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Residential Mobility and Public Policy in OECD Countries

by

Aida Caldera Sánchez and Dan Andrews*

Residential mobility is closely tied to the functioning of housing markets and has important implications for labour mobility and the efficient allocation of resources across the economy. This paper analyses patterns of residential mobility across OECD countries and the role of housing policies in enhancing or hampering residential mobility. Based on cross-sectional household data for 25 countries, the results suggest that differences in residential mobility across countries are partially related to differences in public policies. After controlling for household and country-specific characteristics, residential mobility is higher in countries with lower transaction costs, more responsive housing supply, lower rent controls and tenant protection. Residential mobility tends also to be higher in environments with greater access to credit, suggesting that financial deregulation – by lowering borrowing costs and facilitating access to mortgage finance – facilitates mobility. This cross-country evidence is supported by city and state-level evidence for the United States.

JEL classification: R23, R31, R21, R38, H20.

Keywords: Housing markets, residential mobility, transaction costs, rental market regulations

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This paper analyses patterns of residential mobility across OECD countries and the role of housing policies in enhancing or hampering residential mobility. Residential mobility is closely tied to the functioning of housing markets and has important implications for labour mobility and the efficient allocation of resources across the economy. When institutional constraints or other barriers impede residential mobility, the allocating role of housing markets is disrupted. Countries with low rates of residential mobility may suffer from higher housing-price volatility (Englund and Ioannides, 1993) if, due to high transaction costs, households cannot immediately react to price changes by changing their residence. Low rates of residential mobility can be an obstacle to labour adjustment, making labour markets less efficient and, therefore, can adversely affect overall economic performance (Hardman and Ioannides, 1999; Oswald, 1996). A low degree of residential mobility also has other economic costs since it reduces the speed of an economy's adjustment to shocks (Blanchard and Katz, 1992). On the other hand, excessive residential mobility may have adverse implications for social stability by depreciating local social capital, such as for instance relationships and social networks (David *et al.* 2011) or for the educational performance of children if forced to change schools too often (Ersing *et al.*, 2009).

Nearly all governments intervene in housing markets, primarily for social and redistribution reasons (Andrews *et al.* 2011). Policy interventions include fiscal measures such as taxes and direct provision of social housing, as well as various regulations aimed at influencing housing market outcomes in terms of prices, rents, quantity, quality and allocation of dwellings. Despite housing policy interventions being widespread in most OECD countries, little cross-country, comparable information exists measuring the extent of such policies. This paper exploits newly-constructed, cross-country comparable indicators on key structural features of OECD housing markets, including transaction costs, rental regulations, tenant protection arrangements and the responsiveness of housing supply, to investigate to what extent such features affect residential mobility across OECD countries.¹

Results suggest that residential mobility tends to be relatively high in the Nordic countries, Australia and the United States, while it is much lower in eastern and southern European countries. These differences in residential mobility across countries are associated with differences in government intervention. After controlling for household and country-specific characteristics, residential mobility is higher in countries with lower transaction costs in buying and selling a property, particularly for younger households. It is also higher in countries with a more responsive housing supply. Higher rent controls and greater security of tenure are associated with lower residential mobility. This suggests that loosening rental market regulations may increase residential mobility, particularly in countries where rent controls are high and cover a large segment of the rental market, such as the Netherlands and Sweden. A transition towards a system that strikes a balance between tenants' and landlords' bargaining power and regularly updates rents in line with market developments is likely to encourage mobility.

Residential mobility is also higher in countries with greater access to credit. Evidence suggests that higher volumes of private credit to GDP in the economy and lower down-payment constraints are associated with higher residential mobility. This implies that financial deregulation can ease credit constraints by lowering borrowing costs and promoting access to housing finance to a wider set of the population, thereby increasing residential mobility. The evidence further suggests that younger households benefit more from greater access to credit in terms of mobility. City-level evidence for the United States complements the cross-country findings suggesting that mobility is higher in cities with less restrictive land-use regulation and rent controls and where there is more competition in banking and, thus, possibly greater access to credit. The recent experience in the United States, however, highlights the potential risks that very high leverage poses to mobility. To the extent that the city-level approach is not affected by unobserved cross-country differences which may be correlated with both mobility patterns and housing policies and it controls for regional differences using region fixed effects, it further strengthens the conclusions drawn from the cross-country analysis.

The remainder of the article is organised as follows. Section 1 presents a conceptual framework for understanding which factors weigh on households' residential mobility decisions, while Section 2 presents the empirical framework that will be used in the analysis. Section 3 describes the data used in the empirical analysis, paying particular attention to the description of the novel indicators measuring structural features of housing markets in the OECD. Finally, Sections 4 and 5 present the empirical results and assess the improvements in residential mobility associated with different policy reforms.

1. A framework for understanding the factors influencing residential mobility

There is a combination of microeconomic and macroeconomic reasons why people move that vary depending on the time period and household characteristics. Household attributes, households' course of life and job career patterns determine the propensity to move and the choice of dwelling (Dieleman, 2001). In addition, household mobility is strongly related to housing-market conditions and economic circumstances at the local and national level.

Economic theory predicts that the decision to move will depend on the fixed costs of moving, compared with the net present value of the gains in the alternative location (e.g. Sjaastad, 1962; Mincer, 1978; Bartel, 1979). Following Bartel (1979), in a discrete choice model, the household decision to move is determined by the discounted net return from moving at time t . If this return is positive, then the household will move:

$$Pr_t = f(G_t) \quad (1)$$

where Pr_t is the probability that the individual moves at time t and G_t are the discounted net returns from moving:

$$G_t = Y_t^* - Y_t - C_t \quad (2)$$

with Y_t^* the present value of the expected real income stream if the individual moves at t , Y_t is the present value of the expected real income stream in the current location at time t , and C_t are the costs of moving. The costs of moving can be thought of being composed of pecuniary and non-pecuniary costs (Sjaastad, 1962). Pecuniary costs include the out-of-pocket expenditure involved in moving, such as searching for a new dwelling and a job in the new location and the transaction costs involved in the process of moving. Non-pecuniary costs include foregone earnings and the costs of changing one's environment,

such as the costs of uprooting school-age children or of giving up the returns on location-specific investments. If $G_t > 0$, the individual will migrate.

Mobility studies condition the decision to move on a household's characteristics influencing the gains/costs of moving. The decision to move has been shown to be closely tied to events in a person's life, such as family formation, dissolution and, in particular, job changes (e.g. Dieleman, 2001). Earlier research has shown that changing jobs over a long distance naturally requires a residential move (e.g. Clark and Withers, 1999) and that the decision to change jobs is closely tied to moving decisions (e.g. Bartel, 1979). In this sense, household characteristics influencing potential earnings in a different location, such as education, influence the (discounted net) returns from moving (G_t). For instance, education is likely to have a positive effect on the probability of moving since more highly-educated individuals tend to have better information about non-local job opportunities and, thus, may be more adaptable to change (Bartel, 1979).

Other household characteristics, such as family size, marital status and age, also influence the decision to move. For example, households with more than one member in the labour force should have higher costs of moving than independent households comprising a single person (e.g. Bartel, 1979; Mincer, 1978). Similarly, households with school-age children should have lower net returns from migration because of the costs of uprooting school-age children. In the same vein, younger households are most likely to move because they have fewer location-specific investments that tie them down to a location and have longer time horizons in which to amortise the costs of moving; therefore, relatively small gains in earnings may make them move.

Major elements of the housing bundle, such as its price, type of tenure or location, are also critical to the mobility decision (e.g. Dieleman, 2001). House prices and rents, as long as they affect the cost of living, will influence the household's decision to move. Homeowners tend to have longer residential spells than renters and much lower mobility rates (e.g. Tatsimarios, 2009). One explanation is that homeowners face higher search and transaction costs. This means that they will tend to spend relatively longer spells in their residence to spread such costs over a longer time period (e.g. Coulson and Fisher, 2009). The distance from work of the dwelling place or the quality of services close to the dwelling may further influence mobility decisions. For instance, parents may move to live closer to a good school (Fack and Green, 2010).

The matching of households and dwellings is not only determined by households' attributes or the bundle of housing services that each dwelling represents. Household reallocation is also strongly linked to housing-market developments and influenced therefore by government policies that shape housing market outcomes. Housing policy interventions, such as taxation, can influence directly the opportunity costs of moving. For instance, stamp duties and registration taxes are typical transaction costs in buying and selling a property, together with real estate agent fees and legal fees, which are also influenced by government regulations, and can thus weigh on mobility rates. Many countries tax favourably owner occupancy relative to renting or buy-to-let, influencing the opportunity cost of housing investment. This favourable treatment of owner occupation may reduce residential mobility by tilting housing consumption towards owner occupancy away from renting and reducing turnover in the rental market. Many countries also have a range of controls and regulations in rental markets to address potential market failures, such as asymmetry of information between landlords and tenants. Rental regulations

include rent controls, rules concerning the duration and termination of contracts and the reasons to evict a tenant. Although these regulations are typically a good policy option to address market failures and provide security of tenure, too strict regulations can decrease residential mobility if, for instance, regulated rents are much lower than market rents or tenants are overprotected.

2. Empirical approach

In order to assess the role of housing policy settings in explaining cross-country differences in residential mobility the following model of the household decision to move is estimated:

$$\text{Pr}_{ic} = \Phi(\alpha + H_{ic}\phi + \beta P_c + C_c\Gamma + e_{ic}) \quad (3)$$

where Φ is the normal distribution and Pr_{ic} is the probability to change residence for household head i in country c .

H_{ic} is a vector of household characteristics which are likely to influence the household decision to move as discussed in Section 1. These include tenure status (categorical variable measuring if the head of household is an owner or a tenant in the private sector or a social/subsidised tenant); age (1 if the head of the household is older than 44 years and 0 otherwise); education (categorical variable measuring if the head of household has low, middle, or high levels of education); employment status (1 if unemployed and 0 if employed); marital status (1 if the head of household is married, 0 otherwise); household income and its square control for non-linear effects.

P_c denotes country-specific housing policies or policy-related factors that may influence the decision to move. These include housing market policies that influence the amount of transaction costs in moving, rental regulations capping rents, and rental rules determining the degree of tenant protection. An additional important factor considered is the responsiveness of housing supply to price signals, which is partially policy-driven by land use and planning regulations (Caldera Sánchez and Johansson, 2011). In addition, the effect of broader policies influencing housing affordability, such as access to credit and unemployment benefits is also assessed. Vector C_c further controls for other factors that may influence residential mobility, including aggregate household income, which is meant to capture the overall development of a country, and the degree of urbanisation in the region where the household lives (NUTS 1 or 2 depending on the available data), which is meant to capture differences in local housing markets. Evidence by Van der Vlist *et al.* (2003) suggests this is a good proxy for local housing market conditions in the case of the Netherlands, and the degree of urbanisation can also pick up geographic differences between regions, such as for instance differences in building costs between mountains and plains. Finally, e is an error term capturing shocks affecting the household decision to move.

A number of potential sources of bias should be mentioned. First, despite the wide set of covariates included in the estimation equation, the results in Table 1 may fail to account for unobserved household characteristics that may influence the decision to move. For instance, households' unobserved characteristics could be correlated with households' observed characteristics included in the vector H_{ic} leading to spurious correlation and biased estimates. A possible solution for this problem would be to include household fixed effects in the model to control for household invariant unobserved characteristics. However, given the lack of time series data, this approach is not possible. Secondly,

selection bias may be of some concern in the estimation of equation (3) if, for instance, unobserved factors affecting tenure choice are correlated with unobserved factors affecting the probability of moving, so there is a non-random sample of movers. To account for this selection bias, a solution would be to estimate a Heckman selection model, which would involve estimating the probability of moving conditional on tenure choice. However, obtaining credible estimates would require an exclusion restriction: there must be at least one variable that appears in the selection equation and not in the equation of interest. Unfortunately, such variable, that would influence the tenure decision but not the decision to move, is not easy to find based on economic theory.²

The estimation of equation (3) treats policies as exogenous factors influencing mobility abstracting from some possible endogeneity concerns. However, institutions cannot be taken as exogenous. For instance, low residential mobility may prompt governments to design policies to address it. Or citizens may vote for governments that implement policies discouraging mobility in order to satisfy their preferences. However, the lack of plausible instruments and time series data on some of the policies make it difficult to control for omitted variables that may influence both residential mobility and policies and could potentially lead to a spurious relationship between policies and residential mobility. A possible solution would be to use country-fixed effects to wash out time-invariant, country-specific factors. The drawback from that approach is that in the cross-section approach used here the effect of the policy variables of interest, P , would no longer be identified. Given this, the robustness of the policy conclusions drawn from the cross-country analysis are tested within the single-country context, by using household data for the United States to model residential mobility and exploiting regional variation in policies.

3. Data

Two types of data are employed to estimate equation (3). First, household survey data from each OECD country for which such data are available. The advantage of these household surveys is that they are based on representative random samplings of the countries' populations and include information on residential moves, *i.e.* change of dwellings, as well as on household socio-economic characteristics. And second, data on policies mainly drawn from OECD cross-country comparable indicators on housing policies, completed with other publicly-available data.

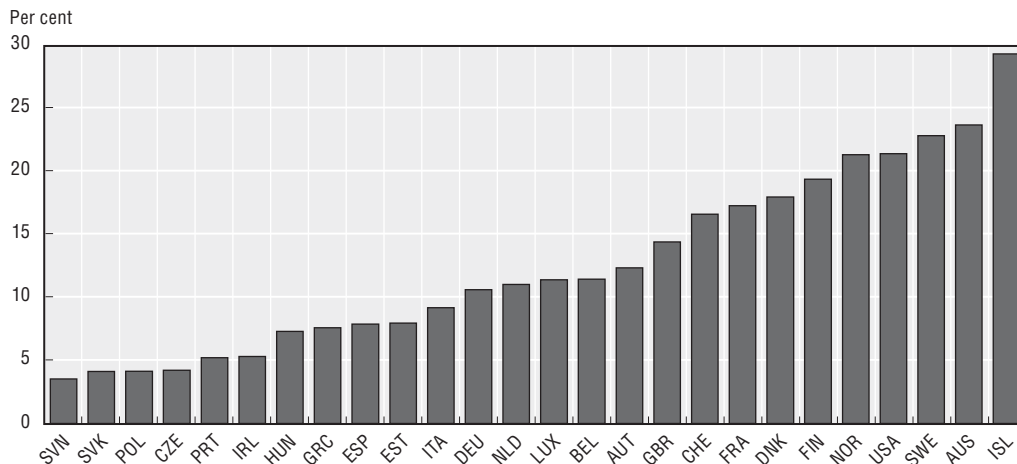
3.1. Household data

Household data for 25 OECD countries were collected from different sources. Data for 22 European countries come from the European Union Statistics on Income and Living Conditions (EU-SILC) household database.³ The analysis focuses on the 2007 cross-section because only that year contains a specific module on household housing conditions, including information on change of dwelling and the reasons for moving. These data are complemented with 2007 household data for Australia, Switzerland and the United States from different sources. The Australian data come from the Household, Income and Labour Dynamics in Australia (HILDA) survey, a household panel survey collecting information about economic and subjective wellbeing, labour market dynamics and family dynamics of Australian households. The American data are collected from the American Housing Survey (AHS), which contains data on US housing and household characteristics, as well as recent movers. And the Swiss data come from the Swiss Household Panel (SHP). The

sample used in the analysis covers individuals aged 24 to 66 in order to exclude atypical moving choices and excludes those for whom accommodation is provided free of cost to avoid the empirical results being influenced by atypical tenure status.⁴

As shown by Figure 1 residential mobility varies widely across countries. Mobility is highest in the Nordic countries (e.g. 29% in Iceland, 23% in Sweden or 21% in Norway), Australia (24%) and the United States (21%). By contrast, mobility is low in eastern European countries (e.g. 4% in Slovenia, the Slovak Republic, Poland, 5% in the Czech Republic and Portugal) and southern European countries (8% in Greece and Spain, and 9% in Italy). Looking at the breakdown of residential mobility by reasons for moving (Figure 2) in most countries the majority of moves are driven by housing-related reasons (37% on average) or family-related reasons (32% on average). Employment-related reasons account for a much smaller share (9.5% on average). As expected, the proportion of moves due to job-related reasons is greater in large countries such as the United States, Australia, Italy or the United Kingdom, while tending to be lesser in smaller countries like the Netherlands, Switzerland and Belgium. In small countries, commuting may be a preferred option when changing jobs than residential reallocation, which is relatively more costly.

Figure 1. **Residential mobility in OECD countries¹**
Percentage of households that changed residence within the last 2 years



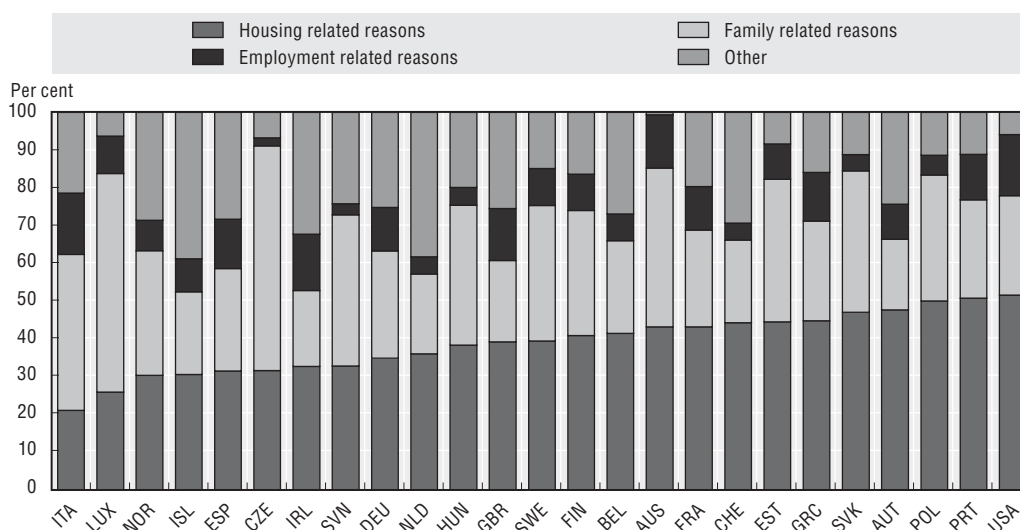
1. The low mobility rate in some eastern European countries (e.g. 4% in Slovenia implying a move every 50 years) does not seem reasonable and may reflect problems with the underlying data. However, this is difficult to verify as there is no alternative data source.

Source: OECD calculations based on 2007 EU-SILC Database, on HILDA for Australia, AHS for the United States, SHP for Switzerland.

3.2. Policy indicators

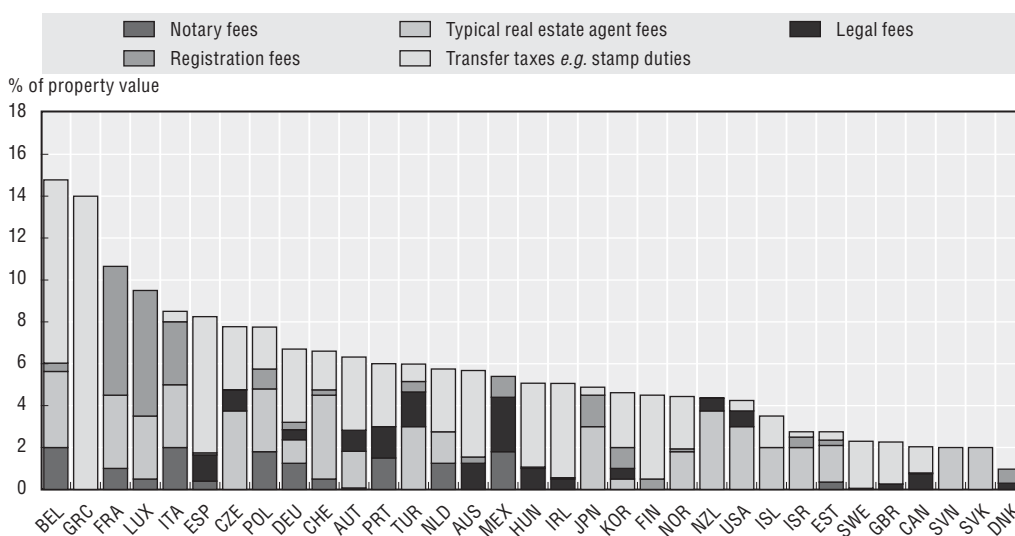
The household data are complemented with comparable cross-country indicators in three key housing policy areas: transaction costs, rental regulations and tenant protection arrangements in the private rental sector. These indicators are based on information provided to the OECD by its member countries through the OECD Housing Market Questionnaire at the end of 2009 and beginning of 2010. The construction of the indicators is described in detail by Johansson (2011).

The transaction costs indicator covers a number of different types of monetary costs and fees incurred when buying and selling a property. These include transfer taxes, such

Figure 2. **Breakdown of residential mobility rates by reasons to move**

Source: OECD calculations based on 2007 EU-SILC Database, on HILDA for Australia, AHS and Rupert and Wasmer (2009) for the United States, SHP for Switzerland.

as stamp duties, registration fees incurred when registering the property in the land registry, notarial or other legal fees and typical real estate agency fees. The bulk of these costs falls, in general, on the buyer, and differs considerably across countries (Figure 3). Transaction costs are particularly large in some continental (Belgium and France) and southern European countries (Greece and Spain), while tend to be lower in Nordic countries (Denmark and Sweden) and the United Kingdom. Transfer taxes and registration fees account for, on average, approximately half of overall costs.

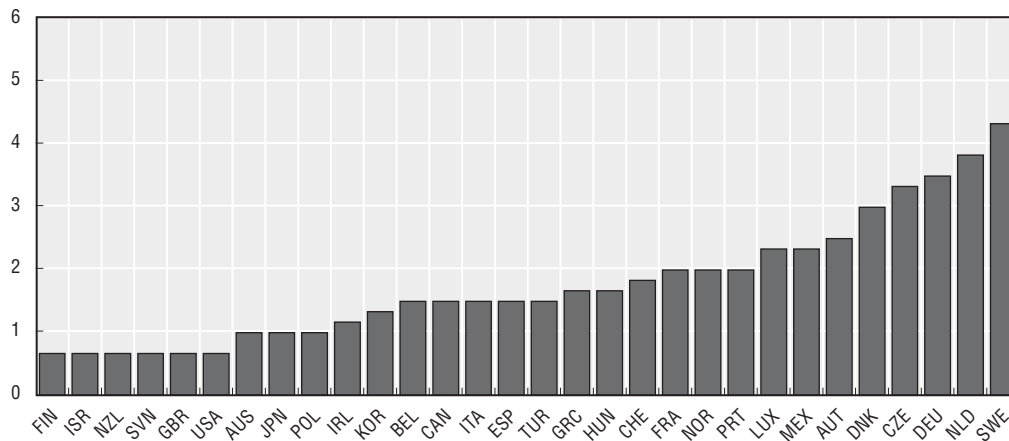
Figure 3. **Transaction costs on buyer by type, 2009¹**

1. Transaction costs refer to average costs. See Johansson (2011) for details.

Source: Calculations based on the OECD Housing Market questionnaire.

The rent regulation indicator measures the importance of rent controls in the private rental market. These cover two broad areas. Regulations setting limits on rents, such as whether initial rent levels can be freely negotiated between the landlord and the tenant, or the coverage of rent controls on rent levels, for instance in terms of percentage of the rental market covered. And, second, regulations on rent increases, which take into account, for instance, if rent increases within a tenancy contract can be freely agreed upon or not, and if rent increases are regularly indexed to some cost/price index or determined through some other administrative procedure. It also includes information on whether landlords are allowed to pass on increases in costs onto rents and the types of cost that can be passed on. Rent regulations appear to be comparatively strict in countries with a relatively large rental sector (*e.g.* Sweden, the Netherlands, Germany and the Czech Republic). On the other hand, these are lax in New Zealand, Finland, Slovenia, the United Kingdom and the United States (Figure 4).

Figure 4. **Rent control in the private rental market, 2009¹**
Scale 0-6: Increasing in degree of control



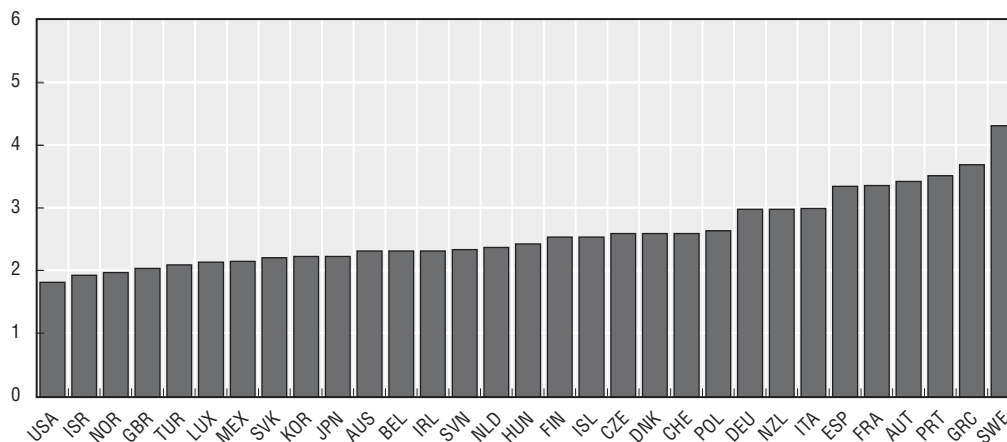
1. This indicator is a composite indicator of the extent of controls of rents, how increases in rents are determined and the permitted cost pass-through onto rents in each country. See Johansson (2011) for details.

Source: Calculations based on the OECD Housing Market questionnaire.

The tenant protection indicator covers regulations governing tenant-landlord relations. These include three broad areas. Tenant eviction procedures regarding issues such as the valid reasons for evicting a tenant or how tenant-landlord eviction dispute can be settled, either through a regular court system or a specialised court. Deposit requirements such as whether the landlord can collect a security deposit as part of the rental agreement and if so the amount allowed. And tenure security issues such as whether contract duration is freely agreed upon between parties or average contract length. Tenant-protection regulations vary markedly across countries and are comparatively strict in many southern continental European countries (Figure 5).

In addition to these newly-built indicators the analysis uses recent, comparable country-level estimates of the long-run price responsiveness of new housing supply sourced from Caldera Sánchez and Johansson (2011). As shown in Figure 6, housing supply responsiveness varies substantially across countries. It tends to be comparatively high in North America and some Nordic countries (Sweden and Denmark), while it is lower in continental European countries and in the United Kingdom. Caldera Sánchez and

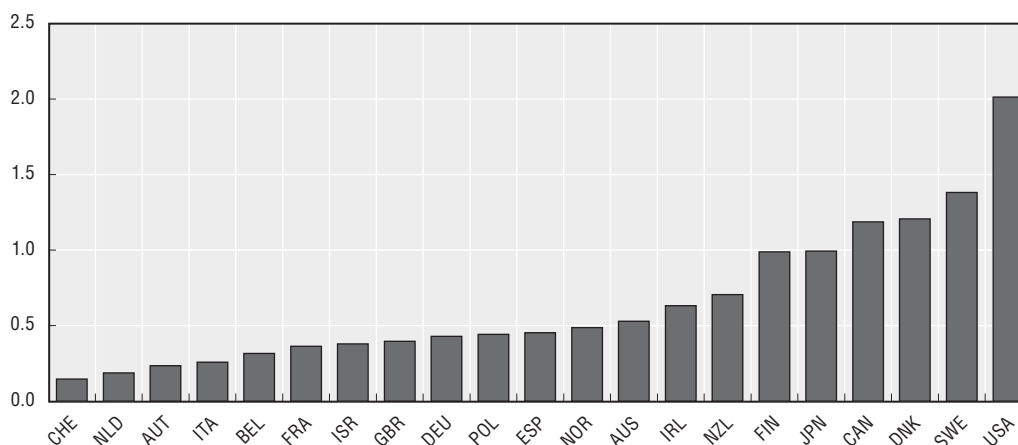
Figure 5. **Tenant-landlord regulations in the private rental market, 2009¹**
Scale 0-6: Increasing in protection for tenants



1. The indicator measures the extent of tenant-landlord regulations within a tenancy. It includes the ease of evicting a tenant, degree of tenure security and deposit requirements. See Johansson (2011) for details.

Source: Calculations based on the OECD Housing Market Questionnaire.

Figure 6. **Price responsiveness of housing supply: selected OECD countries**
Estimates of the long-run price elasticity of new housing supply¹



1. Estimates of the long-run elasticity of new housing supply where new supply is measured by residential investment. All elasticities are significant at least at the 10% level. In the case of Spain, restricting the sample to the period 1995-2007, which would reflect recent developments in housing markets (such as the large stock of unsold houses resulting from the construction boom starting in 2000 and peaking in 2007-09), only slightly increases the estimate of the elasticity of housing supply from 0.45 to 0.58. The estimation period is the 1980s to early 2000s. For more details see Caldera Sánchez and Johansson (2011).

Source: OECD estimates.

Johansson (2011) show suggestive evidence that cumbersome land use and planning regulations are associated with a less responsive housing supply in the long run across OECD countries.

To complement the information on housing market policies, data on credit market institutions and labour market policies are also used. First, the share of private credit to GDP, sourced from the IMF, measures how much private credit the financial system lends to firms and individuals. Second, the loan-to-value ratio (LTV), sourced from the ECB (2009), measures the ability of mortgage markets to ensure households access to financing and

captures the extent of the down-payment constraint, which is particularly relevant for the marginal buyer. Finally, the income-supporting features of the unemployment system are measured by the long-term average unemployment net benefit replacement rate for a single person with social assistance and having been unemployed for 5 years (OECD, Benefits and Wages Database).⁵

4. Empirical results

4.1. Basic results

Table 1 reports the cross-country results on the effects of different policy-related factors on residential mobility obtained from the estimation of equation (3). Each column of Table 1 reports alternative specifications of equation (3) where the policy-related variables enter sequentially. To the extent that some of the policy-related variables are correlated among themselves (Table 2), these variables are included one at a time to avoid multicollinearity problems. The results are, however, robust to including several uncorrelated variables at a time (Table 1, columns 13-16).⁶

Considering the effect of buyer transaction costs on residential mobility, the third column of Table 1 shows that higher transaction costs in buying a property are associated with lower residential mobility. Transaction costs incurred by the buyer are considered because most of the transaction costs involved in a property transaction fall on the buyer rather than the seller (Johansson, 2011).⁷ Theoretical studies suggest that transaction costs may create lock-in effects in the housing market and have negative effects on residential mobility (Oswald, 1996, 1999; Van Ommeren and Van Leuvensteijn, 2005). Decomposing transaction costs into its components shows that transaction taxes, notarial and legal fees have a negative and significant effect on mobility (columns 4, 5 and 6), while real estate and registration fees do not, and for that reason are not reported in the table.⁸ This evidence is in line with the findings of Van Ommeren and Van Leuvensteijn (2005) for the Netherlands, which suggest that high transaction costs restrict residential mobility, potentially leading to lower labour mobility and higher unemployment.

Stricter rent regulations are associated with lower residential mobility. This is in line with a large body of research suggesting that too strict regulations can reduce both the size and the variety of services in the rental sector by discouraging new construction and delaying maintenance (Sims, 2007; Arnott, 2003). Other studies, mostly for the United States, also show that renters in rent-controlled housing markets move less frequently and consume less than optimal quantities of housing (*e.g.* Clark *et al.* 1982; Linneman, 1983; Lind, 2001). A possible reason is that if rents in rent-regulated dwellings are set, or vary differently from non-regulated dwellings, sitting tenants in rent-controlled dwellings will be reluctant to move and give up their below-market rents (*e.g.* European Housing Review, 2009). As expected, given the high correlation between rent control and tenant protection (0.62), higher tenant protection is also associated with lower residential mobility. Similarly, strict tenant-landlord regulation resulting in high tenure security can lower the expected returns from residential rental supply and reduce investment. It can also encourage owners not to rent out their apartments leaving them empty. Overall, these factors can hinder entry into and exit from the rent-regulated rental sector leading to lower residential mobility.

Table 1. The effect of policy-related factors on residential mobility¹

	(1) ²	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) ³	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Transaction costs buyer			-0.002*** (0.000)										-0.003*** (0.000)	-0.003*** (0.000)		
Transaction taxes				-0.009*** (0.001)												
Notary fees					-0.028*** (0.003)											
Legal fees						-0.045*** (0.003)										
Rent control							-0.020*** (0.002)						-0.015*** (0.002)			-0.020*** (0.002)
Security of tenure								-0.016*** (0.003)						-0.017*** (0.003)		
Elasticity of supply									0.087*** (0.004)							0.060*** (0.005)
Private credit to GDP ⁴										0.031*** (0.000)						0.045** (0.000)
Loan to value											0.002*** (0.000)		0.001*** (0.000)	0.001*** (0.000)	0.002*** (0.000)	
Long-term net replacement rates												0.001*** (0.000)	0.000** (0.000)	0.001*** (0.000)	0.000* (0.000)	-0.000 (0.000)
Old	-0.118*** (0.003)	-0.119*** (0.003)	-0.120*** (0.003)	-0.119*** (0.003)	-0.120*** (0.003)	-0.121*** (0.003)	-0.119*** (0.003)	-0.120*** (0.003)	-0.124*** (0.003)	-0.119*** (0.003)	-0.118*** (0.003)	-0.119*** (0.003)	-0.118*** (0.003)	-0.118*** (0.003)	-0.122*** (0.003)	-0.118*** (0.003)
Owner	-0.200*** (0.004)	-0.194*** (0.004)	-0.194*** (0.004)	-0.194*** (0.004)	-0.199*** (0.004)	-0.190*** (0.004)	-0.203*** (0.004)	-0.195*** (0.004)	-0.198*** (0.004)	-0.197*** (0.004)	-0.192*** (0.004)	-0.197*** (0.004)	-0.201*** (0.004)	-0.198*** (0.004)	-0.205*** (0.004)	-0.203*** (0.004)
Social/subsidised tenant	-0.074*** (0.004)	-0.061*** (0.004)	-0.061*** (0.004)	-0.066*** (0.004)	-0.064*** (0.004)	-0.065*** (0.004)	-0.066*** (0.004)	-0.061*** (0.004)	-0.062*** (0.005)	-0.061*** (0.004)	-0.064*** (0.004)	-0.062*** (0.004)	-0.068*** (0.004)	-0.066*** (0.004)	-0.069*** (0.005)	-0.066*** (0.004)
Low education attainment	-0.034*** (0.004)	-0.038*** (0.004)	-0.036*** (0.004)	-0.034*** (0.004)	-0.036*** (0.004)	-0.029*** (0.004)	-0.042*** (0.004)	-0.037*** (0.004)	-0.036*** (0.004)	-0.039*** (0.004)	-0.037*** (0.004)	-0.039*** (0.004)	-0.038*** (0.004)	-0.036*** (0.004)	-0.036*** (0.004)	-0.042*** (0.004)
Middle education attainment	-0.012*** (0.003)	-0.012*** (0.003)	-0.012*** (0.003)	-0.012*** (0.003)	-0.012*** (0.003)	-0.011*** (0.003)	-0.012*** (0.003)	-0.013*** (0.003)	-0.008** (0.003)	-0.011*** (0.003)	-0.010*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.007** (0.003)	-0.012*** (0.003)
Unemployed	0.001 (0.004)	-0.000 (0.004)	-0.001 (0.004)	-0.000 (0.004)	-0.001 (0.004)	-0.002 (0.004)	0.000 (0.004)	-0.001 (0.004)	-0.001 (0.005)	-0.001 (0.004)	-0.001 (0.004)	-0.000 (0.004)	0.000 (0.004)	-0.001 (0.004)	-0.001 (0.005)	0.000 (0.004)
Disposable income	0.022** (0.011)	0.026** (0.011)	0.028** (0.012)	0.027** (0.011)	0.031** (0.012)	0.024** (0.011)	0.027** (0.012)	0.030** (0.012)	0.015 (0.012)	0.028** (0.012)	0.018* (0.011)	0.025** (0.011)	0.023** (0.011)	0.023** (0.011)	0.016 (0.011)	0.028** (0.012)
Squared disposable income	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)	-0.001** (0.001)
Household living in cohabitation	-0.030*** (0.003)	-0.037*** (0.003)	-0.037*** (0.003)	-0.036*** (0.003)	-0.037*** (0.003)	-0.034*** (0.003)	-0.036*** (0.003)	-0.037*** (0.003)	-0.038*** (0.003)	-0.035*** (0.003)	-0.035*** (0.003)	-0.037*** (0.003)	-0.034*** (0.003)	-0.034*** (0.003)	-0.037*** (0.003)	-0.035*** (0.003)
Aggregate household income		0.021*** (0.001)	0.020*** (0.001)	0.009*** (0.002)	0.017*** (0.001)	0.023*** (0.001)	0.011*** (0.002)	0.014*** (0.002)	-0.032*** (0.003)	0.011*** (0.002)	0.011*** (0.002)	0.020*** (0.001)	0.002 (0.002)	-0.002 (0.002)	-0.024*** (0.004)	0.009*** (0.002)
Degree of urbanisation		-0.028*** (0.001)	-0.027*** (0.001)	-0.029*** (0.001)	-0.020*** (0.002)	-0.033*** (0.001)	-0.023*** (0.001)	-0.028*** (0.001)		-0.028*** (0.001)	-0.028*** (0.001)	-0.027*** (0.001)	-0.021*** (0.001)	-0.024*** (0.001)		-0.022*** (0.001)
Number of observations	142 162	142 162	142 162	142 162	133 178	139 025	133 153	138 803	108 394	138 063	139 961	142 162	133 153	136 602	108 394	129 054

1. Estimates from probit regression. Values are marginal effects. The coefficients correspond to the impact of a change in the explanatory variable on the probability to move estimated at the mean of the independent variables. The sample is restricted to individuals who are the head of the household to avoid the results being influenced by atypical tenureship. The estimates are weighted by the individual sampling probability. Robust standard errors, clustered by country, are reported in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

2. The specification in Column (1) includes country dummies.

3. Urbanisation rate excluded from (9) and (15) because highly correlated with elasticity of supply.

4. The coefficient on private credit to GDP has been scaled by multiplying it by 100.

Source: OECD calculations based on 2007 EU-SILC for European countries, 2007 HILDA for Australia, 2007 SHP for Switzerland, 2007 AHS for the United States.

Table 2. **Correlation between different policies and policy-related factors**

Policies	(1) Transaction costs buyer	(2) Rent control	(3) Security of tenure	(4) Elasticity of supply	(5) Private credit to GDP (2006)	(6) Loan to value	(7) Long-term net replacement rates
Transaction costs buyer	1.00						
Rent control	-0.03	1.00					
Security of tenure	0.31	0.62	1.00				
Elasticity of supply	-0.54	-0.40	-0.51	1.00			
Private credit to GDP (2006)	-0.58	-0.23	-0.59	0.59	1.00		
Loan to value	-0.05	-0.37	-0.23	0.39	0.17	1.00	
Long-term net replacement rates	0.29	-0.35	-0.14	0.02	0.07	0.09	1.00

Source: OECD calculations based on 2007 EU-SILC for European countries, 2007 HILDA for Australia, 2007 SHP for Switzerland and 2007 AHS for the United States.

Turning to the role of housing supply, a more responsive supply has a positive and significant effect on residential mobility. Differences in supply response between areas can drive a wedge in prices and have a negative impact on household location decisions. The responsiveness of housing supply determines to what extent demand shocks, such as financial deregulation or population growth, lead to an adjustment in housing construction as opposed to adjustments in prices. Not only geographical and urban characteristics influence how responsive housing supply is, but also other policies, such as land-use regulations, building codes or rental regulations, which influence the allocation of land and housing between different uses (Caldera Sánchez and Johansson, 2011). Excessively strict regulations or a slow allocation of building permits can impede housing markets in reaching a competitive equilibrium and constrain housing supply. This implies that restrictive regulations, to the extent that they reduce the responsiveness of housing supply to price changes, can hinder household mobility (Mayo and Stein, 1995). For instance, if differences in supply responsiveness give rise to large price differentials across regions, households in lower-priced areas seeking to move to higher-priced regions—possibly to take advantage of better employment prospects – will need to clear a larger credit hurdle than otherwise (Saks, 2008; Barker, 2004; Cameron and Muellbauer, 1998). This can also contribute to perpetuate differences across regions in mobility if for instance a low responsiveness of housing supply contributes to the capitalisation of wages into house prices or rents.

Higher volumes of credit in the economy, as measured by the share of private credit to GDP, appear to enhance residential mobility (Column 10). A higher LTV ratio, that is the possibility to borrow a larger share of the housing value in order to purchase a home, is also associated with higher residential mobility (Column 11). These findings suggest that mortgage market features, through their effect on borrowing costs, can affect household mobility. Given that owner-occupied housing generally requires debt financing, liquidity constraints may force some households to remain in the rental market when they could optimally choose to be homeowners. During the period of adjustment to financial liberalisation, residential mobility can increase as easier access to credit can facilitate the transition from rental to owner occupation for previously credit-constrained households. But the resulting higher homeownership rates are likely to be associated with lower residential mobility, as argued before.

These average results may also conceal the heterogeneous effects greater availability of credit can have on residential mobility over the housing cycle. For instance, high LTV

ratios, coupled with decreasing house prices, can have negative effects on residential mobility. During a housing market bust, homeowners suffering severe house price declines and having mortgage balances higher than the value of their home will find it difficult to refinance their loan or raise sufficient capital to sell and move to another dwelling and may become locked-in (*e.g.* Chan, 2001; Ferreira *et al.* 2008). Financial deregulation may have therefore increased household vulnerability to shocks and the risks that households find themselves in negative equity positions hurting mobility (see Andrews *et al.* 2011).

Column 12 in Table 1 suggests that the generosity of unemployment benefits influences residential mobility. Higher long-term unemployment benefits, as measured by average net unemployment benefit replacement rates, are associated with higher residential mobility. Unemployment benefits can increase the degree of residential mobility by relaxing current financial constraints of those unemployed and help them to finance their labour search and moving costs. This finding, although it only reflects the effect of very long-term unemployment benefits on mobility, is in line with previous findings by Tatsiramos (2009). He finds that countries with relatively generous benefits, such as Denmark, France and, to some extent, Spain have higher residential mobility. Thus, by increasing the resources of those unemployed, unemployment benefits may increase residential mobility and help to finance jobseekers' labour moving and search costs. Indeed, evidence from OECD (2010) shows that unemployment benefit generosity is associated with higher employment reallocation, in terms of average gross worker flows, in OECD countries.

Focusing now on the average effects of household characteristics on mobility, the results in Table 1 suggest that older households are less mobile than younger ones. This evidence is in line with a large number of studies that find an inverse relationship between age and residential mobility due to life-cycle reasons for moving, such as household formation and increase in household size (*e.g.* Clark and Withers, 1998). Homeowners are less mobile than private renters. A common explanation for this finding is that homeowners face higher search and transaction costs than private tenants when considering moving to a new residence (*e.g.* Oswald, 1996). Residential mobility is also lower among households receiving a subsidy or paying below-market rents, compared with private tenants. Evidence suggests that compared with tenants in the private rental market, social housing tenants are typically more reluctant to move out so as not to give up their below-market rents (*e.g.* Flatau *et al.* 2003). The probability to move also increases with the level of education. More educated households are generally more mobile than less-educated ones. Households living in cohabitation are less mobile than single households and this is probably because they have to overcome higher costs to move to a new location. Current income has a positive effect on mobility, suggesting that more income helps facing mobility costs. Employment status, however, does not influence residential mobility.

4.2. Sensitivity check: including several policies in the model

To verify that the results are robust to considering the simultaneous effects of various policies, several policies are included in the regression equation. To avoid multicollinearity problems only those variables that are not significantly correlated are included.

Columns 13-16 in Table 1 report the results of different regressions, including several groupings of policies. The results are generally robust to this test and lead to similar conclusions as in the baseline results. Transaction costs, rent control and tenure security

regulations have a negative effect on residential mobility. The responsiveness of supply, loan-to-value ratios, private credit and long-term net replacement rates have a positive effect on mobility. But, the effect of long-term net replacement rates is sensitive to the considered specification. In column 16 of Table 1 the coefficient on this variable is not significant.

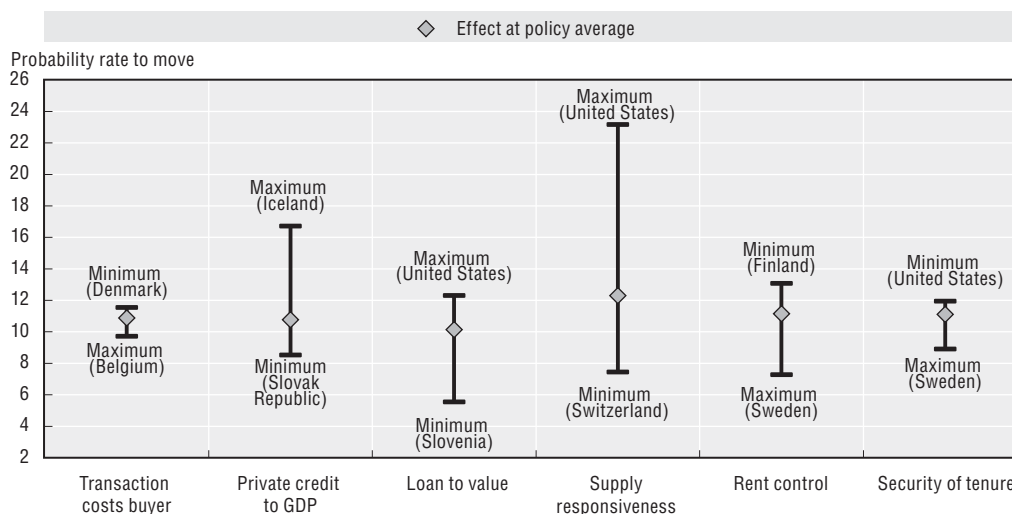
4.3. Economic significance of the effect of policy-related factors on mobility

To understand the economic significance of the effect of these different policy-related factors on residential mobility and shed some light on the improvements in residential mobility that could be associated with different policy reforms, Figure 7 shows illustrative examples of how different policy scenarios influence residential mobility. Each bar represents the change in the average probability to move, associated with a change from the least to the most mobile-friendly level of the policy. The probability rates are computed at the mean, max or min of the policies based on OECD countries' policies distribution, and at the mean of the rest of explanatory variables based on the estimates in Table 1. This provides a tentative way of quantifying the relative impact of policies on residential mobility, but it only quantifies the effects of one isolated policy on mobility. The overall effects of policy changes will also depend on the housing structure in a country.

Reducing transaction costs could increase residential mobility: The evidence in Figure 7 suggests that reducing overall transaction costs from the highest level observed in Belgium to the average level observed in Austria would bring an increase in residential mobility of about 1 percentage point. This simple exercise abstracts from the fact that if transactions costs, such as for instance, transfer taxes are reduced, other taxes may need to increase, which may in turn reduce mobility. Transaction taxes are inefficient for raising revenue as the same revenue could in principle be obtained at a lower economic cost by, for instance, taxing consumption instead (OECD, 2009). Policies can contribute to reducing these one-off costs by tax restructuring and/or lifting barriers to entry in the real estate or legal professions, particularly where costs are excessively high such as in Belgium or France (Figure 3).

Reducing rent controls and changing the bargaining power balance between tenants and landlords could increase residential mobility: reducing rent controls from the level in the most restrictive country (Sweden) to that of the average country (e.g. Norway) could increase residential mobility by about 4 percentage points. Making the rules governing tenant-landlord relations more landlord-friendly, by easing them from the level in the most restrictive country (Sweden) to the average (e.g. Denmark) could increase residential mobility by about 2 percentage points.

An unresponsive housing supply tends to undermine residential mobility: Regression estimates suggest that an increase in the responsiveness of supply in the country with the least responsive supply (Switzerland) to the average (e.g. Ireland) would be associated with almost double average residential mobility. In the longer term, a responsive supply is important to avoid bottlenecks in the housing market and excessive volatility in house prices. But in flexible-supply countries greater responsiveness can also translate into more volatile residential investment as housing investments adjust more rapidly to changes in demand. This can contribute over the short-term to more cyclical swings in economic activity and hurt mobility if households do not move because, for instance, they are in negative equity positions.

Figure 7. Residential mobility and policy-related factors¹

1. The dot is the average probability to move evaluated at average policy and household characteristics. The distance between the Min/Max and the average is the change in the probability associated with a policy change. The reported probabilities for the elasticity of supply and loan to value have a different mean than the other specifications because they are estimated on a reduced sample of countries due to data constraints. Based on the estimates presented in Table 1.

Source: OECD calculations based on 2007 EU-SILC Database, on HILDA for Australia, SHP for Switzerland and AHS for the United States.

Easier access to credit can ease financial constraints and increase residential mobility: Finally, increasing the volume of private credit to GDP in the economy from the lowest level observed in the Slovak Republic, to the average level (Sweden), could increase residential mobility by 2 percentage points. Similarly, by lowering down-payment constraints (or increasing LTV ratios) from the lowest level in Slovenia (50% loan-to-value ratio) to the average (e.g. Estonia 90%) could increase average residential mobility by 5 percentage points.

4.4. Do policy factors disproportionately affect the mobility of young households?

The influence of policy-related factors on residential mobility may vary depending on household characteristics. To obtain deeper insight into this issue, the next step analyses the differential effect of policy-related factors on younger compared with older households. For instance, older households may find it easier to finance the search and transaction costs involved in moving or have greater ability to raise capital in order to finance a new home because of their greater collateral assets than younger households.

To investigate these hypotheses the following model is estimated:

$$Pr_{ic} = \Phi(\alpha + \beta P_c + \gamma P_c * Old + \delta Old + Z_{ic}\phi + C_c\Gamma + e_{ic}) \quad (4)$$

where *Old* is a binary variable taking the value 1 if the head of the household is older than 44 years of age, and 0 when he/she is 44 years old or younger, Z_{ic} includes the same set of household characteristics as H_{ic} in equation (3) except that it does not include *Old*. The coefficient γ measures the differential effect of a given policy on old households compared with young ones, while the coefficient β measures the average effect of the policy.

Estimates of equation (4) suggest that most policy-related factors have a stronger effect on the mobility of younger households compared with older ones. Transaction costs,

Table 3. **The effect of policies and policy-related factors on residential mobility of old versus young households¹**

Policy-related factors	(1) Transaction costs buyer	(2) Rent control	(3) Security of tenure	(4) Elasticity of supply ²	(5) Private credit to GDP (2006)	(6) Loan to value	(7) Long-term net replacement rates
Dependent variable: 1 if head of household changed residence within the past two years, 0 otherwise							
Policy-related factors ³	-0.003*** (0.001)	-0.020*** (0.002)	-0.018*** (0.003)	0.035*** (0.005)	0.036*** (0.000)	0.001*** (0.000)	0.035*** (0.000)
Policy-related factors * Old	0.005*** (0.001)	0.010*** (0.002)	0.013** (0.004)	-0.020*** (0.004)	-0.027*** (0.000)	-0.061*** (0.000)	0.000208 (0.000)
Old	-0.152*** (0.006)	-0.120*** (0.005)	-0.134*** (0.010)	-0.119*** (0.006)	-0.094*** (0.009)	-0.101*** (0.011)	-0.143*** (0.010)
Observations	142 162	133 153	138 803	108 394	138 063	139 961	142 162

1. Estimates from probit regression. Values are marginal effects. The coefficients correspond to the impact of a change in the explanatory variable on the probability to move estimated at the mean of the independent variables. Regressions include similar controls as in Table 1, including age, tenureship, education, employment status, income and squared income, cohabitation status, total national income and urbanisation rate. The sample is restricted to individuals who are the head of the household to avoid the results being influenced by atypical tenureship. The estimates are weighted by the individual sampling probability. Robust standard errors, clustered at the country level, are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

2. Urbanisation rate excluded from (4) because highly correlated with elasticity of supply.

3. The coefficient on private credit to GDP has been scaled by multiplying it by 100.

Source: OECD calculations based on 2007 from EU-SILC for European countries, HILDA for Australia, SHP for Switzerland, AHS for the United States.

rent controls and security of tenure regulations have a negative effect on mobility and their effect is stronger on younger households. An elastic supply, greater access to credit and a relaxation of down-payment constraints is associated with higher residential mobility among younger households compared with older ones. The effect of long-term unemployment protection is, however, not significantly different among younger relative to older households as indicated by the non-significant effect of the interaction between long-term replacement rates and the age dummy.

5. Do policy-related factors affect within country mobility differently?

The effect of policies on residential mobility may differ within countries. Building on city-level and state-level information on policies from the United States, Table 4 reports the results from a probit model of the probability that a US household moves, as a function of a similar set of policies and controls as in the cross-country estimation. While the underlying household data continue to be drawn from the 2007 American Housing Survey, the policies are obtained from various sources.⁹ City-level data on rent controls and land use regulations are based on Malpezzi (1996). A simple dummy variable is included to measure whether rent controls exist in each city while the land-use regulation index takes into account a number of factors, including approval times for zoning and subdivisions, share of zoning changes approved, amount of land zoned for single-family homes (relative to demand) and infrastructure quality. State real estate transaction tax rates are obtained from the Federal Tax Administrators Bulletin and the inter-state banking regulation index is based on Rice and Strahan (2009). The latter index captures various regulations that hamper interstate branching, such as limits on banks' size, interstate merger restrictions and restrictions on the amount of deposits a bank can hold. The analysis controls for regional differences using region-fixed effects. To the extent that this approach is not affected by unobserved cross-country differences which may be correlated with both

mobility patterns and housing policies, it further strengthens the conclusions drawn from the cross-country analysis.

Table 4. **The effect of policies on residential mobility in the United States**¹

	(1)	(2)	(3)	(4)
Dependent variable: 1 if head of household has changed residence within the past two years, 0 otherwise				
Policies:				
Landuse regulation index (City-level)	-0.00419*			
	(0.002)			
Rent control dummy (City level)		-0.0607***		
		(0.017)		
Banking regulation index (State level)			-0.00364**	
			(0.002)	
Transaction tax rate (State level)				-0.0100
				-(0.010)
Household-level variables:				
Age 35-44	-0.0842***	-0.0847***	-0.0850***	-0.0847***
	(0.013)	(0.013)	(0.013)	(0.013)
Age 45-54	-0.142***	-0.143***	-0.142***	-0.143***
	(0.012)	(0.011)	(0.011)	(0.011)
Age 55-64	-0.174***	-0.175***	-0.175***	-0.175***
	(0.015)	(0.015)	(0.015)	(0.015)
Outright owner	-0.191***	-0.191***	-0.191***	-0.191***
	(0.007)	(0.007)	(0.007)	(0.007)
Owner with mortgage	-0.213***	-0.213***	-0.212***	-0.213***
	(0.020)	(0.019)	(0.020)	(0.019)
Social/subsidised tenant	-0.0741***	-0.0751***	-0.0753***	-0.0751***
	(0.001)	(0.001)	(0.002)	(0.001)
Low education attainment	-0.0242**	-0.0244*	-0.0244*	-0.0244*
	(0.012)	(0.012)	(0.012)	(0.012)
Unemployed	0.0270***	0.0274***	0.0274***	0.0274***
	(0.010)	(0.010)	(0.010)	(0.010)
Disposable income				
	(0.000)	(0.000)	(0.000)	(0.000)
	(0.000)	(0.000)	(0.000)	(0.000)
Household living in cohabitation	-0.0506***	-0.0506***	-0.0507***	-0.0506***
	(0.008)	(0.008)	(0.008)	(0.008)
Foreign born	0.0250***	0.0255***	0.0238***	0.0255***
	(0.008)	(0.007)	(0.008)	(0.007)
Other control variables:				
Population Density (City Level)	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Trade Union Density (State level)				
	(0.000)	(0.000)	(0.000)	(0.000)
	(0.001)	(0.002)	(0.001)	(0.002)
Regional Dummies	Yes	Yes	Yes	Yes
Number of observations	6 720	6 720	6 720	6 720

1. Estimates from probit regression. Values are marginal effects. The coefficients correspond to the impact of a change in the explanatory variable on the probability to move estimated at the mean of the independent variables. The sample is restricted to individuals who are the head of the household to avoid the results being influenced by atypical tenureship. The estimates are weighted by the individual sampling probability. Robust standard errors are reported in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: OECD calculations based on 2007 American Housing Survey.

The results broadly confirm the findings of the cross-country analysis with respect to the impact of policy variables:

- *Land-use regulations*: Residential mobility tends to be lower in cities with more stringent land-use regulations. The coefficients in Table 4 imply that a one standard deviation rise in the extent of land-use regulation, *e.g.* moving from the regulatory settings in Houston (the sample mean) to Los Angeles, reduces the probability of moving by about 10 percentage points, compared with a situation in which land-use regulation is at the sample mean.
- *Rent controls*: The probability that a household changes residence is substantially lower in cities with rent control than in those where rents are determined by market conditions.
- *Banking regulation*: Higher banking regulation tends to be associated with lower residential mobility, though this effect is considerably smaller than the impact of land-use regulations.

Finally, the last column in Table 4 investigates whether higher real estate transaction tax rates at state level tend to reduce residential mobility, but this effect is not significant.¹⁰

Notes

1. Residential mobility refers in this paper to the change of dwelling. A distinction between different types of moves, such as regional or inter country moves, is not possible due to data limitations.
2. Credible estimates of a Heckman selection model require at least one variable to appear with a non-zero coefficient in the selection equation and not in the equation of interest. When instead the same covariates appear in the selection equation and the equation of interest, the Heckman selection model bases its identification on the normality assumption, and identification will be tenuous unless there are many observations in the tails where there is substantial non-linearity in the inverse Mills ratio.
3. The EU-SILC dataset includes the following 23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. Poland is not included in the empirical analysis because inspection of the dataset revealed a large number (35%) of households that were living in accommodation for free, which is not representative of the population.
4. Unfortunately the dataset does not allow for distinguishing between local residential moves and long-distance residential moves. Local residential moves typically involve a change in the residence but not in the working place, whereas regional or within-country moves are typically linked to job reasons (Clark *et al.* 1999). Ideally, one would also like to observe tenure and income before and after the move, but this is not possible given the cross-section nature of the dataset.
5. The choice of this indicator is motivated on the grounds that the benefit for this target group is the least generous, therefore providing a stricter test of the effect of unemployment insurance on mobility.
6. Caldera Sánchez and Andrews (2011) shows the results are robust to controlling for the potential bias resulting from pooling together country samples of different sizes by estimating the cross-country equation (4) on country samples of equal size.
7. This result is robust to considering as an alternative total transaction costs instead of buyer transaction costs.
8. The compound effect of the individual components of transaction costs on mobility should not be interpreted as the total sum of the components, because the underlying distribution of the transaction costs components varies greatly across countries. Studying the effect of different transaction costs for different types of households (*e.g.* some countries have zero stamp duties for low value owners) would help shed some light on these matter for different households. Unfortunately, the available data do not allow to go into such detail.

9. A caveat of this analysis is that it is based on answers at the city/state of destination. To the extent that the data does not distinguish between inter-city or inter-state moves, the policy settings at the city/state of destination may not be those influencing the decision to move.
10. About two-thirds of US states impose a tax on the transfer of real estate. Unfortunately, no data is available for California, Louisiana or Ohio since transfer taxes are imposed at the local level.

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