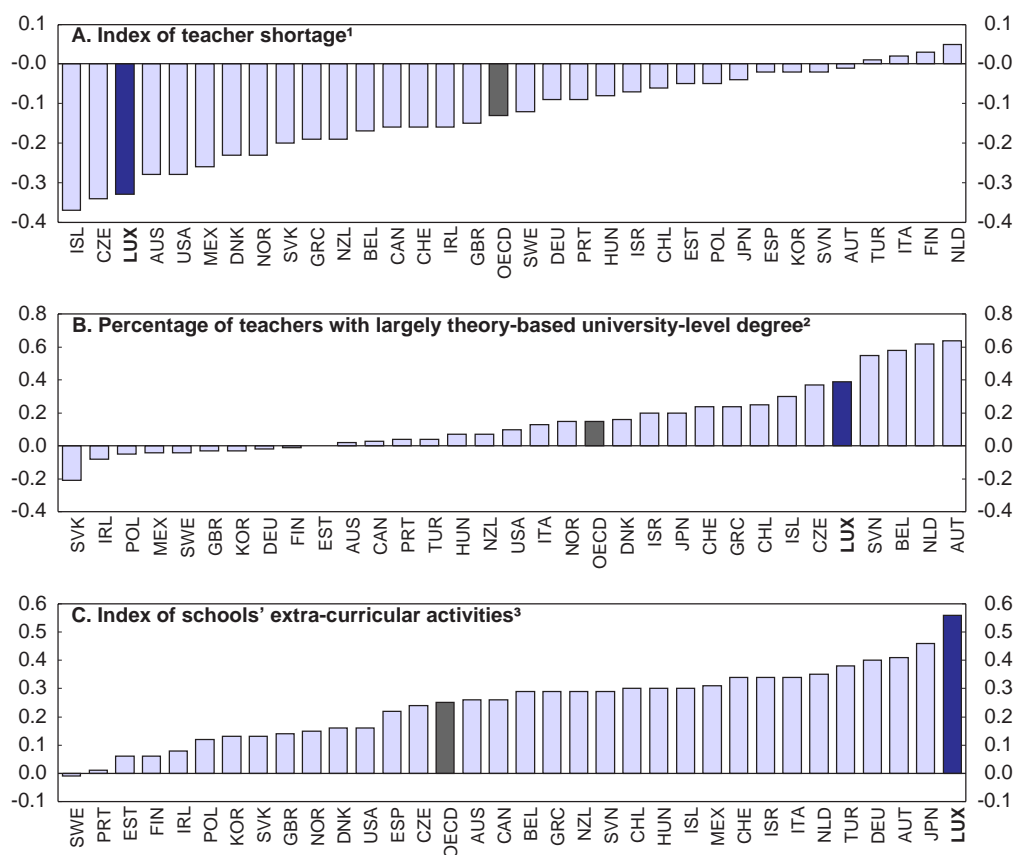
1. Derived from four items measuring school principals' perceptions of potential factors hindering instruction at their school. Higher values indicate higher teacher shortage at a school.
2. Among all full-time teachers. Theory-based university-level degree refers to ISCED 5A degrees.
3. Higher values indicate more activities.

Source: OECD (2010), PISA 2009 Results: Overcoming Social Background: Equity in Learning Opportunities and Outcomes (Volume II).

Figure 21. **The performance of schools in more advantaged areas tends to be better[1]**
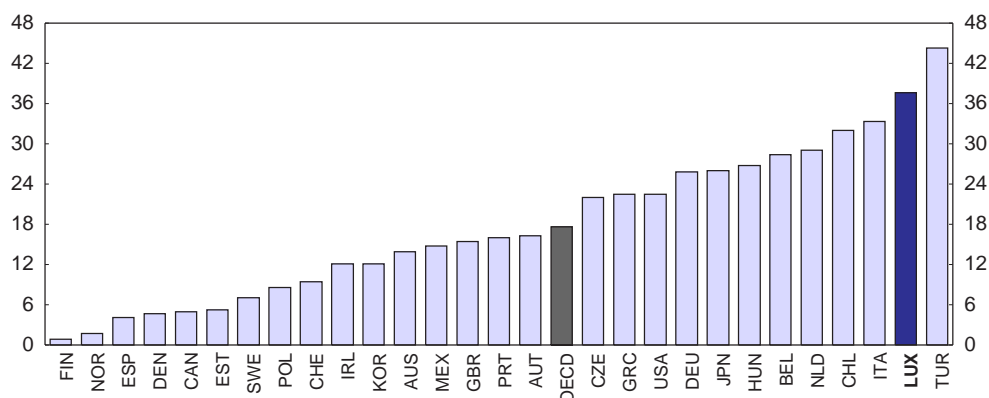

1.   Percentage of the learning variance explained by the correlation between resources on one side and the socio-economic and demographic background of students and schools on the other side.
Source: OECD, PISA 2009 Results: What makes a school successful?

School choice can contribute to mitigate or widen socio-economic differences in students' intakes between schools. At the primary level, assignment to schools is based on geographical criteria. One way to promote a better social mix and balance the social composition of school neighborhoods is through urban planning policies that encourage greater diversity of housing types by price range and tenure. This matters for performance, as attendance in a disadvantaged school has a strong adverse impact on reading performance (OECD, 2012b). From secondary education onwards, Luxembourg offers school choice. Policies should be implemented to ensure that disadvantaged students are attractive to high quality schools. This includes providing financial incentives, and increasing the information available to all parents about schools, specifically to those who send their children to low performing schools.

Early tracking exacerbates inequality

Tracking into different educational programmes takes place at the age of 12, which is considered as early by OECD standards (Figure 22). Early selection into different institutional tracks is associated with larger socio-economic inequalities in learning opportunities without being associated with better overall performance. Students from disadvantaged backgrounds are more likely to be assigned to the least academically oriented tracks. There is empirical evidence that early tracking may have a negative impact on participation in higher education, even when taking into account the selection bias (*e.g.* van Elk *et al.,* 2009). In fact, Luxembourg is the OECD country where school policies for selecting and grouping students and schools' socio-economic and demographic background have the greatest impact in explaining performance between schools (OECD, 2010d). To improve equity, tracking should be delayed to a later age. The negative effects of selection can be lessened by increasing flexibility to change tracks and providing high quality instruction and a challenging curriculum in all the different groups (OECD, 2012b).

Figure 22. **First age of selection in the education system**
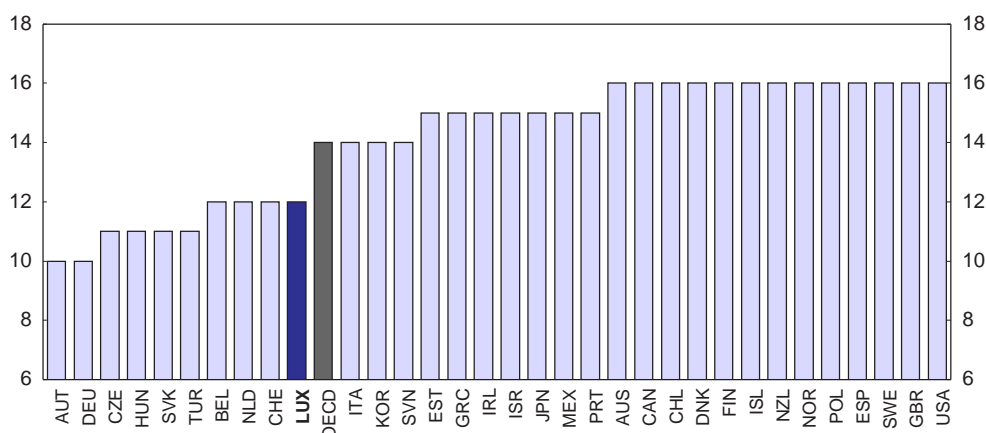
Source: OECD (2010), PISA 2009 Results: What Makes a School Successful? - Resources, Policies and Practices (Volume IV) and Ministry of National Education and Vocational Training of Luxembourg.

Low graduation rates affect more the disadvantaged

The educational system also has high repetition rates, which delays the age of graduation and may discourage some students from completing their studies. Luxembourg registers one of the lowest proportion of students who complete their education in the stipulated time (OECD, 2012c), and 30% of graduates need two additional years to complete their studies (Figure 23, panel A). The 2009 educational reform aims at reducing repetition rates by evaluating the competences acquired by students every two years (learning cycle), rather than annually (academic year). The grading system has changed and is now based on this competence assessment. There is some evidence that repetition rates in primary education have begun to decrease since the implementation of the reform (MENFP, 2012c). This is a welcomed initiative and should be extended to secondary education.

The longer than expected time needed to complete a programme may also discourage students and feed into low graduation rates, which are well below the OECD average (Figure 23, Panel B). There are differences across educational tracks: in general secondary graduation rates are above the OECD average, but in vocational secondary, which concentrates a high share of immigrants, rates are sub-par. Moreover, the percentage of students that do not succeed in obtaining a diploma is twice as high for foreigners as for Luxembourgers (MENFP, 2012c).

Figure 23. **Time to complete upper secondary programmes and graduation rates**
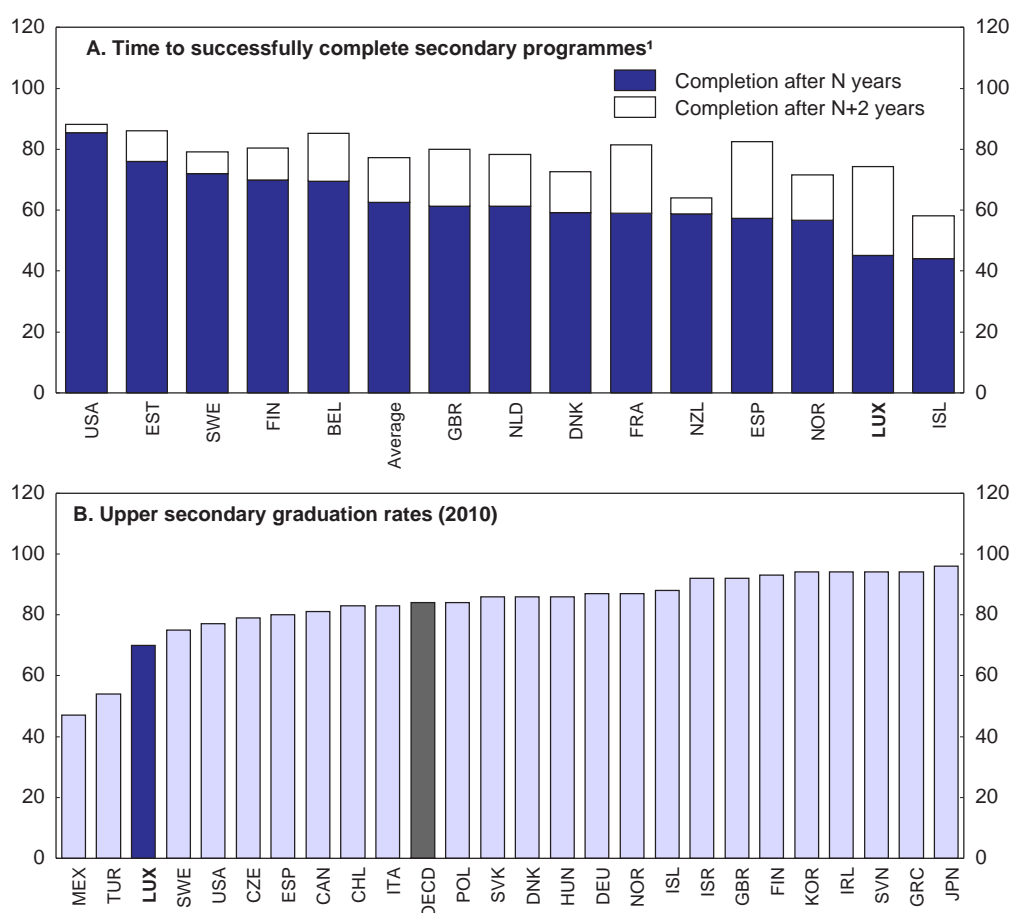
1. N represents the theoretical duration of the programme. For France, N+2 refers to N+3.
Source: OECD, Education at a Glance 2012.

Uneven educational outcomes also affect transition to the labour market

Although Luxembourg features one of the lowest unemployment rates in the OECD, its relative performance is poorer in terms of youth unemployment. The sizeable differential between youth and overall unemployment may be related to the relatively high share of school drop-outs, as one in six students on average drops out of the education system before finishing upper secondary (Figure 24). Leaving school this early means that students have acquired low skills, which will expose them to higher risk of unemployment and lower earnings. Moreover, young people who struggle to enter the labour force after leaving school can face negative long-term consequences on a number of other outcomes, including happiness, job satisfaction and health. In Luxembourg the proportion of young people most at risk (low-educated who are not in employment, education or training) exceeds the OECD average, and immigrants are over-represented among this group (OECD, 2012d). It should be ensured that school drop-outs remain engaged in, or re-connect with, education through the completion of an upper secondary diploma or its equivalent, preferably with an on-the-job training.

Figure 24. **Percentage-point difference between youth and overall unemployment rates[1]**
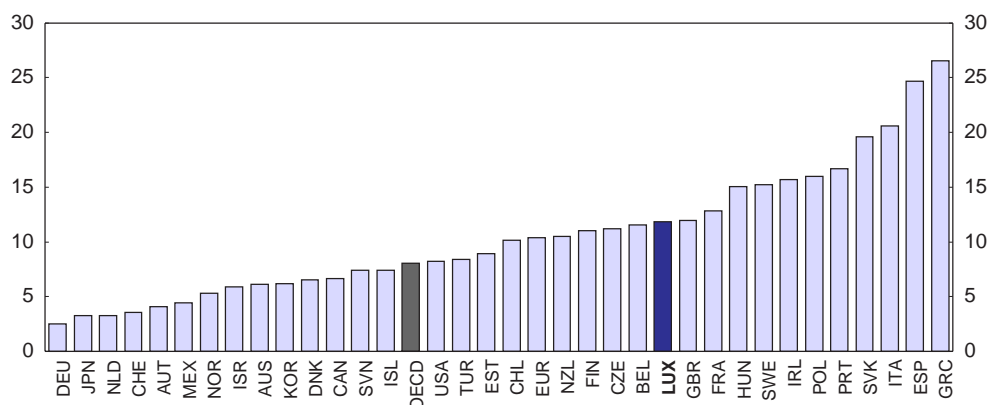
1. Youth refers to persons aged between 15 and 24 years old.
Source: OECD, Labour Force Statistics database.

Box 5. **Recommendations on social inclusion and inequality**

- Consider greater targeting of social transfers to increase their effectiveness in reducing relative poverty, while limiting their overall cost, and tapering benefits to minimise the impact on work incentives. These measures should aim particularly to help single parent families.

- Improve the design of the minimum income guarantee (RMG) to avoid situations in which additional work does not provide additional income, while enhancing activation policies and training.

- Eliminate tax expenditures that are inefficient and regressive, such as tax rebates for mortgage payments and capital income.

- Social housing support should shift away from the construction of new subsidised housing towards a system of adequate rent support for low income households in private accommodation. Rents should be higher in social housing for tenants whose income is above social minima.

- Reform the financing of higher education to improve its distributional impact, through a system of fees supported by a means-tested contingent loan system and grants to needy students.

- Improve targeting of education resources to schools with disadvantaged students. Increase resources available for language support and remedial classes.

- Push the planned reform of secondary education, aiming at reducing grade repetition, delaying institutional tracking from the age of 12 until 16, strengthening the autonomy and local management capacity of schools, and improving the monitoring of education quality.

- Increase enrolment in child care and early childhood education and target support at children from low-income and/or foreign-language families.

- Ensure that disadvantaged students are attractive to high quality schools. This includes providing financial incentives, and increasing the information available to all parents about schools.

- Enhance quality of teaching by providing additional remuneration for higher qualifications, rewards for outstanding performance in teaching, and allowing the recruitment of teachers who do not master the three official languages for those fields where this is not needed in practice.

- To facilitate the transition from school to work, ensure that youth leave education with recognised qualifications. Increase opportunities to combine study and work.

Bibliography

Bassanini, A. and R. Duval (2006), "Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions", *OECD Economics Department Working Papers*, No. 486, OECD publishing, Paris.

Banque Centrale du Luxembourg (BCL) (2012), *Bulletin BCL 2012,* No. 3, September.

Berg, Andrew G. and Jonathan D. Ostry (2011), "Inequality and Unsustainable Growth: Two Sides of the Same Coin?", *IMF Discussion Note*, SDN/11/08.

Bourguignon, F. (2001), "Revenu minimum et redistribution optimale des revenus: fondements théoriques", *Economie et Statistique,* No. 346-347, pp. 187-204.

Bourguignon, F. (2011), Rapport final, Comité national d'évaluation du rSa.

Brosius, J. and M. Zanardelli (2009), "How Does the Labour Market in Luxembourg Absorb the Unemployed?", mimeo presented at Technical seminar on labour market issues at the Ministry of the Economy and Foreign Trade, 18 November.

Carneiro, P. and James J. Heckman (2003), "Human Capital Policy" in Heckman, James J. and A. Krueger, eds. Inequality in America: What Role for Human Capital Policy?, *MIT Press*, pp. 77–240.

Causa, O. and C. Chapuis (2009), "Equity in Student Achievement across OECD Countries: An Investigation of the Role of Policies", OECD Economics Department Working Papers, No. 708.

Causa, O., S. Dantan, and Å. Johansson (2009), "Intergenerational Social Mobility in European OECD Countries", *OECD Economics Department Working Papers*, No. 709, OECD publishing, Paris.

Causa, O. and Å. Johansson (2009), "Intergenerational Social Mobility", *OECD Economics Department Working Papers*, No. 707, OECD publishing, Paris.

Checchi, D. and C. Garcia-Peñalosa (2008), "Labour Market Institutions and Income Inequality", *Economic Policy*, Vol. 23, No. 56, pp. 601-649.

Chetty, R. *et al.* (2011), "How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star", *The Quarterly Journal of Economics*, Oxford University Press, Vol. 126(4), pp. 1593-1660.

Cohen, A., R. Dehejia and D. Romanov (2007), "Do Financial Incentives Affect Fertility?", *NBER Working Papers*, No. 13700.

van Elk, R., M. van der Steeg and D. Webbink (2009), "The effect of early tracking on participation in higher education", CPB Document 182, CPB Netherlands Bureau for Economic Policy Analysis.

Eurydice (2010), "Organisation of the education system in Luxembourg, 2009/10", European Commission.

Fack G. (2005), "Pourquoi les ménages à bas revenus paient-ils des loyers de plus en plus élevés, L'incidence des aides au logement en France (1973-2002)", *Economie et statistiques*, nº 381-382.

Fournier, J.M. and I. Koske (2012), "Less income inequality and more growth – are they compatible? Part 7. The drivers of labour earnings inequality – An analysis based on conditional and unconditional quantile regressions", *OECD Economics Department Working Papers*, No. 930, OECD publishing, Paris.

Fredriksen, K. (2012), "Less income inequality and more growth – are they compatible? Part 6. The distribution of wealth", *OECD Economics Department Working Papers*, No. 929, OECD publishing, Paris.

Gauthier, A. H. and J. Hatzius (1997), "Family Benefits and Fertility: An Econometric Analysis," *Population Studies*, Vol. 51, No. 3, pp. 295–306.

Grubb, D. (2007), "Audit du service public de l'emploi au Luxembourg", *OECD Social, Employment and Migration Working Papers*, No. 59, OECD publishing, Paris.

Heller, D.E. (1999), "The Effects of Tuition and State Financial Aid on Public College Enrollment", *Review of Higher Education*, Vol. 23, No. 1, pp. 65-89.

Hoeller, P. (2012), "Less income inequality and more growth – are they compatible? Part 4. Top incomes", *OECD Economics Department Working Papers*, No. 928, OECD publishing, Paris.

Hoeller, P., I. Joumard, M. Pisu and D. Bloch (2012), "Less income inequality and more growth – are they compatible? Part 1. Mapping income inequality across the OECD", *OECD Economics Department Working Papers*, No. 924, OECD publishing, Paris.

Immervoll, H., J. Kleven, C. T. Kreiner and E. Saez (2005), "Welfare Reform in European Countries: A Microsimulation Analysis", *OECD Social, Employment and Migration Working Papers*, No. 28, OECD publishing, Paris.

Immervoll, H. (2009), An evaluation of the tax-transfer treatment of married couples in European countries, *IZA Discussion Papers*, No. 3965, Institute for the Study of Labor (IZA).

Joumard, I., M. Pisu and D. Bloch (2012), "Less income inequality and more growth – are they compatible? Part 3. Income redistribution via taxes and transfers across OECD countries", *OECD Economics Department Working Papers*, No. 926, OECD publishing, Paris.

Kleven, H.J., C.T. Kreiner and E. Saez (2009), "The Optimal Income Taxation of Couples", *Econometrica*. Vol. 77, No. 2, pp. 537–560, March.

Koske, I., J.-M. Fournier and I. Wanner (2012), "Less income inequality and more growth – are they compatible? Part 2. The distribution of labour income", *OECD Economics Department Working Papers*, No. 924, OECD publishing, Paris.

Mathä, T., Y., A. Porpiglia and M. Ziegelmeyer (2012), "The Luxembourg Household Finance and Consumption Survey (LU-HFCS): Introduction and Results", May.

Ministre de l'Éducation Nationale et de la Formation Professionnelle (MENFP) (2011), "Diplômes et certifications, Anne scolaire 2010/2011."

MENFP (2012a), "Chiffres Clés de l'Éducation nationale".

MENFP (2012b), "Rapport d'activité 2011".

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OECD (2008), Tertiary Education for the Knowledge Society: Vol. 1 and Vol. 2, OECD publishing, Paris.

OECD (2009), Sickness, Disability And Work: Keeping On Track In The Economic Down Turn, *Background Paper*.

OECD (2010a), *OECD Economic Surveys: Luxembourg*, OECD publishing, Paris.

OECD (2010b), *Improving Health and Social Cohesion through Education*, Educational Research and Innovation, OECD publishing, Paris.

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OECD (2010d), *PISA 2009 Results: What Makes a School Successful? – Resources, Policies and Practices,* (Volume IV), OECD publishing, Paris.

OECD (2011a), *How's Life? Measuring Well-Being*, OECD publishing, Paris.

OECD (2011b), *Divided we stand*, OECD Publishing, Paris.

OECD (2011c), *Pensions a Glance 2011: Retirement-income Systems in OECD and G20 Countries,* OECD publishing, Paris.

OECD (2012a), Untapped skills: realising the potential of immigrant students. OECD publishing, Paris.

OECD (2012b), *Equity and Quality in Education: Supporting Disadvantaged Students and Schools*, OECD publishing, Paris.

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OECD (2012d), *Better Skills, Better Jobs, Better Lives: A Strategic Approach to Skills Policies*, OECD publishing, Paris.

Pisu, M. (2012), "Less income inequality and more growth – are they compatible? Part 5. Poverty in OECD countries", *OECD Economics Department Working Papers*, No. 928, OECD publishing, Paris.

Quintini, G. (2011), "Right for the Job: Over-Qualified or Under-Skilled?", *OECD Social, Employment and Migration Working Papers*, No. 120, OECD publishing, Paris.

Runciman, W. G. (1996), "Relative Deprivation and Social Justice", London: Routledge.

Service National d'Action Sociale (SNAS) (2012), "Rapport d'activité 2011".

Smeeding, T. (1997), "Financial Poverty in Developed Countries: Evidence from the Luxembourg Income Study", Human Development Paper 1997: Poverty and Human Development, New York: UNDP.

Institut national de la statistique et des études économiques (STATEC) (2011), Cahier Économique, Rapport Travail et Cohésion Sociale 2011.

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