Measuring Vulnerability and Resilience in OECD Coutries

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CHAPTER 1. THE ROLE OF ASSETS IN REDUCING VULNERABILITY

1. Individuals and households are exposed to potential misfortune from many different sources: economic recession, crime, extreme weather, natural disasters, and mental or physical illness are just some examples of threats to material and subjective well-being that a person or family may face during a lifetime. As a result, human vulnerability has been studied from numerous perspectives with each approach tending to use different definitions and methodology, depending on the specific risk under consideration. The aim of this paper is to provide a common structure and language to underpin the analysis of vulnerability, and its counterpart resilience, in OECD countries.

2. The paper uses an "assets-based" framework, focusing on the resources that individuals and households can draw upon to reduce vulnerability and strengthen their resilience to a range of different risks. Assets are grouped into four categories - economic capital, human capital, social capital and collective/public assets – and a selection of indicators, based on the most appropriate available data, are proposed. Vulnerability is a much broader concept, affecting a potentially larger share of the population than "poverty" or "social exclusion". It is intended that the conceptual framework presented in this paper, and the accompanying selection of indicators, will demonstrate the viability of monitoring vulnerability, as opposed to poor outcomes, and will help identify a measurement strategy for vulnerability.

Key concepts and definitions

Vulnerability

3. The notion of "vulnerability" is a broad one, encompassing a variety of meanings. The word describes the possibility of being physically or psychologically harmed. In its broadest sense, the notion of vulnerability hence refers to the situation of individuals, households or communities who are exposed to potential harm from one or more risks.¹ It also refers to the inability of these people or groups to anticipate, withstand, and recover from the damage resulting from an adverse shock.

4. A large share of the work on conceptualising vulnerability has stemmed from disciplines such as food security, livelihoods sustainability and disaster management, focussing on rural populations in developing countries.² People living in such areas tend to depend on agriculture for their livelihoods and the meeting of their basic needs. When crops and property are destroyed by extreme weather conditions, or when the value of commodities drops unexpectedly, the rural poor are highly vulnerable to acute poverty, malnutrition, illness, and death. Further, there is rarely sufficient physical or institutional infrastructure in place to protect from risk or provide help for the most vulnerable in time of need.

¹ Vulnerability can also be used to refer to much larger systems such as ecosystems or economic systems. The focus of this paper will be on the vulnerability of individuals and households.

² Alwang and Siegel (2001) provide a useful overview of different approaches to vulnerability assessment in the development literature.

5. In OECD countries, most people will never experience the grave hardships regularly confronted by the world's poorest populations. Overall living standards are much higher and while poverty and deprivation undoubtedly exist, there are social safety nets in place to help ensure that basic needs are met. There are people who slip through the net and suffer outcomes such as malnutrition or homelessness, yet they represent a relatively small fraction of the population. Even natural disasters tend to have a much less devastating impact in industrialised nations, where networks and resources are in place to mitigate their effect.³

6. While the degree of risk may be relatively less severe for the majority of people living in OECD countries, the concept of vulnerability is nonetheless relevant. During a lifetime, an individual can face any number of challenging circumstances that may seriously threaten their well-being. Losing a job, suffering illness, going through a divorce, falling victim to a crime - any one of these events can bring instability and distress into the lives of those directly concerned and their families. If people are unable to cope, their levels of well-being may be drastically reduced, resulting in loss of income, material deprivation, deteriorating mental or physical health, and social exclusion. From a policy point of view, it is important to be able to identify not just those people who are in need today, but also those who risk being in need in the future.

7. Vulnerability is strongly linked to concepts of poverty and social exclusion. However, while the poor and excluded are generally the most vulnerable, not all vulnerable people are currently poor or excluded: vulnerability is about insecurity and exposure to risk rather than current conditions.

8. This paper's approach towards conceptualising vulnerability relies on the idea that both personally-owned assets, as well as collective assets, are central to reducing people's sensitivity to different risks. The definition of vulnerability adopted is as follows:

A person (or household) is vulnerable to future loss of well-being below some socially accepted norms if he or she lacks (or is strongly disadvantaged in the distribution of) assets which are crucial for resilience to risks.

9. The following sections discuss how the key concepts of assets and resilience are understood in this paper.

Assets

10. People's ability to withstand a crisis without significant or long-term losses in well-being is, to a large extent, dependant on the assets they can draw upon for support and protection. Assets are considered here in a broad sense, referring to the tangible and intangible stocks of wealth used by households and individuals to generate well-being. In OECD countries, the assets that are most relevant for strengthening resilience fall into the following categories:

- •Economic capital
- •Human capital
- •Social capital

³ For example, while the 2009 earthquake in Italy and the 2010 earthquake in Haiti were of similar intensity, the resulting loss of human life differed greatly. In Italy, only 1 out of every 190 people affected by the earthquake died and 1 out of every 373 people affected were rescued. In Haiti on the other hand, 1 out of every 15 people affected died and only 1 in every 16,558 people affected were rescued. *BBC News*, "Why did so many people die in Haiti's quake?", 14 February 2010, <u>http://news.bbc.co.uk/2/hi/8510900.stm</u>.

•Collective/public assets

Economic capital

11. Economic capital describes the sum of financial assets and physical property that make up household wealth. Money in savings accounts, life insurance, pensions, housing, consumer durables, business investments – these all represent different types of wealth, of differing levels of accessibility in times of need. Access to credit and debt is also an element in the measurement of economic assets, and the size of the debt burden will have an impact on the level of household vulnerability. This is probably the first group of resources that spring to mind when people think of vulnerability. Many types of risk have serious financial consequences, either through loss of income such as job loss or because they entail large, unexpected expenses such as property damage, or even both such as long-term illness. Those with the highest net worth (total assets minus liabilities), or with the ability to borrow or access credit, are best able to continue to meet their consumption needs when confronting adverse shocks. Of course, the longer a household has to draw upon its stock of wealth just to get by, the greater the increase in vulnerability as assets diminish. While the poor are less likely to have the assets they need or the access to insurance or credit to protect against shocks, the asset-poor and the income-poor are not necessarily the same groups.

Human capital

12. Human capital is most commonly understood in terms of individuals' education and skills relevant for the labour market. However, it can also be understood in terms of the sum of competencies and knowledge embodied in an individual, including their health status as well as non-cognitive skills and personality traits such as self-confidence, perseverance, adaptability or dependability. In terms of an individual's psychological resilience in the face of shocks, it can be argued that such non-cognitive skills are just as important for maintaining personal well-being as the cognitive skills acquired through formal education. Individuals with a stronger sense of self-efficacy, for example, are more likely to find innovative solutions to problems, and are less likely to succumb to mental health problems such as depression (REF). However, while there has been some interesting work done on this subject, it remains difficult to find measures of non-cognitive skills, or even health, which can be related to vulnerability at the household level. Measuring human capital through the proxy of educational attainment remains the most common approach and it is relatively straightforward to demonstrate that those individuals with lower levels of education are more likely to be unemployed and to enter into low-income jobs.

Social capital

13. The third area of assets contributing to resilience is social capital. Social capital at a societywide level is often measured by generalised trust in others, and is an important driver of other outcomes including democratic participation, crime, health, and the strength of the economy. At a household or individual level, it can be described as the value of people's social networks and personal relations. Asset-poor households that can rely on friends and family for financial support are not nearly as vulnerable as those without anyone to count on. Social connections are essential for wellbeing. Without access to social networks, people can miss out on important information (for example, about jobs) and are unable to fully participate in society.

Collective assets

14. Finally, collective assets refer to the welfare support and services that are publically provided in OECD countries. These can include social safety nets such as unemployment or family benefits, as well as access to public health, education and housing services. The quality and availability of such public services can make a huge difference to the vulnerability status of households between countries. For example, without universal access to healthcare, a person who cannot afford private health insurance is inherently more vulnerable to illness than someone who has access to publically-provided healthcare services.

Resilience

15. Resilience refers to the ability of individuals and households to "bounce back" from adversity. It is an essential component in the analysis of vulnerability, and is strongly linked to the concept of assets (Moser, 1998).⁴

16. Vulnerability is a function of both exposure to risk (*external*) and resilience (*internal*). Asset ownership can be seen as the internal side of vulnerability, where the external side refers to the external risks to which an individual or household is exposed (Chambers, 1989). This two-sided understanding of vulnerability applies regardless of whether the case under examination refers to an individual's vulnerability to joblessness, a community's vulnerability to natural disasters, or an economic system's vulnerability to financial crises.

17. A full assessment of the external side of vulnerability would entail a comprehensive study of every possible risk applicable at every scale of analysis, which would require collecting information on the probability of each event (e.g. of divorce, floods, or collapse in house prices). This is too ambitious a task for the scope of this project. Another approach would be to focus on one particular type of risk or a particular adverse outcome. For example, much good work has been done looking at vulnerability to poverty and deprivation, using indicators of either poverty dynamics (Duncan et al., 1993; 1995; Oxley et al., 2000) or of material deprivation (Whelan et al., 2003; 2006).

18. As the principal aim of this paper is to provide a common conceptual framework for examining different types of vulnerability, rather than on specific dimension, the approach taken here is to focus on the measurement of people's access to different types of assets that play a role in strengthening their resilience across a range of dimensions.

19. Assets play a role in reducing vulnerability and strengthening resilience in various ways⁵:

1. *Risk reduction*. This refers to the way assets increase well-being generally and reduce exposure to risk. For example, better-educated people (with higher stocks of human capital) are generally healthier as they tend to make healthier lifestyle choices.

⁴ "Analyzing vulnerability involves identifying not only the threat but also the "resilience," or responsiveness in exploiting opportunities, and in resisting or recovering from the negative effects of a changing environment. The means of resistance are the assets and entitlements that individuals, households, or communities can mobilize and manage in the face of hardship. Vulnerability is therefore closely linked to asset ownership. The more assets people have, the less vulnerable they are, and the greater the erosion of people's assets, the greater their insecurity." (Moser, 1998, p.3).

⁵ Based on the three categories of risk management outlined in Siegel and Alwang (1999).

- 2. *Risk mitigation*. This refers to the way assets can reduce the impact of an adverse shock, or help to speed up the transition out of a disadvantaged situation. Buying insurance or accumulating savings beforehand is one of the way in which assets can cushion the shock.
- 3. *Coping*. This refers to actions taken following an adverse event to moderate or offset welfare losses, such as selling off physical assets in order to smooth consumption.

20. The different categories of assets are highly inter-related, as high levels of one type are likely to reinforce other types. For example, wealthier families are likely to have higher levels of educational attainment and health status. While there are differences between the properties of different types of assets, what is important is the substitutability of different types of assets. For example, if a household is not wealthy but is able to count on financial and other types of support from family and friends then it is relatively less vulnerable than a household with similar amounts of own wealth but without a strong social support network. Low levels of one type of asset do not necessarily mean that an individual or household is inherently vulnerable; it is the composition of the overall 'asset portfolio' that matters. For example, a person who is asset-poor but who has high levels of human capital, a supportive family and access to welfare benefits and public services is likely to be able to withstand a reasonable period of time without income in the case of job loss or illness. Further, such a person will be more likely to find a new job quickly or receive appropriate care (from health services or personal network), thereby reducing the time spent in need, and recovering levels of well-being comparable to before the shock. It is when individuals and households lack sufficient assets in more than one area that vulnerability is heightened.

21. The following chapters look at each type of capital in turn, exploring the specific ways in which they can contribute to reducing vulnerability and identifying the most appropriate indicators. The final chapter summarises the recommended indicators and highlights the key areas where better data and indicators are needed.

CHAPTER 2. ECONOMIC CAPITAL

Economic capital assets and vulnerability

22. The most basic way that people protect themselves against risks and uncertainty about the future is through the accumulation of privately owned, economic assets in the form of money (as a store of value), financial assets, and real assets such as dwellings. While none of these offer absolute resilience against risks, those people that have most of these are better placed than those without to withstand risks in the future.

23. Economic capital contributes to resilience in different ways. First, economic assets provide a store of wealth that can be drawn upon to smooth consumption in times of need - for example when faced with temporary income loss or unexpected large expenses. Wealth can either be used directly (as money in savings accounts or other easily liquidised financial assets), or can be used to provide access to credit (for example, by re-mortgaging a property). Assets such as property or cars can also be sold off to boost liquidity. It is also important to note that resilience does not only lie in an individual's store of wealth, but also on the potential ability of that individual to access resources if required. Financial exclusion is a key element of vulnerability in this respect - individuals who don't have access to credit through the banking system are particularly vulnerable.

24. Second, some economic assets provide imputed income streams. For example, those who own their homes outright will gain imputed rent on the property, which is likely to far outweigh the related costs.

25. Third, some economic assets provide services that contribute to economic security beyond their value as a store of wealth. Again, home ownership is an obvious example - those with a roof over their heads and a home for their families have one thing less to worry about. But also, those who lose their job but own a car and a computer will have an advantage when looking for new employment.

26. This section provides evidence that traditional income poverty measures are insufficient to capture the notion of economic vulnerability. In particular it shows that income-based and asset-based measures capture different aspects of vulnerability; that the prevalence of income poverty and asset poverty may be different; that the groups of the population exposed to the risks of income and asset poverty many not have the same socio-economic characteristics that economic capital increases resilience; and that current liquid assets availability is a powerful predictor of future income poverty.

27. However, while accumulation of economic capital may provide a shield against many risks threatening well-being, it can also imply new risks when high levels of debt are incurred alongside the asset. These risks are higher where households lack the relevant financial knowledge to manage their wealth (Box 2.1). For example, while home ownership seems to be ä strong overall indicator of resilience, it can imply an increased exposure to sudden changes in asset prices when the house is heavily mortgaged. In an uncertain housing market this may lead to a risk of negative equity and exposure to over indebtedness.

Box 2.1. The importance of financial literacy and consumer protection

Financial literacy represents one important point of contact between human and financial capital. Research finds a correlation between financial knowledge and behaviour. Those who score higher on financial literacy tests are more likely to follow recommended financial practices. Compared with those who have less financial knowledge, those with more financial knowledge are also more likely to engage in recommended financial behaviours — such as paying all bills on time, reconciling the check-book every month, and having an emergency fund (Hogarth and Hilgert 2002).

Over the past decade, policymakers around the world have increasingly considered financial literacy as a key pillar of financial market stability. As financial markets become more sophisticated and households assume a growing share of the responsibility and risk for financial decisions, financial education is necessary to ensure sufficient levels of investor and consumer protection.

Innovation and increasing complexity in the credit markets are transferring additional financial risks to individuals, who have difficulty in evaluating credit option available to them and understanding the term and conditions of their credit products. Moreover, surveys in OECD and other countries continue to show that consumers have low levels of financial literacy and often overestimate their skills, knowledge and awareness when it comes to credit products. The consequences of uninformed credit decision can be disastrous, especially if the credit in question concerns a mortgage loan, which may be the most important financial commitment an individual or household ever makes (OECD, 2009).

In order to fulfil needs expressed and gaps identified by key international stakeholders in the financial education area, the OECD has established an International Gateway for Financial Education (<u>www.financial-education.org</u>) where major financial education stakeholders are invited to provide further information on their programmes/initiatives or on research work relative to financial education.

28. The approach adopted in this chapter is to analyse economic vulnerability along three dimensions: asset availability, subjective financial strain and basic deprivation. The next section of this chapter will provide evidence of how economic assets reduce vulnerability and seek to identify a class of economically vulnerable individuals, in the sense of being distinctive in their risk of falling below a critical resource level, exposure to deprivation and experience of economic stress. The following section will focus on the best available indicators of people's vulnerability in the field of economic capital.

Asset poverty and its relevance for resilience

29. Income insufficiency, relative⁶ to some socially acceptable minimal level of income need, is one of the most common criteria to define poverty in rich countries and policies are often explicitly crafted to reduce income poverty. Income is a good proxy of the living standard of an individual or a family; yet, it is not without shortcomings. First, income fails to represent the full amount of available resources, as individuals can also rely on real and financial assets to cope with the needs of everyday life and to face unexpected events. Second, income poverty measures refer to a static condition and do not inform about a household's ability to endure adverse income shocks in the future.

^{6.} For purposes of poverty analysis, income generally includes all labour incomes, private transfers, pensions and other insurance benefits, cash public social assistance, cash rent, interests, dividends and other returns on financial assets, possibly net the of interest paid on mortgages and other household debts. Income can be computed before (like in the U.S.) or after (like in the EU) direct taxes and social security contributions (Brandolini *et al.*, 2010).

30. A key argument in the current debate about poverty measurement is that income alone is an insufficient indicator of economic well-being. Following the concept of *asset poverty* first advanced by Oliver and Shapiro (1997), Haveman and Wolff (2005) define a household as being 'asset poor' if *"the access that they have to wealth-type resources is insufficient to enable them to meet their 'basic needs' for some limited 'period of time'*". Haveman and Wolff (2005) operationalise asset-poverty as the lack of wealth to maintain a household for three months without income above a poverty threshold proposed by the National Research Council.⁷

31. The relationship between asset and income poverty measures is complex. A household experiencing temporary low income due to job loss of a household member could be classified as income poor. In fact such a household may not experience economic hardship if liquid assets are available to smooth consumption over income fluctuations. Figure 2.1 shows the asset- and income-poverty regions, where Y represents an individual's income and NW represents an individual's assets (in terms of net worth).⁸ In this space Z represents the income poverty line, while the asset poverty line (ζZ) corresponds to the income poverty line multiplied by a fraction ζ equal to the length of the reference period (in this case three months equal to one-quarter of the income poverty line). An individual is asset-poor if NW< ζZ ; whilst income poverty occurs if Y<r NW, where r is the (weighted) average rate of return on assets.

32. Taking assets into consideration allows distinguishing, among the income-poor, who have sufficient wealth to keep them at the poverty line for a period of at least $\zeta \ge 12$ months (the "income poor only", represented by the dotted area in Figure 2.1), from those who lack this buffer (the "asset and income poor", shown by the grey area). Both groups experience low income, but the latter are clearly worse-off than the former. A third group comprises the "asset poor only", who currently have sufficient income to achieve the minimally acceptable standard of living but do not have enough assets to protect them from a sudden drop of their income (blue area) (Brandolini *et al.*, 2010). For the purposes of the analysis presented in this chapter, this last group represents those who are vulnerable because of insufficient economic capital.

^{7.} The choice of three months is based on the assumption that a major event associated with economic hardship is job loss. The expected duration of unemployment is estimated as 2.2 to 4.2 months (Haveman and Woll, 2005).

^{8.} Net worth is defined here as the difference in value between total marketable assets and total liabilities.





Source: Brandolini et al., 2010.

Income-based and asset-based measures provide different insights into vulnerability

33. The conventional income poverty headcount gives the share of households with disposable income falling below 50% of median income in each country and in the specified year. Household disposable income includes earnings (*i.e.* wages and salaries, as well as income from self-employment activities), capital income (*i.e.* interests and dividends, rental income, income from savings plans, royalties and other property income), private transfers (*i.e.* occupational and other pensions, alimony, regular transfers from other institutions) and public transfers (*i.e.* social as well as public social assistance).

34. The counterpart of household disposable income, with respect to asset-based poverty measures, is the concept of net worth, which consists of financial assets and non-financial assets net of total debt. The net worth poor (or asset poor) are those who are unable to survive at least 3 months if forced to sell all their wealth (including the house where they live) and consume the proceeds.

35. Income poverty and asset poverty indicators convey a different picture of the level of economic vulnerability. Table 2.1 compares measures of income and asset poverty for nine countries, based on the data from the *Luxembourg Wealth Study* (LWS). The LWS database contains harmonized wealth micro-datasets from ten rich countries.⁹ These wealth datasets also include comparable income

^{9.} Data for Austria are not shown here because only information on the total amount of financial assets is available in the LWS dataset, and the estimation of liquid asset poverty based on this information seems unreliable.

data, and both components are used in this chapter. As shown in Table 2.1, on average the share of households with insufficient net worth is two to three times higher than the share of people who are counted as income poor. Only in Italy, which has the highest median net worth among the countries considered, the share of asset poor households is marginally higher than the income-poverty headcount.¹⁰

36. In case of a shock not all marketable assets may be sold easily. For this reason, measures of asset-based poverty can also be computed limited to liquid assets. Not surprisingly, the share of liquid asset-poor is much higher than the share of income-poor. In Germany, Sweden and Finland the share of liquid asset poor is four times as high as the share of income poor.

	Canada	Finland	Germany	Italy	Norway	Sweden	LIK.	US-PSID	US-SCE
	(1999)	(1998)	(2002)	(2002)	(2002)	(2002)	(2000)	(2001)	(2001)
Poverty line	10.327	7.956	8.736	7.591	12.123	8.934	8.979	12.989	10.562
Mean disposable income	14.215	11.277	13.146	10.546	17.168	12.776	12.892	20.629	18.325
Median disposable income	11.938	9.603	10.879	8.868	14.569	11.256	10.907	15.349	12.459
Income poor	16,5	10,6	12,9	12,5	12,0	10,2	14,6	17,4	19,5
Mean net worth	36.475	33.968	51.492	70.342	-	-	57.051	65.957	87.437
Median net worth	13.020	18.545	12.914	42.268	-	-	26.071	14.2	13
Net worth poor	33,8	28,3	38,8	14,3	-	-	24,7	33,2	31,7
Income and net worth poor	11,3	5,7	8,4	4,4	-	-	5,4	11,0	11,2
Mean financial assets	10.962	6.547	8.448	10.8	17.819	12.441	12.011	28.061	42.155
Median financial assets	863	1.301	0	2.817	3.754	2.461	1.544	1.333	1.95
Liquid asset poor	56,5	49,0	52,3	31,7	36,1	42,8	46,0	52,6	44,6
Income and liquid asset poor	13,4	7,7	10,4	9,2	6,8	6,0	9,7	14,7	15,1

Table 2.1. Distribution of income and financial assets by country

Note: All values are in US dollars at purchasing power parities.

Source: Brandolini et al., 2010.

37. Interestingly, when the net worth non-poor are taken out from the income poor, poverty falls by several percentage points (*e.g.* in Italy it falls from 12.5% to 4.4%). On the other hand, taking out the liquid asset non-poor from the income poor reduces the poverty headcount by only 2-3 percentage points (*e.g.* in Germany the rate falls from 12.9% to 10.4%). This means that while most of the income-poor have some kind of marketable assets, only few income poor have adequate liquid assets (Brandolini, 2009). At the same time, there is a large share of households who are liquid asset poor even if they are not income poor (*e.g.* 22.5% in Italy). These households are not taken into account by anti-poverty policies even if they potentially face important economic risks.

^{10.} This may reflect the peculiar household composition of Italy, characterised by a very low share of households comprising a single person aged less than 65 (9.5% compared to 19.3% of the average), a very low share of single parent households (0.6% compared to 3.1% of the average) and a higher share of couples with children of 18 years old or more (14.3% compared to 4.3% of the average).

Who are the poor?

38. Income poverty and asset poverty have different socio-economic profiles. Table 2.2 shows the share of income poor, net worth poor and liquid asset poor in the population, calculated across eight rich countries. Several patterns stand out. First, the incidence of both income poverty and of economic insecurity (when measured by both the net wealth poor and the liquid asset poor) is U-shaped in household size. Single-person households as well as households with five people or more are those with the highest proportion of income, net worth and liquid asset poor. In particular, the share of net worth poverty is remarkably high among single-person households (39.2%), while households with five or more people seem particularly at risks of experiencing liquid asset poverty: 56% of these households are liquid asset poor while the average share is 44.5%.

39. Second, when looking at the family structure, single parents with children are the most vulnerable. The share of single parents who are net worth poor is twice the average, while the share of income and liquid asset poor is also much higher than the average.¹¹ Couples with children aged less than 18 years old also face an above-average risk of economic vulnerability (*i.e.* higher share of net worth and liquid asset poverty) despite showing a below-average level of income poverty. By contrast, couples with children aged more than 18 and couples without children face much lower risk of both income and asset poverty.

			N <i>i i</i>				
	Income	poor	Net worth	n poor	Liquid asset	poor	
Number of o	components	in the house	ehold				
1	22,4	(41.9)	39,2	(38.9)	48,0	(33.1)	
2	12,4	(25.5)	23,8	(25.8)	36,3	(27.5)	
3	14,6	(13.2)	33,0	(15.9)	47,1	(15.8)	
4	12,0	(9.8)	26,0	(11.2)	47,6	(14.3)	
5 or more	21,0	(9.5)	33,7	(8.1)	56,0	(9.4)	
Total	16,4	(100.0)	30,9	(100.0)	44,5	(100.0)	
	Family ty	/pe					
Single less than 65 v. old	20.8	(24.5)	48.3	(30.1)	52.3	(22.6)	
Single 65 y. old and over	25,1	(17.4)	23,9	(8.8)	40,9	(10.5)	
Couple less than 65 y. old no children	9,5	(10.9)	26,5	(16.3)	36,8	(15.7)	
Couple 65 y. old no children	10,9	(5.2)	7,7	(1.9)	21,9	(3.9)	
Single parent with children	30,3	(5.7)	61,9	(6.2)	72,3	(5.0)	
Couple with children aged more than 18 y. old	8,3	(2.4)	17,0	(2.6)	33,8	(3.5)	
Couple with children aged less than 18 y. old	15,9	(28.5)	33,8	(32.0)	52,4	(34.4)	
Other	16,0	(5.4)	12,0	(2.1)	34,8	(4.3)	
Total	16,4	(100.0)	30,9	(100.0)	44,5	(100.0)	
Sex of t	he head of t	he househol	d				
Male	11,5	(47.6)	26,5	(58.1)	40,1	(61.3)	
Female	26,8	(52.4)	40,3	(41.9)	53,7	(38.7)	
Total	16,4	(100.0)	30,9	(100.0)	44,5	(100.0)	

Table 2.2. Socio-demographic characteristics of the poor

^{11.} Household types with above-average liquid asset poverty rates nonetheless constitute a small share of the population of concern. For example, single parents with children, despite facing elevated risks, account for 5.7% of all the income poor, 6.2% of all the net worth poor and 5% of all the liquid asset poor population.

Note: The statistics are computed across the following countries: Canada, Finland, Germany, Italy, Norway, Sweden, the United Kingdom and the United States. Numbers in brackets refer to percentage compositions.

Source: OECD's calculations based on the Luxembourg Wealth Study (LWS).

40. Finally, female headed households face a higher risk of income, net worth and liquid asset poverty. These households account for the majority of the income poor (52%) while male headed households represent the largest share of the asset poor households. This likely reflects greater female longevity, and hence a higher female proportion in the older (and relatively asset-rich) age group.

Economic capital assets increase resilience

41. Some economic assets provide services that contribute to resilience beyond their value as a store of wealth. For instance, the ownership of a house has a significant impact in protecting households against the risk of poverty and the poor outcomes associated with a fall in income.

42. Evidence shown in Table 2.3 suggests that, in Europe, households owning their own residence are less affected by different forms of deprivation, independently by the quintile of income they pertain to. In particular, the lowest levels of deprivation are registered among the households owning their own homes outright. Only 26.5% of those households are unable to face unexpected expenses, while the rate goes up to 48.6% among the tenants paying rent at market rate and 61.1% among those paying rent at a reduced rate. Again, when it comes to keeping home adequately warm or affording a healthy diet (*i.e.* a meal with meat, chicken or fish every second day) households owning their own homes are better off than the others.

Table 2.3. Households by deprivation, tenure and equivalised income

	Inabili	ty to face un	expected exp	oenses	Inability to keep home adequately warm				
	Owner not paying a mortgage	Tenant at market rate	Accommoda tion rented at reduced rate	House free of use	Owner not paying a mortgage	Tenant at market rate	Accommod ation rented at reduced	House free of use	
1st quintile	53.2	71.4	77.6	67.9	25.4	24.1	26.1	30.5	
2nd quintile	33.9	72.0	72.2	41.3	11.3	17.4	18.1	14.6	
2rd quintile	24.5	53.3	61.1	30.7	5.8	8.9	11.9	8.2	
4th quintile	15.5	37.2	44.2	17.0	2.8	4.7	7.0	5.5	
5th quintile	6.7	16.6	23.8	9.2	1.4	2.0	4.0	2.9	
All	26.5	48.6	61.1	46.9	9.5	9.8	14.3	18.9	
	Ina	ability to affo	ord a health d	iet	Arrears on utility bills				
	Owner not paying a mortgage	Tenant at market rate	Accommoda tion rented at reduced rate	House free of use	Owner not paying a mortgage	Tenant at market rate	Accommod ation rented at reduced	House free of use	
1st quintile	24.3	29.0	29.2	29.4	11.0	16.8	27.0	19.8	
2nd quintile	7.2	24.9	20.1	9.7	6.2	12.6	17.0	11.5	
2rd quintile	4.5	13.3	12.9	6.3	4.5	7.8	12.1	6.7	
4th quintile	2.7	7.2	6.8	5.0	3.3	5.3	6.6	5.8	
5th quintile	1.1	2.7	4.8	2.6	1.6	2.6	4.9	6.4	

Percentage rates, 2008

Source: OECD's calculations based on EU-SILC.

43. Comparing the indicators of material deprivation used in Table 2.3 (*i.e.* being able to afford a healthy diet, to keep home adequately warm and to meet unexpected financial expenses) with the debt servicing ratio also illustrates how economic assets reduce vulnerability.

44. Households that do not hold debts are better off than their indebted counterparts and show much lower rates of material deprivation (Figure 2.2). Considering the EU average, the share of households that are not able to keep their own home adequately warm is 11% among those without debts, while it is 15.6% among households with a debt servicing ratio lower than 33% and 17.3% among those with a debt servicing ratio exceeding 33% of their income. The share of households that cannot afford a healthy diet is 9.1% among those without debts, while it is 14.5% among households with a debt servicing ratio higher than 33%. Finally, the share of households that cannot face an unexpected financial expense is significantly higher among households with a high debt servicing ratio.

Figure 2.2. Households experiencing different forms of material deprivation by level of debt servicing



Percentage rates, 2008

Source: OECD's calculations based on EU-SILC ad-hoc module on over-indebtedness and financial exclusion.

45. Table 2.4 shows the distribution of households with a debt servicing ratio higher than 33% by country and household characteristics. At the EU level, the share of households with a high debt burden increases with the household size. Households made up of two components are better off than any others; while households with five or more components have the highest level of debt burden (9% compared to an average of 6%). Household type has a sizeable impact. Single-parent households have the highest level of debt burden (13.8%, more than double the average rate) followed by households with two adults with children (8.2%).

Table 2.4. Households with debt servicing above one third of their income by selected characteristics

	Number of components in the household						Type of household						
Country	1	2	3	4	5 or more	One person <65 household	One person >65 household	Two adults <65, no children	Two adults >65, no children	Single parent household	Two adults with children	Other households	All
Austria	10.6	9.6	13.8	16.7	16.1	14.3	4.8	13.3	2.1	23.4	17.1	11.4	12
Belgium	5.4	2.9	5.2	4.6	8.4	7.7	1.8	3.5	0.6	11.4	5.1	5.6	4.8
Bulgaria	6.3	5.9	6.6	6	11.4	9	5	7.1	4.4	14.8	8.3	7.1	7
Czech Republic	5.1	5.4	8.8	7.5	7.6	9.5	0.6	6.6	1.4	14.9	9.8	5.2	6.5
Denmark	5.6	2.4	4.3	3.5	5.1	8.2	-	2.2	0.9	9.2	3.6	5	4.3
Estonia	1.4	1.1	3.1	1.7	2.4	2.3	0.3	0.8	0.5	3.6	3.5	0.5	1.7
Finland	4.2	0.9	3	1.1	2.4	5.8	1.6	0.8	0.4	5.5	2.1	0.9	2.6
Greece	10.5	7.2	10.7	10.9	9.7	14.9	5.4	9.8	4.7	23.8	11.5	9.4	9.7
Hungary	2.9	4.1	5.4	6.1	9.8	5.3	0.8	5.1	1.6	8.7	7.7	4.7	4.9
Ireland	6.3	5.9	11.5	11.1	11.3	10.4	1.4	8.5	1	14.9	11.2	9.2	8.6
Italy	3.5	3.4	4.8	6.9	9.8	5.7	1.5	4.6	1.7	9.7	7.1	4.8	4.7
Latvia	4.7	6.1	6.9	7.4	3.5	6.6	2.8	6.8	2.7	14.6	7.6	4.5	5.8
Lithuania	0.1	1	0.3	0.2	0.7	0.1	-	1.3	0.2	1.8	0.6	0	0.4
Luxembourg	1.5	1.2	2.6	1.1	1.5	2	0.7	1.4	-	4.6	1.8	1.4	1.5
Nederlands	6.8	3	5.2	4.8	6.2	10	0.3	2.9	2.1	13.2	4.8	3.7	5.1
Poland	0.4	0.2	0.1	0.1	-	0.7	0.1	0.2	-	0.3	0.1	0	0.2
Portugal	0.9	1.2	2.7	1.5	1.8	2	0.3	0.2	0.4	8.5	2.6	1.2	1.6
Romania	4	2.4	3	4.8	3.7	5.3	2.6	3.5	0.7	9.6	4.4	2.7	3.5
Slovak Republic	3.2	3.4	5.1	7.4	7.2	5.8	1.1	4.2	0.9	15.8	7.6	5.2	5
Sweden	1.1	0.4	1.7	0.8	1	1.7	0.2	0.4	0.3	1.8	1.1	0.5	0.9
Spain	2.5	1.9	2.5	1.9	5.1	4.3	0.7	2.5	0.5	10.6	3.1	1.6	2.3
United Kingdom	13.5	14	19.3	24	26.1	21.9	4.1	18.8	5.3	24.2	23.7	19.2	16.9
European Union	5.9	5.3	6.6	7.6	9	9.5	1.9	7.1	2.1	13.8	8.2	5.7	6.4
Iceland	10.7	3.5	9.6	4.6	7.2	14.7	1.7	2.6	1.2	15.6	7.1	4.9	7.2
Norway	3.1	1.3	3.5	1.2	1.7	4.5	-	1.3	0.2	5.9	1.6	2	2.3

Percentage rates, 2008

Note: Household equivalised disposable income. Data for France, Germany, Malta and Slovenia are not available.

Source: OECD's calculations based on the EU-SILC ad-hoc module on over-indebtedness and financial exclusion.

Liquid asset availability decreases the odds of being poor in the future

46. Liquid asset availability is important as it can act as a cushion against hard times not only in the present, but also in the future. Households that cannot rely on a sufficient amount of liquid resources (such as the resources to cope with unexpected expenses) are more likely to end up in poverty in the future.

47. Longitudinal data from EU-SILC allow the assessment – over a three-year period (2006-2008) –of a household's permanence in a state of liquid asset difficulty and its relation with the probability of falling into poverty. Table 2.5 shows the share of households that were non-poor in 2006 but fell into poverty in 2008. As in EU-SILC households were asked about the ability to cope with *possible*, unforeseen expenses, it should be noted that answers reflect individual experiences and may be influenced by people's own perceptions and expectations of the world. For this reason the measure of liquid asset poverty used here is referred to as "*subjective* liquid asset poverty". At the EU level, 7.2% of households that were not income poor in 2006 became poor in 2008. However, poverty seems to strike harder households that were subjectively liquid asset poor in 2006 (11.8%) than households that were not (5.1%).

48. At the EU level, household that were subjectively liquid asset poor in 2006 faced a much higher risk of being objectively poor in 2008 than households that did not report financial difficulties in 2006. In particular, in Latvia, Luxembourg and Belgium households that declared being subjective liquid asset poor in 2006 faced a risk of being poor in 2008 four times higher than their subjective non-poor counterparts. Similarly, in Bulgaria, Czech Republic, Hungary and Sweden the share of households that fell into poverty in 2008 was more than three times higher among the households that were liquid asset poor in 2006.

	Subjective liquid asset poor in 2006					
Country	No	Yes	Total			
Austria	4.8	13.9	6.6			
Belgium	3.6	14.9	5.5			
Bulgaria	3.8	14.1	11.9			
Czech Republic	1.5	4.8	2.8			
Denmark	4.7	9.0	5.4			
Estonia	7.1	13.2	9.9			
Finland	7.0	13.3	8.3			
Greece	7.6	12.1	8.9			
Hungary	2.5	9.0	5.7			
Ireland	3.9	8.7	5.5			
Italy	5.6	13.4	7.3			
Latvia	3.0	19.1	14.4			
Lithuania	6.9	15.7	11.9			
Luxembourg	3.9	17.9	6.0			
Nederlands	2.9	9.1	3.8			
Poland	3.8	9.3	6.8			
Portugal	8.0	16.6	9.2			
Slovak Republic	3.3	6.2	4.7			
Sweden	5.0	20.1	6.5			
Spain	8.9	19.3	11.6			
United Kingdom	8.7	18.7	10.7			
European Union	5.1	11.8	7.2			
Iceland	4.6	8.6	5.6			
Norway	5.1	9.0	5.9			

Table 2.5. Households who moved into inco	me-poverty in 2008 b	y self-reported liquid	assets in 2006
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Percentage rates

Note. Households with income above the poverty threshold in 2006 who were counted as income poor in 2008. Data for France, Malta, Germany, Romania and Slovenia are not available.

Source: OECD's calculations based on EU-SILC.

49. Another important factor to consider is vulnerability persistence (*i.e.* the length of the liquid asset poverty spell). Table 2.6 analyses the duration of subjective liquid asset poverty status from 2006 to 2008. Households in the panel have been classified according to their permanence in the state of subjective liquid asset poverty.

Table 2.6. Persistence of liquid asset poverty

Percentage of households, 20	06-2008
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Country	Subjective liquid asset poverty in 2006-2008				
	Always	At least once ^a	Never	Total	
Austria	12,0	29,6	58,5	100,0	
Belgium	13,1	16,2	70,8	100,0	
Bulgaria	53,9	40,7	5,4	100,0	
Cyprus	25,8	35,8	38,3	100,0	
Czech Republic	28,5	25,4	46,2	100,0	
Denmark	4,9	22,0	73,1	100,0	
Estonia	10,9	30,1	59,0	100,0	
Finland	12,7	21,4	65,8	100,0	
Greece	18,7	31,7	49,6	100,0	
Hungary	38,7	41,3	20,0	100,0	
Ireland	25,5	26,5	48,1	100,0	
Italy	14,5	29,4	56,2	100,0	
Latvia	53,6	32,0	14,4	100,0	
Lithuania	29,2	41,5	29,3	100,0	
Luxembourg	13,6	19,6	66,8	100,0	
Netherlands	7,8	16,2	76,0	100,0	
Poland	44,4	25,5	30,0	100,0	
Portugal	8,5	25,9	65,6	100,0	
Slovakia	26,9	38,7	34,4	100,0	
Sweden	6,2	17,2	76,6	100,0	
Spain	13,5	31,8	54,6	100,0	
United Kingdom	12,8	22,0	65,2	100,0	
European Union	21,6	27,6	50,8	100,0	
Iceland	10,4	28,9	60,7	100,0	
Norway	4,7	22,9	72,4	100,0	

Note a: Figures in this column do not consider the households that had been always liquid asset poor during the timeframe 2006-2008.

Source: OECD's calculations based on EU-SILC. Data are not available for France, Malta, Germany, Romania and Slovenia.

50. At the EU level, the share of those who have been '*always* liquid asset deprived' from 2006 to 2008 accounts for 21.6% of the panel sample, although there is big variation across countries. In Latvia, Poland, Bulgaria and Hungary the share of households that could not deal with unexpected financial expenses throughout the whole period is higher than 30%; while it is lower than 10% in Portugal, the Netherlands, Denmark and Sweden. The share of households that declared being '*at least once* liquid asset poor' in the three-year period is 27.6% at the EU level. Overall 49.2% of households lacked financial resources at least once in the three-year period, this share ranging from 23.4% for Sweden to 94.6% for Bulgaria.

51. Table 2.7 illustrates the relationship between the permanence in liquid asset deprivation and the risk of poverty. The table shows the percentage of poor households in 2008 (as a share of non-poor households in 2006) by permanence in liquid asset deprivation. At the EU level, households that have been 'always liquid asset deprived' faced a high risk of being poor in 2008 (15%), this risk being remarkably lower (3.9%) among the 'never asset deprived' households.

Table 2.7. Persistence of liquid asset pov	erty among households with income	above the poverty threshold
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Percentage rates,	as share of	households	not	poor in	2006
				P • • • · · ·	

	Subjective liquid asset deprivation in 2006-2008			
Country	Always	At least once ^a	Never	Total
Austria	24.7	9.2	3.2	6.6
Belgium	18.6	8.8	3.2	5.5
Bulgaria	19.8	4.6	1.3	11.9
Czech Republic	6.3	2.9	0.9	2.8
Denmark	18.8	9.2	3.6	5.4
Estonia	32.7	15.3	5.1	9.9
Finland	16.8	15.5	5.1	8.3
Greece	17.1	13.5	4.6	8.9
Hungary	10.7	4.1	1.3	5.7
Ireland	10.6	4.7	3.8	5.5
Italy	17.0	10.6	4.2	7.3
Latvia	26.3	5.4	1.2	14.4
Lithuania	23.5	11.0	4.6	11.9
Luxembourg	24.3	13.1	2.5	6.0
Nederlands	13.0	6.9	2.4	3.8
Poland	11.5	4.7	3.2	6.8
Portugal	21.5	15.1	6.3	9.2
Slovak Republic	7.3	4.4	3.3	4.7
Sweden	24.6	11.8	4.3	6.5
Spain	25.3	15.7	7.3	11.6
United Kingdom	21.3	16.3	7.5	10.7
European Union	15.0	8.8	3.9	7.2
Iceland	15.1	8.7	2.8	5.6
Norway	11.4	10.7	4.4	5.9

Note a: Data for France, Malta, Germany, Romania and Slovenia are not available.

Source: OECD's calculations based on EU-SILC.

52. To further explore the relation between measures of asset and income poverty and the risk of getting poor in the future, a logistic model predicting the probability of being ending up in poverty in 2008 being non-poor in 2006 has been carried out. Figure 2.3 shows clearly that income is the strongest determinant of the likelihood of falling into poverty in the future: households that were in the first or second quintiles in 2006 were 3.6 times more likely of getting poor in 2008 than the rest of the population. Poor-educated people also are at high risk of falling into poverty: people holding a primary school degree (ISCED 0-1) are 3 times more at risk of poverty than their high-educated counterparts.

53. Experiencing subjective liquid asset poverty also stands out as an important factor, with households that have been 'always liquid asset poor' between 2006 and 2008 facing a probability of getting poor in the future almost twice as big as the probability faced by the non-poor households.



Figure 2.3. Probability of moving into income poverty by selected characteristics

Note: Logistic model. Odds ratios refer to the probability of being poor in 2008 starting as non-poor in 2006. For each variables of the model the odds ratios represent the ratio between the odds of each items and the odds of a reference modality equal to 1. In the graph grey bars represent the reference items of each variable.

Source: OECD's calculations based on EU-SILC.

54. The model also confirms that single-person households are at higher risks of becoming poor (1.7) and that the financial burden of housing costs can tip households into poverty (1.5). Fixed assets seem to play a secondary role in protecting against vulnerability, with renters facing a 1.3 times higher probability of falling into poverty than those owning their own home.

Indicators of economic capital to measure vulnerability

55. Vulnerability, as defined for the purposes of this chapter, focuses not on current income inadequacy, but rather insecurity and exposure to the risk of future low incomes, and the probability that, given a negative shock to incomes, the resulting state of low incomes has a long duration and/or results in low levels of consumption and material deprivation (De Haan, 1998; Paugman 1996). Vulnerability in this perspective can also incorporate people's perceptions of their situation (Chambers, 1989; Whelan and Maître, 2008). Therefore, measures of vulnerability should serve as point-in-time indicators of the risk of exposure to *persistent* disadvantage. Moreover, this dynamic objective should be combined with a concern to go beyond measures based on a single indicator (World Bank, 2000). In the words of Kangas and Ritakallio (1998, p. 199): "different methods produce different measures of vulnerability, [...] each of these may be equally correct and realistic. [...] Therefore, a simultaneous use of various measures may be advisable".

56. Despite the emphasis in the literature on both multidimensional and dynamic aspects of vulnerability, little methodological progress has been made in identifying multiple indicators of vulnerability in a dynamic perspective. Such approach would allow not simply documenting those who are experiencing a specific deprivation at a particular point in time, but rather identifying those who are exposed to such deprivation and unable to cope with it. From a policy perspective this would

allow analysis in terms of options that may prevent such vulnerability being translated in actual negative outcomes.

57. An ideal set of vulnerability indicators would include information on households' assets availability, basic deprivation and people's subjective perception of their own financial situation. Measures of vulnerability would benefit from the use of panel data, as the availability of repeated observations adds a crucial dimension (variability) to measures of household welfare. However, such data are both expensive and time-consuming to collect and household wealth surveys may suffer from large sampling errors (due to the high skewness of the sample distribution) and from other kinds of survey errors (Verma *et al.*, 2010). The remaining of this section will look at the relevant data and at the best available indicators of economic vulnerability.

Net worth and liquid assets

58. The main source of data on net worth and liquid assets is the *Luxembourg Wealth Study* (LWS) – an international project carried out between 2002 and 2007 to assemble existing micro-data on household wealth into a coherent database.¹² Twelve countries participated to the project at different points in time: Austria, Canada, Cyprus, Finland, Germany, Italy, Japan, Luxembourg, Norway, Sweden, the United Kingdom and the United States.

59. The surveys in the LWS differ by purpose and sampling frame.¹³ Certain surveys have been designed for the specific purpose of collecting wealth data (*i.e.* Canada, Italy, and the *Survey of Consumer Finances* (US-SCF) in the United States); others cover different areas and have been supplemented with special wealth modules (*i.e.* Germany and the *Panel Survey on Income Dynamics* (US-PSID) in the United States). Some surveys over-sample the wealthy and provide better coverage of the upper tail of the distribution (Canada, Germany and the US-SCF in the United States) but at the cost of higher non-response rates; further, not all over-sample evenly, as only the US-SCF uses a list sample of tax authority records and a large sample of high-wealth persons.

60. Some surveys ask detailed questions about various types of assets, while others ask only a small number of broad wealth questions, but achieve good response rates (*e.g.*, US-PSID).¹⁴ Finally, Germany (alone among the countries included in the LWS) applies a special case of bottom-coding (financial assets, durables and collectibles, and non-housing debt are only recorded when their respective values exceed EUR 2 500).

- 61. Definitions also differ across surveys:
 - In general, the unit of analysis is the household, but it is the individual in Germany, and the nuclear family (*i.e.* a single adult or a couple plus dependent children) in Canada. A household is usually defined as including all persons living together in the same dwelling, but sharing expenses is an additional requirement in Italy, Sweden and the United States. Demographic differences in asset-holdings hence reflect both differences in the unit of analysis and "true" differences in the population structure.

^{12.} See <u>http://www.lisproject.org/lwstechdoc.htm</u>

^{13.} See Sierminska *et al.* (2005) for details.

^{14.} The US-SCF is by far the most detailed survey of those included in the LWS database: checking accounts, for instance, are first separated into primary and secondary accounts, and then distinguished according to the type of bank where they are held.

• The household head is the main income earner in most surveys, but is the person most knowledgeable and responsible for household finances in Germany and Italy. The United States is the only country where the head is taken to be the male in mixed-sex couples.

62. The number and definition of recorded wealth variables also vary considerably across surveys, ranging from seven for the United Kingdom to 30 or more for Italy and the US-SCF. These differences, and the different detail of the questions asked in various surveys, make the construction of comparable wealth aggregates a daunting task.

63. The LWS has approached the comparability issue by defining an ideal set of variables to be included in the database. This starts with a general classification of wealth components, from which totals and subtotals are obtained by aggregation. This set is then integrated with demographic characteristics (including health status) and income and consumption aggregates, plus a group of variables particularly relevant in the study of household wealth: realised lump-sum incomes (*e.g.*, capital gains, inheritances and inter-vivo transfers) and "behavioural" variables such as motives for savings, perceptions about future events (*e.g.*, bequest motivation), attitude towards risk, and so forth.

64. This ideal list was then pared down so that it could be crossed with the information actually available in the LWS surveys. This gives rise to the matrix shown in Table A.1 in the annex, which illustrates the difficulty of transforming the original sources into a harmonised database, as the coverage and aggregation of wealth items vary widely across surveys.

65. An acceptable degree of comparability can be obtained for only four main categories of financial assets: i) deposit accounts; ii) bonds; iii) stocks; and iv) mutual funds (with the partial exception of Germany, which does not record information on checking deposits). The remaining financial components are available only for some countries. For non-financial assets the greatest comparability is obtained for both principal residence and investment real estate, while for business equity data are available only for a subset of countries. Liabilities are present in all surveys, though with a varying degree of detail. Applying the minimum common denominator criterion to the matrix shown in Table A.1, the following LWS aggregates are defined:

- *Financial assets*, which include transaction and savings accounts; certificate of deposits; total bonds; stocks; mutual and investment funds; life insurance; pension assets; and other financial assets.
- *Non-financial assets*, which include the principal residence; investment in real estate; business equity; vehicles; durables and collectibles; and other non-financial assets.
- *Liabilities*, including home-secured debt *i.e.* the sum of principal residence mortgage, other property mortgage, and other home-secured debt (including lines of credit); vehicle loans; instalment debt (including credit card balance); educational loans; other loans from financial institutions; and informal debt.
- *Net worth, i.e.* the sum of financial and non-financial assets less liabilities.
- *Liquid assets, i.e.* the value of cash and other kinds of easily monetizable assets.

66. The LWS aggregates are broadly comparable, yet fall far short of perfect comparability, since underlying definitions and methods vary across surveys. Moreover, these aggregates fail to capture important wealth components, such as business equity and pension assets. As their importance differs across countries, cross-national comparisons are bound to reflect these omissions.

67. Sierminska *et al.* (2006) provide a synthetic assessment of the information contained in the LWS database and compare the LWS-based estimates with their aggregate counterparts in the national balance sheets of the household sector (which include non-profit institutions serving households and small unincorporated enterprises). In all countries where the aggregate information is available, the LWS data account for between 40 and 60 % of the aggregate household net worth.

68. Not all of the discrepancies should be attributed to the deficiency of the LWS data. They reflect not only the under-reporting in the original micro sources, but also the dropping of some items in the LWS definitions to enhance cross-country comparability as well as the different definitions of micro and macro sources. As Sierminska *et al.* (2006) demonstrate, once the missing items are included back in net worth, the LWS figures closely approximate those released in the national accounts. On the other hand, and more worryingly, the weight of these omissions is significant and varies considerably across countries.

Material deprivation

69. The use of non-monetary indicators helps to distinguish between situations of resilience – where low income does not translate into material deprivation – and situations of vulnerability – where a fall in income results in a sustained period of material deprivation. Despite the concern that non-monetary indicators of deprivation may reflect choice or taste, the available evidence suggests that such indicators do contain valuable information that, particularly when combined with information on financial constraints, greatly helps identify those experiencing exclusion due to lack of resources.

70. During the period 1994-2001 the *European Community Household Panel* (ECHP) was the primary source for the analysis of poverty and social exclusion in the European Union. The range of data available in the ECHP meant that it was possible to go beyond documenting income poverty levels and adopt a multidimensional perspective on social exclusion. In particular, the availability of detailed information relating to material deprivation encouraged a range of work exploring the relationship between income poverty and deprivation, measurement of economic vulnerability and multidimensional deprivation.

71. With the termination of the ECHP the *European Union Statistics on Income and Living Conditions* (EU-SILC) instrument is potentially the primary source for such analysis. The Eurostat (2005) report on income poverty and social exclusion constitutes the first published effort employing EU-SILC data to address such issues. EU-SILC differs from ECHP in a number of important respects. Of particular interest for the purposes of this chapter is the fact that the range of life-style deprivation indicators available in the former is substantially more restricted and it is consequently more difficult to develop measures that display satisfactory levels of reliability across European societies and at the European level.

72. The set of indicators available in the EU-SILC dataset relates to inability to afford rather basic food, clothing and heat items, enforced absence of particular consumer items, poor housing conditions and difficulty in financial coping, according to the following scheme:

- *Inability to afford basic needs*, which refers to items that are essential for physical survival (*e.g.* food, clothes, ability to keep the home warm during winter, etc).
- *Inability to afford consumer durables,* which refers to items that are essential to perform everyday life activities (*e.g.* having a telephone) or that significantly ease housework and other domestic tasks (*e.g.* having a microwave oven).

- *Poor housing conditions,* which relates to both the physical characteristics of the dwelling (*e.g.* availability of electricity, water supply, indoor flushing toilet, or whether parts of the dwelling are deteriorated or damaged) and of the area where this is located (*e.g.* exposure to noise, indoor pollution, etc.).
- *Inability to afford basic leisure and social activities,* which refers to items that, while not essential for physical survival, are critical for enjoying a decent quality of life (*e.g.* having a week of holiday away from home at least once per year, or occasionally inviting friends and relatives home for drinks or meals).
- *Difficulty in financial coping,* which refers to experiencing arrears on rent, mortgage or unity bills and difficulty to make ends meet.

Objective and self-reported indicators of debt burden

73. The burden of debts gives a measure of the vulnerability of a household's net worth position. While it is essentially a measure of flows rather than stocks, it nonetheless gives an idea of the size of debt in comparison to a household's economic resources. Debt burden can be measured using both objective and subjective indicators. In the EU-SILC dataset information is available on households' perception of their financial burden of the total housing cost and their financial burden of debts from hire purchases or loans. In both cases it is possible to identify households which consider commitment payments as a heavy burden. As for objective indicators of debt burden, the EU-SILC ad-hoc module on over-indebtedness and financial exclusion collected in 2008 provides measures of:

- Estimated total amount unbalanced on household's banks accounts;
- Estimated total amount unbalanced at the last monthly statement on household credit/store cards;
- Estimated total amount currently in arrears for other non-housing household bills;
- Estimated total amount currently in arrears for household housing bills/repayments;
- Estimated total amount currently in arrears for household other loans and credit repayment.¹⁵

Subjective illiquidity

74. An indicator of "subjective illiquidity"¹⁶ can be build upon data from the EU-SILC dataset. Respondents are asked the following question: "*Could your household afford an unexpected required expense of (amount to be filled) with its own resources?*"¹⁷ 'Own resources' refers to the situation

^{15.} For all variables the amount owed is classified with respect to the household monthly disposable income in the following classes: less than 10%; more than 10% and less than 30%; more than 30% and less than 100%; more than 100%.

^{16.} The term subjective illiquidity (or subjective liquid asset poverty) stresses the subjective dimension of the indicator, based on households' perception of their own finances.

^{17.} For the calculation of the amount that should be filled, the national at-risk of-poverty threshold has to be used per one consumption unit, independently of the size and structure of the household. A ratio of 1/12 of the above value is used in the questionnaire. As a consequence, the amount varies across

where the household does not need ask for financial help from anybody, or the household's account has to be debited within one month, or the situation with regard to potential debts does not deteriorate or the household does not intend to pay on instalments or with a loan the usual expenses previously paid in cash. This indicator provides additional information for an all-sided picture of households' net worth. The use of good-quality longitudinal data (*i.e.* EU-SILC), providing both information on people's perceptions of poverty and objective measures of vulnerability, allows to explore whether households that are subjectively asset poor today are likely to end up income or asset poor in the near future.

The various indicators capture different dimensions of vulnerability

75. The set of indicators presented in this section summarises information about major dimensions of perceived and experienced vulnerability. It is then important to assess whether and how these indicators are interlinked.

Table 2.8. Subjective and objective indicators of debt burden

	Subjective indicators		Objective indicators		
Country	Financial burden of the total housing cost considered as heavy burden	Financial burden of debts from hire purchases or loans considered as heavy burden	Debt servicing rations higher than 33% but less than 100% of household income	Debt servicin ratios higher than 100% of household income	
Austria	17.3	3.9	6	6.1	
Belgium	32.6	6.3	3.3	1.5	
Bulgaria	45.9	10.3	3.8	3.2	
Czech Republic	25.4	4.7	4.8	1.7	
Denmark	9	3.2	2.1	2.2	
Estonia	17.9	3.1	1.1	0.6	
Finland	20.3	5.4	1.4	1.2	
Greece	35.3	9.6	5.4	4.3	
Hungary	36.4	10.2	2.9	1.9	
Ireland	25.4	10.5	5.2	3.4	
Italy	57.9	7.2	1.8	2.8	
Latvia	29.7	4.8	4.1	1.6	
Lithuania	30.3	2.8	0.4	0.1	
Luxembourg	37.5	12.7	0.9	0.6	
Nederlands	12.5	1.6	3.3	1.7	
Poland	41.7	8.7	0.1	0	
Portugal	38.1	6.8	0.9	0.7	
Romania	39.4	4.3	2.6	0.9	
Slovak Republic	36.1	7.8	3.5	1.5	
Sweden	12.6	4.6	0.3	0.6	
Spain	53.1	14.6	1.6	0.7	
United Kingdom	27.7	8.6	7.8	9.1	
European Union	37.5	7.9	3.3	3.1	
Iceland	17.2	10.1	4.4	2.9	
Norway	7.8	1.9	1.4	0.9	
All	37	7.8	3.3	3.1	

Percentage rates, 2008

countries and over time: for example in Italy it has increased from EUR 600 in 2006 to EUR 750 in 2008.

Note: Objective indicators of debt burden are calculated using the ad hoc module on over indebtedness and financial exclusion collected in 2008. Data for France, Germany, Malta and Slovenia are not available.

Source: OECD's calculations based on the EU-SILC ad-hoc module on over-indebtedness and financial exclusion.

76. Table 2.8 compares subjective and objective indicators of debt burden for European countries. At the EU level, more than one of three households considers the financial burden of the total housing cost a heavy burden (37.5%). Nevertheless, there is remarkable variation among countries, with this rate ranging from 9% for Denmark to 57.9% for Spain. The share of EU households that declare facing a heavy burden of debts from hire purchases or loans is considerably smaller (7.9%). Also in this case Spain remains the country with the highest burden (14.6%), while the Netherlands shows the lowest share (1.6%).

77. Indicators on the debt servicing ratio convey a different picture. In the EU 3.3% of households have a debt servicing ratio between 33% and 100% of the household income, while 3.1% have a debt which exceed the household income. This rate is about three times higher in the UK (9.1%), while in Lithuania only 0.1% of households report to be affected by such a heavy debt burden.

78. The relative lack of overlap between debt burden and subjective measures of debt burden can be partly explained by the deficiencies of the data these indicators are based on and partly by the subjective nature of these measures. Subjective indicators of debt burden reflect people's own perception and expectations of the world. Moreover, these measures are based on a limited number of liabilities, not necessarily giving a true picture of perceived and experienced vulnerability.

79. As for indicators of asset poverty, Figure 2.4 shows the levels of subjective illiquidity in EU countries compared with available indicators of objective poverty from LWS. Unfortunately, the comparison is limited by the small set of countries covered by the LWS. However, it is still possible to draw some preliminary results. The percentage of subjective liquid asset poor varies from less than 20% in Norway, Sweden, Denmark and Portugal to more than 50% in Poland, Latvia, Hungary and Bulgaria. The share of income poor is always lower than the share of subjective liquid asset poor, confirming that vulnerable households are a larger share of the population than income poor.

80. The share of net worth poor approximates the share of subjective liquid asset poor except for Italy, where the levels of net worth and liquid asset poverty are very low. Liquid asset poverty is higher than subjective illiquidity, but this is partly due to the fact that liquid asset poverty is based on a higher threshold than subjective illiquidity: for liquid asset poverty the threshold is set at 1/4 of the national poverty line, while it is 1/12 of the national at-risk-of-poverty threshold in the case of subjective illiquidity.



Figure 2.4. Subjective illiquidity and objective indicators of poverty in EU countries

81. Figure 2.5 shows the correlations among subjective and objective indicators of asset poverty. Subjective illiquidity correlates pretty well with net worth poverty (0.478), while the correlation with income poverty is lower (0.303) (Panel a and b respectively). Subjective illiquidity correlates well also with objective liquid asset poverty (0.431), and this correlation is two times higher (0.985) when Italy is dropped from the analysis (Panel c and d respectively).¹⁸

Note: Data for France, Germany, Malta and Slovenia are not available. Source: EU-SILC and LWS.

^{18.} Italy shows a peculiar pattern, with the share of objective liquid asset poor being lower than the share of subjective liquid asset poor households – while in the other five countries of the sample the reverse holds true. By consequence, taking into account Italy reduces drastically the overall correlation between the two indicators.





Note: Data for Germany refer to EU-SILC 2007. Source: EU-SILC and LWS.

82. The comparison among various indicators of vulnerability would benefit from a larger set of countries covered by the LWS. However, the pretty high correlation values found between subjective indicators from EU-SILC and objective indicators of vulnerability from LWS seems to provide grounds for the simultaneous use of subjective and objective measures in assessing households' economic vulnerability.

Discussion

83. Economic capital contributes to resilience through providing a store of wealth that can be drawn upon to smooth consumption in times of need or by providing imputed income streams. It also provides services that contribute to resilience above and beyond their value as a store of wealth and give a sense of security against different shocks. The evidence shown in this chapter suggests that economic assets are associated with lower levels of material deprivation and lower risks of vulnerability.

84. Vulnerability, as defined for the purposes of this chapter, not necessarily (or not only) involves current deprivation in either income or consumption terms, but rather insecurity and exposure to risk and shock. In this respect, measuring economic vulnerability is a difficult task, as it involves the use of flow and stock measures in a dynamic setting. Moreover, people's perceptions of insecurity and exposure to risks should be taken into account.

- 85. Some general conclusions drawn on the evidence and analysis shown in this chapter are:
 - On average, the share of households with insufficient net worth is two to three times higher than the share of people who are considered income poor.
 - Home ownership has a significant impact in protecting households against the risk of income poverty and the negative outcomes associated with a fall in income.
 - Both fixed and liquid assets help protect against vulnerability, and ideally, both should be monitored.
 - Evidence from subjective and indicators of economic vulnerability indicates that single-person households, households made up of 5 or more components and single-parent households are the most exposed to adverse risks and the vulnerable.
 - Subjective and objective indicators of vulnerability do not overlap perfectly. This can be partly explained by the deficiencies of the data these indicators are based on and. partly by the subjective nature of some of these measures.

86. Micro-data on vulnerability from NSOs are scarcely available and not frequently updated, as data collection is expensive and time-consuming. Moreover they suffer from comparability problems. The best available information (at least at the EU level) on households' economic vulnerability comes from the EU-SILC dataset. EU-SILC contains data on: home ownership, material deprivation, subjective debt burden, subjective illiquidity and objective measures of debt burden. Ad-hoc modules such as that on over-indebtedness and financial exclusion are particularly relevant for the analysis of vulnerability.

87. The analysis presented in this chapter suggests a two tiered approach to indicators of economic vulnerability. The first best approach would be to have indicators derived from high quality data on the distribution of household net worth across the population. This would include information on total net worth, and also information on the level of liquid assets. The key indicators would be:

- measures of the net-worth poor, and
- measures of the liquid asset poor.

88. In practice, however, data limitations mean that such indicators are currently not available on a comparable basis for many countries and, even where available, are unlikely to be able to be updated on a regular and timely basis. The core indicators of economic vulnerability, therefore, will need to come from data that is more frequently available. EU-SILC has two suitable indicators:

- the proportion of the population who do not own their home, and
- the proportion of the population indicating subjective liquid asset poverty.

89. Both measures are associated with a large increase in the risk of a transition into poverty, and both are also associated with lower levels of consumption for a given low level of income than people with an equally low income who either own their own home or do not report liquid asset poverty. In addition, both measures can be reported on an annual basis from EU-SILC.

CHAPTER 3. HUMAN CAPITAL

Human capital assets and resilience

90. Human capital is an intangible asset, embodied in and inseparable from the person who owns it. In contrast to economic capital, which can be drawn upon (and used up) to smooth consumption in times when income is insufficient, human capital is a less fungible yet potentially more endurable element of a person's asset portfolio.

91. The OECD defines human capital as the "knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD, 2001). This is a broad definition, which takes in more than educational attainment – the most commonly-used proxy indicator of human capital – to include aspects such as mental and physical health, personality traits, and ability of all kinds.

92. For the purposes of this chapter, these diverse facets of human capital are categorised into two broad areas: i) education and skills; and ii) health. While all aspects of human capital are closely related (for example, better-educated people also tend to be healthier), education and skills are particularly interlinked. Formal education, while not the only channel through which people acquire skills, is probably the most important. Furthermore, whereas most of the personal attributes making up human capital are difficult to measure directly, comparable data on educational attainment is readily available. It provides a rough indication of people's cognitive and even non-cognitive skill level and it remains one of the most useful proxy indicators of overall human capital. While actual ability is more complex to measure, recent years have seen advances in this area, with international surveys developed to measure the cognitive skills of school-age children as well as the working-age population. Finally, the health component of human capital covers a wide range of physical and mental outcomes, as well as behavioural choices. Alongside its contribution to overall well-being, good health is an essential aspect of a person's productive capacity and ability to function in society.

93. The next section of this chapter will look at the ways that each area of human capital reduces vulnerability. The following section will look at the best available indicators of people's vulnerability in the area of human capital.

Education and skills

94. Better-educated people tend to be healthier, and to have higher paid, more secure jobs. They are also more likely to be satisfied with their housing conditions, to have higher levels of social support, to be more civically engaged, and, to report higher life satisfaction (Ross and Wu, 1995; OECD, 2007; OECD, forthcoming 2011). While the direction of causality between these different dimensions of well-being, and people's socio-economic background are complex, higher educational attainment is a strong predictor of higher well-being outcomes throughout the life course.

95. One of the most obvious ways that education contributes to material well-being is through employment and income. Overall, the more education a person has, the more likely he or she is to be employed, and to be in a better-paid job. Figures 3.1 and 3.2 illustrate this relationship. Furthermore, whereas the relative earnings of people with tertiary education tend to increase with age, the relative earnings of those with below upper secondary level tend to decrease as they get older (OECD, 2010a).



Below upper secondary Upper secondary and **%** 65 post-secondary non-tertiary **Tertiary** education

Employment rates of people aged 25-64

Source: OECD Education Database

96. Education is also positively associated with health status (Ross and Wu, 1995; OECD, 2007. While the positive relationship between education and health status goes both ways, there is substantial evidence to suggest that education has a positive effect on health behaviour and outcomes. A UN (2003) comparative study shows that increases in educational attainment precede improvements in health status; higher education leads to healthier behaviour and higher educated people are more able to gather and understand information about healthy lifestyle choices (UN, 2003, p. 87). More educated people are less likely to be obese, or to smoke, for example (Groot and Maasen Van den Brink, 2006). As a result, education can also be shown to have a positive impact on important health outcomes such as life expectancy, as shown in Figure 3.3.



Figure 3.2. Relative earnings by level of educational attainment, 2008 or latest available year

Upper secondary and post-secondary non-tertiary education = 100

Note: Data years refer to 2005 for Australia, Belgium, Ireland, and Turkey; 2006 for Italy, Luxembourg, the Netherlands, and Portugal; 2007 for Canada, Finland, France, Greece, Japan, Korea, Norway, and Spain; and 2008 for all other countries. *Source*: OECD Education database





Note: High educational attainment refers to tertiary degree while low educational attainment refers to lower than uppersecondary degree

Source: Eurostat, 2010.
97. Educational attainment can also continue to reinforce the accumulation of human capital throughout a lifetime. For example, people with higher levels of educational attainment are more likely to continue to invest in human capital accumulation, through access to adult education and by receiving employer-provided training later in life (Bishop, 1991; Field et al., 2007). As Figure 3.4 shows, the probability of being excluded from adult education dramatically increases for those with lower levels of educational attainment.

Figure 3.4. Adults in employment who have not participated in formal/non-formal education and have not looked for information by educational attainment, 2007



Percentage of the 25-64 year old population

Note: Data years refer to 2008 for Belgium, Canada, and the Netherlands; 2006 for Finland, France, Hungary, Italy, Poland, and the United Kingdom; and 2005 for Sweden.

Source: OECD Education database.

98. The ability and willingness to re-enter education is increasingly relevant for vulnerability as the demand for skills in the labour market rise and evolve. People need to adapt to changes in the labour market and to be willing and able to upgrade their skills, or even change career completely, in order to remain employable. A low initial level of education will be a barrier to such flexibility and development in later life, and therefore lead to lower levels in resilience in the labour market.

Education and employability

99. While education reduces the risk of unemployment, it does not eradicate it completely. Reducing time spent in unemployment is central to avoiding depreciation of one's skills. However, the effect of educational attainment on time spent in unemployment is not clear-cut. On the one hand, higher educational attainment will increase the number of job offers that a person is likely to receive. On the other hand, the higher the level of education, the higher will be a person's reservation wage, thereby potentially increasing the length of time that a person is willing to stay unemployed until they

find a job with a satisfactory wage. However, this latter effect reflects a personal choice and suggests that the person in question can afford to delay re-employment. Overall, the more education a person has, the more likely he or she is to be re-employed (Evans and Koch 2006). Educational qualifications may also have a signalling effect for employers beyond the cognitive skills acquired through learning, e.g. by indicating non-cognitive skills that are valued by employers such as motivation and perseverance (Arkes, 1999).

100. Educational attainment is only an indirect indicator of an individual's abilities. However, directly measuring a person's skills is a more complex endeavour than totalling up their years of schooling. In recent years, the role of skills in contributing to national prosperity and individual quality of life has become clear to governments. As a result, more attention has been given to assessing people's cognitive skills, at school and later in life, through such surveys as the Programme for International Student Assessment (PISA) and the Adult Learning and Lifeskills Survey (ALLS). These surveys assess competencies in core areas such as literacy and numeracy.

101. Not all skills that are relevant to resiliency can be learned in a classroom. Non-cognitive skills and personality traits such as motivation, adaptability, self-efficacy, and discipline can be just as central to people's ability to survive life challenges. Yet, these innate characteristics can be even more difficult to measure.

Cognitive skills and future educational attainment

102. School education forms the foundation of lifetime human capital formation and the skills level of schoolchildren in core areas such as reading, mathematics and science is highly indicative of their future progress in education. The OECD Programme for International Student Assessment (PISA) has now been collecting international data on the problem-solving skills of 15-year olds for over a decade. A Canadian case-study (OECD, 2010b) using longitudinal data to track PISA respondents has shown a direct correlation between skills level at age 15 and educational attainment and labour market outcomes at age 20. Those who scored in the bottom quartile of PISA reading scores were much more likely to drop out of secondary school and less likely to have continued in education beyond the age of 17 (Canadian grade 12) than those in the top quartile.

103. While age 21 may be too early to draw solid conclusion about labour market outcomes over the life course, wage disparities at this age were already evident between those with high and low reading scores at age 15, especially for women. By age 21, women who had obtained high reading scores at age 15 earned 12% more than those with low scores, although the relationship was weaker for men (OECD, 2010b).

104. Data from the Adult Literacy and Lifeskills Survey (ALLS) also shows that, compared to adults who perform well in all four domains of cognitive skills measured by that survey (prose literacy, document literacy, numeracy, and problem-solving), those with poor performance in any of the domains are much more likely to drop out of secondary school and not participate in post-secondary schooling or adult education and training. The relationship between weak foundation skills and participation in education and training is even more obvious among people who perform poorly in at least three domains (Figure 3.5).

Figure 3.5. Relationship between foundation skills and participation in education and training

Likelihood of non-participation in education and training by number of skills domains with low performance, people aged 16-65.



1. Odds are adjusted for age, gender, education, parents' education and labour force, occupational, income, immigrant and language status.

2. Low performance is defined as scoring at Levels 1 or 2 on the prose literacy, document literacy and numeracy domains, or Level 1 on the problem-solving domain.

Source: Adult Literacy and Lifeskills Survey, 2003-2008.

Adult competencies and employment

105. While younger people face particular challenges with the transition from education to work, human capital continues to be of relevance throughout the life course. As workers gain professional experience and partake in lifelong formal and informal learning opportunities, their human capital will increase and they are likely to attain more secure and better-paid positions. Directly measuring adult competencies is not an easy task. An OECD programme, similar to PISA in its scope, is currently in progress to undertake a comprehensive international survey of the skills of the adult population. The OECD Programme for the International Assessment of Adult Competencies (PIAAC) will publish its final report in 2013, giving a detailed picture of adult skills including literacy, numeracy and problem-solving in technology-rich environments (see next section).

106. The most recent available international survey of adult skills is the Adult Literacy and Lifeskills (ALL) Survey, which assessed prose and document literacy, numeracy and problem-solving in 11 countries and 1 state between 2002 and 2006. Findings from this survey show a very clear association between adults' skills level and the duration of unemployment, with those with higher skills spending less time in unemployment (Figure 3.6).





The probabilities of unemployed adults aged 16 to 65 to exit unemployment over a 52 week period, by low (Levels 1 and 2) and medium to high (Levels 3 and 4/5) skills, document scale, 2003

Source: Adult Literacy and Life Skills Survey, 2003.

Non-cognitive skills and academic resilience

107. While educational attainment and students' cognitive skills are strongly correlated with socio-economic background, not all students from disadvantaged backgrounds perform poorly; other factors are clearly at work, and among these an important role is played by non-cognitive skills. A recent OECD study (2011b) looked at the determinants and characteristics of academic resilience in students, using data from the 2006 PISA round of assessments focusing on achievement in science.¹⁹ The study found that the most important factor in predicting academic resilience, alongside the amount of time spent in science classes, was the student's attitude to learning. If a socio-economically disadvantaged student had high levels of self-confidence in his or her abilities, then that student was more likely to score highly in the PISA science assessment. Motivation (measured by the student's interest in science and in the student's belief that science would be relevant for a future career) was also an important factor in predicting academic resilience.

Non-cognitive skills and labour market outcomes

108. It is difficult to separate out the impact of cognitive and non-cognitive skills on employability. However, Heckman and Rubinstein (2001) provide evidence that high-school

¹⁹ Defining "resilient" student in this context as those students from the bottom third of socio-economic status (using the PISA scale of economic, social and cultural status), who are in the top third of academic achievers on the PISA science scale (OECD, 2011b)

dropouts²⁰ in the United States who later completed high school certification through the General Educational Development (GED) programme earned much lower wages than high school graduates who earned their diploma through the regular route, despite having similar cognitive ability. Indeed, controlling for cognitive skill, job training and years of schooling, GED recipients even earned less than high school dropouts who did not later complete the GED. Heckman and Rubinstein (2001) explain this pattern by showing that GED students are more likely to be deficient in personality and social skills, such as patience, discipline, and motivation, more likely to exhibit undesirable behavior throughout adolescence (such as truancy, violence and criminal activity) and less likely to retain a job than either regular high-school graduates or dropouts with the GED. This suggests that despite being relatively qualified and intelligent, GED recipients are less employable as they lack necessary non-cognitive skills.

109. The importance of non-cognitive skills for employability and other labour market outcomes has been underlined by later research. For example, Heckman, Urzua and Sixtrud (2006), show that personality skills such as self-esteem and self-efficacy have a strong positive influence on employment status, work experience, occupational choice, and earnings.

Non-cognitive skills and other social outcomes

110. Heckman, Sixtrud and Urzua (2006) also show that individuals with low cognitive and noncognitive are more likely to take up smoking by age 18, to participate in illegal activities, to be imprisoned, or to be pregnant by age 18. For many of these behaviours, non-cognitive skills are more important than cognitive skills. Carneiro, Crawford and Goodman (2007) also find that non-cognitive skills (measured at age 11) influence a range of behaviours during adolescence that are linked to negative social outcomes (smoking, pregnancy, truancy, expulsion from school, criminal behaviour), as well as being positively linked to health status in adulthood.

Health

111. While health is only one element of human capital – an element which is not even included in some definitions – it is central to a person's ability to make use of his or her education and skills. A person may have unparalleled professional abilities, academic qualifications and work experience, but if they are physically or mentally incapacitated in some way, then their productivity and resilience to shocks is undermined. Furthermore, households with a family member in poor health can face important financial and emotional burdens which can increase the risk of poverty or other adverse outcomes. The World Health Organisation²¹ defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Good health is therefore a positive state, not merely the absence of negative indicators. However, most data related to health status measure negative outcomes, such as the incidence of disease and obesity, or risky behaviours, such as smoking or alcohol consumption. It is therefore easier to look at ways that impaired health can increase vulnerability than how good health can increase resilience.

²⁰ A term referring to individuals who leave formal education before gaining the necessary credits for a high-school diploma, equivalent to "upper secondary" educational attainment.

²¹ From the Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19 June - 22 July 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. http://www.who.int/suggestions/faq/en/index.html

Ill health and economic costs

112. Income loss is one potential outcome of illness, either of the person affected or of other family members who have to reduce working hours or give up work entirely to become carers. Illness and disability can negatively impact earnings quite significantly. For example, a study using German Socioeconomic Panel data showed that non-disabled people earned 16-20% more than people reporting disability (Lechner and Vazquez-Alvarez, 2004). Another study in Russia using self-reported health data showed that reporting good health (as opposed to less than good health) increased wages by 22% for women and by 8% for men (Suhrcke et al., 2007). A similar study using British panel data showed that reduced self-assessed health lowers wages for men, and excellent self-assessed health raises wages for women (Rice and Contoyannis, 2001).

113. Physical and mental illness negatively affects other labour market outcomes, such as employment and employability. In Spain, suffering a health shock increases the risk of exiting employment by 5% (García-Gómez and López-Nicolás, 2006) and similar results have been found in other European countries (García-Gómez, 2008). Mental illness is a particularly significant barrier to employability and can impact all stages of labour market engagement, including lower rates of participation in the labour market, higher rates of unemployment and employment in low-skill or low-earning occupations relative to qualifications. An Australian study has found that each mental disorder increases the probability of inactivity by 1.3%, which is quite significant considering that most individuals suffering from mental health problems experience multiple disorders (Cornwell, et al., 2009).

114. No other single health condition equals mental health in the combined extent of prevalence, persistence and breadth of impact (Friedli, 2009). While mental illness, including suicide, accounts for less than 5% of all premature mortality, it accounts for over 30% of all morbidity and disability. Together with cardiovascular disease, it is the only type of pathology accounting for more than 10% of the total burden of disease (WHO 2005; 2006). People with poor mental health are also more likely to suffer from physical illness, with a range of mental health factors contributing to a greater prevalence of, and premature mortality from coronary heart disease, stroke, diabetes, infections and respiratory disease (Harris and Barraclough, 1998; Wulsin et al., 1999; Phelan et al., 2001; and Osborn et al., 2007). Indeed, according to some, mental illness brings as much suffering to society and individuals as poverty (Layard, 2005).

115. Obesity has also been found to negatively impact on employability, with time spent in unemployment being higher and the probability of exiting unemployment being lower, for people whose body mass index (BMI) is significantly above the mean (Paraponaris et al., 2005).

116. Finally, older people suffering from ill health are significantly more likely to take early retirement. For example, one study looking at German workers aged 40-59 showed that health shocks increase the probability of unemployment by 84% and the probability of dropping out of the labour force by 200% (Riphahn, 1999).

Indicators of human capital to assess vulnerability

117. Human capital, being an intangible asset, is not easy to quantify and there is no agreement over the best measurement approach. The OECD is current undertaking a project to identify common methodologies for measuring the stock of human capital for comparative analysis across countries and across time (Liu, 2011). The project employs the lifetime income approach (Jorgensen and Fraumeni, 1989; Jorgensen and Fraumeni, 1992a; Jorgensen and Fraumeni, 1992b) that measures the value of the total stock of human capital embodied in individuals as the total discounted present value of the expected future incomes that could be generated over the lifetime of the people currently living.²² Although this approach is promising for cross-country comparisons of the total stock of human capital, the aggregate totals calculated in this way are not suitable for providing the information on the distribution of human capital required to assess vulnerability.

118. There is no single measure of human capital that can fully capture its multidimensionality. As mentioned earlier, educational attainment is a common proxy measure that is closely linked to many outcomes that can reduce vulnerability and strengthen resilience. However, on its own, it does not accurately capture other equally (or more) important aspects of people's human capital such as skills, personality, and physical and mental health. While data on these other facets of human capital are less readily available than data on educational attainment, much progress has been made in recent years and surveys do exist (or are currently being undertaken) that can help to shed light in this area. The rest of this section looks at the relevant data and at the best available indicators of vulnerability and resilience across the different dimensions of human capital.

Educational attainment

119. Educational attainment refers to the highest level of education completed by a person. Information on the number of people by the highest educational attainment completed is available in the OECD Education database. These data are mostly based on national Labour Force Surveys. For most countries, these data are available by gender, educational level and 5-year age groups for people between age 15 and 64.

120. It is generally accepted that the minimum level of education for successful labour market performance is upper secondary level (OECD, 2010b; OECD, 2010c). Figure 3.7 shows the proportion of people aged 25-64 in OECD countries with below upper secondary education. The International Standard Classification of Education (ISCED) categorises below upper secondary education as preprimary (ISCED level 0), primary, (ISCED 1), and lower secondary (ISCED 2) education. In some countries, completion of lower secondary education marks the end of compulsory schooling and generally takes students up to the age of 15 or 16 years old. Some countries such as Greece, Luxembourg and the UK also offer ISCED 3C short training courses which tend to have more vocational content, which are also classed as below the upper secondary level.

121. There is a large degree of variation in the share of the adult population lacking upper secondary education across OECD countries (Figure 3.7). A relatively small share of the adult population have not attained upper secondary education in the Czech and Slovak Republics, Estonia, the United States, Poland, and Canada (around 8-12%). However, in Mexico, Portugal and Turkey, around two-thirds of the 25-64 year old population have not completed upper secondary schooling.

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While the lifetime income approach manages to capture the influence of a wide range of factors (demography, mortality rates, educational attainment, and labour market outcomes), it does not take into account the non-economic and social benefits of human capital, that are equally important from the perspective of measuring vulnerability.



Figure 3.7. Adults with less than upper secondary education, 2010

Percentage share of people aged 25 to 64

Note: "Below upper secondary" education refers to International Standard Classification of Education (ISCED) levels 0, 1, 2, and 3c short, which refer respectively to pre-primary, primary, lower secondary, and short upper secondary education courses of less than two years. The ISCED 3c short category is applied in Austria, Denmark, Greece, Iceland, Italy, Luxembourg, New Zealand, Switzerland, and the United Kingdom. Japan is excluded as data on below upper secondary attainment is not available.

Source: OECD Education Database

122. Low educational attainment is often the result of historical factors within national education systems. Average national figures, while indicating which countries have particularly large proportions of vulnerable people in terms of weak human capital, hide how educational attainment is distributed across age groups. Figure 3.8 compares the share of 55-64 year olds without upper secondary education to the share of 25-34 year olds. In almost every country, there is a big difference between the two age groups, with younger people generally more likely to have completed upper secondary education, signalling the progress that has been made in improving education systems in these countries. Korea, Ireland and Chile, in particular, have seen significant change for the better regarding educational attainment rates for younger generations, compared to the older generation. However, in other countries such as Portugal, Mexico, and Turkey - a large share of 25-34 year olds (around 50-60%) have not attained upper secondary education.



Figure 3.8. People lacking upper secondary education by age, 2009

Note: Excluding ISCED 3C short programmes.

Source: OECD Education Database

123. The absence of strong personal human capital assets, as represented by having less than upper secondary education, will increase vulnerability across a number of domains, and across the life course, as set out earlier in this chapter. However, human capital is of primary importance for successful entry and advancement in the labour market. Young people, facing the transition from education to work, are therefore particularly vulnerable if they have less than upper secondary education. In 2009, 52% of European early school leavers²³ were either unemployed or outside the labour market (EC, 2010).

124. Figure 3.9 shows the percentage of the population aged 18-24 with at most lower secondary education and not in education or training. On average across Europe (EU-27), just under 15% of 18-24 years-olds are early school leavers; however this average figure masks large differences between countries. In Croatia, the Slovak Republic, Slovenia, Poland, and the Czech Republic, around 5% or less of 18-24 year olds leave education early, compared to around 30-35% in Spain, Portugal and Malta, and over 40% in Turkey.

²³ In Europe, early school leaving is defined as a failure to complete upper secondary school, a failure to complete compulsory schooling, or a failure to gain qualifications or school leaving certificates. The OECD defines early school leavers as 20-24 year olds with education below upper secondary level (EC, 2010).



Figure 3.9. Early school leavers in European countries, 2009

Percentage of the population aged 18-24 with at most lower secondary education and not in education or training

Source: Eurostat Labour Force Surveys, adapted from EC (2010).

125. According to a European Commission working paper on this issue (EC, 2010), while reasons for leaving school early are highly individual and it is impossible to identify a unique profile, early school leavers are in general more likely to:

- Come from poor, socially disadvantaged and/or low education backgrounds;
- Come from disadvantaged minorities or migrant backgrounds;
- Face additional social obstacles, such as youth from public care background, teenage mothers, persons with physical and mental disabilities or other special educational needs;
- Have to contribute to the family income or take adult responsibilities such as caring for family members;
- Have had a history of disengagement from school, long-term absenteeism, truancy or expulsion;
- Have achieved poorly in school previously, and be unable to deal with learning drawbacks (lacking "educational resilience");
- Have often changed place of residence or school.

126. However, patterns differ from country to country. For example, on average across the EU, early school leaving rates for first generation migrant youth were double that for natives in 2009, at

26.4% and 13.1% respectively (EC, 2010). Migrant early school leaving rates were highest in Greece, Spain, Italy and Turkey at over 40%, and in most other countries, early school leaving rates were over three times higher amongst first generation migrants than nationals. On the other hand, in Portugal, the United Kingdom, Romania, Malta, and Norway, early school leaving rates are actually lower for migrants than for native-born young people (EC, 2010).

Cognitive skills

Students' cognitive skills of students

127. The OECD Programme for International Student Assessment (PISA) allows measuring the share of 15 years old student who are vulnerable because of their low cognitive skills. In PISA, students are ranked by level of ability according to their score in the tests, with level 1 being the lowest and level 5 being the highest ability level. Level 2 is considered the minimum level necessary for basic competencies necessary for future education and employment (OECD, 2010d). Therefore, one can look at those students below level 2 in the PISA proficiency scales as inherently vulnerable.

128. Figure 3.10 shows the proportion of students below level 2 on the PISA proficiency scale in reading and mathematics. On average across the OECD, just fewer than 20% of students achieved below level 2 scores in reading and just over 20% are below level 2 in mathematics. In Turkey, Luxembourg, Israel, Austria, Chile and Mexico, more than 1 in 4 students perform below level 2 in reading, reaching a high of 40% of students in Mexico. In Mexico and Chile, over half of students performed below level 2 in mathematics. In Korea, Finland and Canada, on the other hand, relatively few students – around 10% or fewer - fail to achieve level 2 scores in reading and maths.

Figure 3.10. Proportion of students below level two on the PISA proficiency scale in reading and mathematics



Source: PISA 2009 database, OECD, 2010d.

129. In almost all countries, there are significant gender differences in PISA performance (Figure 3.11). On average across the OECD, boys are twice as likely as girls to fail to achieve level 2 in reading (25% of boys compared to 12.5% of girls). In mathematics performance, overall girls are more likely to fail to achieve level 2, although the gender performance gap is significantly less pronounced than for reading performance, and is almost non-existent in many countries, namely Finland, Japan, Canada, New Zealand, Australia, Slovenia, Poland, Hungary and Israel.





Proficiency in reading

Proficiency in mathematics



Source: PISA 2009 database, OECD, 2010d.

Adult competencies

130. With PIAAC results not yet available, two major international surveys can be used to measure the share of adults vulnerable because of insufficient cognitive competencies: the International Adult Literacy (ALL), which was conducted between 2003 and 2008. The foundation skills measured in ALL include prose literacy, document literacy, numeracy, and problem solving, with additional skills assessed indirectly including familiarity with and use of information and communication technologies. Participants' scores were categorised into four levels of ability, with 1 being the least difficult and 4 being the most difficult. Level 3 was considered by experts to be the minimum level required for coping with the demands of the "information economy" (OECD/ Statistics Canada, 1995, 2005).

131. Figure 3.12 shows the share of adults in selected countries who are lacking basic skills (i.e. performing below level 3) across the four main areas assessed in ALLs: prose, document, numeracy and problem-solving.



Figure 3.12. Adults lacking the basic skills needed for the information economy

Share of working-age population scoring below level 3 on the ALLS skills assessment scales, 2003

Note: Data refer to people aged 16-65 years old. Switzerland (Italian), the United States, and the state of Nuevo Leon in Mexico did not field the problem solving skills domain. The state of Nuevo Leon in Mexico fielded the IALS quantitative literacy assessment rather than the ALL numeracy assessment. Although closely related conceptually, these two scales cannot be directly compared.

Source: Adult Literacy and Life Skills Survey, 2003, published in OECD/Statistics Canada (2005).

132. The figure shows that the share of adults lacking basic literacy and numeracy skills is actually very high. In the state of Nuevo Leon in Mexico, around 85-90% of adults, and in Italy, around 80% of adults, performed below level 3 on the prose and document scales. Even at the lower end of the graph, in Norway, around 1 in 3 adults of working age lack level 3 prose skills.

133. Skills tend to be lower among older age groups, as Figure 3.13 shows. This is likely to be a function of the differing educational experiences of different age cohorts. In all countries, there is a larger share of people aged 46-65 years old lacking basic skills than of those aged 16-25 years old. The difference is particularly marked in Norway, where the share of older respondents is over double that of the youngest age group (22% of 16-25 year olds, compared to 47% of 46-65 year olds.



Figure 3.13. Adults lacking basic literacy skills by age

Proportion of working-age population below level 3 on the ALLS prose literacy scale

Note: Data refer to people aged 16-65 years old.

Source: Adult Literacy and Life Skills Survey, 2003, published in OECD/Statistics Canada (2005).

Health

Self-reported Health

134. A person's health status is shaped of a multitude of behaviours, contributing social factors and outcomes. This makes the task of summing up health status in a limited selection of indicators very difficult. One way of dealing with this is by using data on people's overall self-reported health status, which is able to capture the multidimensionality of health status in one indicator and which has been shown to be a relatively good predictor of future health care use and mortality (Miilunpalo et al., 1997). The European Income and Living Conditions Survey (EU-SILC) collects comparable data on self-reported health status. Figure 3.14 shows the share of people reporting bad or very bad health in European countries. There seems to be a tendency for Eastern European and Baltic countries to have larger shares of people reporting bad health, with Estonia, Bulgaria, the Slovak Republic, Lithuania, Latvia, Poland and Hungary ranking highly on this indicator. However, the country with the largest share of unhealthy people is Portugal, with almost 1 in 5 people reporting either bad or very bad health status.



Figure 3.14. People in European countries reporting poor health status, 2009

Percentage shares

Note. Data refer to people reporting bad or very bad health status. Source: EU-SILC, 2009

135. As regards vulnerability, probably a more descriptive indicator of individual health status is whether people experience a limitation in their capacity to undertake daily activities due to health problems. If a person's ill health limits their capacity to function normally in daily life, then this is a very clear indicator that their stock of human capital is insufficient in this domain. EU-SILC also asks this question and Figure 3.15 presents the results.

136. According to these results, relatively large proportions of the population are vulnerable in terms of low health assets in a number of countries. In the Slovak Republic, around 1 in 3 people report being limited in some way due to health issues, and this share is 30% or higher in Latvia, Germany and Portugal.

137. Figure 3.16 shows a breakdown of the EU 27 average by income quintile, age and gender. Unsurprisingly, age is a major factor, with over half of those aged 65 years or over reporting limiting health problems - ten times the share of those aged 16-17 years old. Income is also important, with those at the lower end of the income scale being more likely to report limiting health problems. Women are slightly more likely than men to experience limitations due to health, possibly reflecting the older age structure of the female population.



Figure 3.15. People experiencing limitations in daily activities due to health problems, 2009

Source: EU-SILC, 2009





EU-27, 2009

Note: Income quintiles calculated using equivalised disposable income. Source: EU-SILC, 2009

Mental Health

138. Comparable and timely data on mental health status is lacking and this is an area where much more attention is needed for the development of data collection tools.

139. One accepted instrument for measuring the prevalence, severity and treatment of mental health currently exists in the General Health Questionnaire (GHQ), which is a clinical screening device for identifying minor psychiatric disorders and is available in varying degrees of thoroughness – from a 12-item short form scale up to a 60-item questionnaire. Questions from the GHQ have been included in national social surveys to provide an indication of mental health amongst national populations (see, for example, The Scottish Government, 2010). However, a drawback of the GHQ is that it measures recent changes in respondents' mental health and so cannot measure chronic conditions.

140. The World Health Organisation (WHO) has developed a survey instrument as part of the World Mental Health Survey (WMHS) Initiative, with the intention of measuring the prevalence and severity of mental health problems within and across nations. The Composite International Diagnostic Interview 3.0 (CIDI) has been used in over 30 countries as part of the WMHS initiative and has since been included in other national surveys of mental health, such as in Australia (ABS, 2007). Disorders considered include anxiety disorders, mood disorders; disorders linked to impulse control and disorders due to use of alcohol and drugs. All disorders are classified as serious, moderate, or mild.

141. Table 3.1 below shows the results for selected countries. The results indicate that the proportions of people suffering from mild, moderate or serious mental health problems is very high. Among the countries presented here, an average of just under a quarter of the population suffer from serious mental health problems – with a high of 37% of the adult population suffering from serious mental health disorders in Israel.

	Prevalence in preceding 12-months, share of total population Type of disorder				Severity of mental health, share of those experiencing such problems Level of severity			
	Anxiety	Mood	Impulse	Substance	Any	Serious	Moderate	Mild
Belgium	8	5	2	2	13	32	38	30
China	3	2	3	2	7	14	32	54
France	14	7	2	1	19	19	43	39
Germany	8	3	1	1	11	21	43	36
Israel	4	6		1	10	37	35	28
Italy	7	3	0	0	9	16	48	37
Japan	4	3	0	1	7	13	46	41
Mexico	8	5	2	2	13	26	34	41
Netherlands	9	5	2	2	14	31	31	38
New Zealand	15	8		4	21	25	41	34
South Africa	8	5	2	6	17	26	32	43
Spain	7	4	1	1	10	19	42	38
United States	19	10	11	4	27	25	39	36
Average	9	5	2	2	14	23	39	38

Table 3.1. Prevalence and severity of mental health problems in selected countries, around 2005

Note: The WMHSI data typically cover all people aged 18 and over. However the age limit is 16 years in New Zealand, 20 years in Japan, and 18-65 years in Mexico. Sample sizes range between around 2 000 (in the Netherlands) and 13 000 (New Zealand). Response rates vary between 50% (Belgium) and 80% (New Zealand). Survey samples are nationally representative in most countries, but they refer to all urban areas in Mexico and to four metropolitan areas in Japan.

Source: Kessler and Üstün, 2008.

Discussion

142. Human capital is of fundamental importance to a household's resilience to negative shocks, and households with low levels of human capital can thus potentially be considered vulnerable. Human capital affects vulnerability both through risk reduction, in that it decreases the probability of negative shocks such as unemployment or health crises, and via mitigation in that high levels of human capital facilitate the transition away from poor outcomes. It is likely that high levels of human capital also directly affect the ability of households to cope in difficult circumstances.

- A measurement strategy for monitoring the extent of vulnerability due to human capital should be based around indicators covering the main elements of human capital, and that are available from existing data sources. Three indicators are proposed:
- Proportion of the population with less than ISCED 3 attainment in education
- The proportion of students failing to attain PISA level 2 competencies in reading and mathematics
- the proportion of adults experiencing limitations in daily activities (EU-SILC)

143. In addition to the indicators identified above, there are a number of aspects of human capital that cannot be measured adequately from existing data, either because information is not collected in a timely fashion, or because good measures simply are not available. In particular, non-cognitive skills and mental health are poorly measured within existing datasets.

144. Despite the importance of non-cognitive skills and personality traits for numerous well-being outcomes, there are no large-scale surveys that currently exist measuring this aspect of human capital. Personality traits are generally grouped into "Big Five Factors" – openness, conscientiousness, extraversion, agreeableness, and neuroticism – and some national surveys do exist that measure these aspects, such as the German Socio-Economic Panel (SOEP) study (Wagner et al., 2007). The OECD Education department is currently developing a project on Education and Social Progress that aims to measure both cognitive and non-cognitive skills across countries, and their contribution to social outcomes such as health, societal engagement, family cohesion, subjective well-being, trust and tolerance, and public safety. It will publish its final report in 2013.

145. Regarding the measurement of mental health, the WMHS initiative has provided some valuable insights into the severity and prevalence of mental health problems in OECD countries. Ideally, data collection in this area would be collected on an ongoing basis in a way that goes beyond the purely descriptive and is able to provide in-depth information on related issues such as comorbidity (i.e. people experiencing more than one mental health problem at once) and substance abuse problems, as well as providing the means of analysing possible determinants of mental health degradation.

CHAPTER 4. SOCIAL CAPITAL

146. Social capital broadly refers to the value residing in people's relationships and social connections. This value can function as both a public good, looking at outcomes that benefit society as a whole, and as a private good, focussing on the advantages that social networks can bring for smaller groups and individuals.

147. The OECD has traditionally concentrated primarily on the public good aspect, defining social capital as the "networks together with shared norms, values and understandings that facilitate co-operation within or among groups" (OECD, 2001). Examples of the shared norms and understandings that are important at the societal level include levels of interpersonal trust, tolerance of diversity, norms of reciprocity, and democratic participation. There is much evidence that various aspects of social capital are positively correlated with a range of outcomes at regional and national level, including economic growth, good governance, educational attainment, and health status (Putnam, 2000; Halpern, 2005).

148. An alternative approach is to view social capital primarily from the perspective of the individual as the "ability to secure benefits through membership in networks and other social structures" (Portes, 1998, p. 8). There are different types of networks through which people may create, maintain and draw upon social capital – from the smallest and most intimate, such as the family unit, to much larger and more diffuse networks such as community associations.

149. This paper considers both the public and private benefits of social capital. The public good benefits of social capital impact on vulnerability at a neighbourhood or local level. People benefit from living in an environment with a high level of trust and dense networks regardless of whether they possess strong networks themselves. To the degree that social capital genuinely facilitates co-operation within or among groups, living in a high social capital region is likely to both reduce the risk of negative shocks for an individual, and also speed the process of transition back to a normal state.

150. However, we are also interested in the private benefits of social capital. If a person is affected by a negative shock, such as unemployment, they can benefit from shared social networks both as a source of information and as a source of direct support. In the former case, social capital will contribute to mitigating the impact of a shock by facilitating transition out of a state of poor outcomes (such as joblessness), while in the latter case social capital may contribute to coping with the negative effects of the shock (i.e. by providing a source of material support that means that joblessness does not imply poverty).

151. The following section looks at the evidence on social capital and aspects of vulnerability, highlighting three types of social networks that matter: community/neighbourhood social capital; weak ties; and, strong ties. The final section presents a number of potential indicators for the measurement of these different facets of social capital in relation to vulnerability.

Evidence on social capital and vulnerability

152. The measurement of social capital presents a significant challenge given the intangible nature of the subject. Because of this, the evidence available on the impact of social capital on individual outcomes is generally poor and includes some significant gaps. There is a considerable literature on the impact of social capital on health outcomes. This includes both private and public aspects of social capital. A somewhat smaller literature provides information on the impact of private social capital on employment and education outcomes, and on how social capital affects poverty. A generic shortage of almost all of this literature is a lack of longitudinal studies based on panel data that are able to provide estimates of the marginal impact of social capital on transitions in to and out of states of poor outcomes such as joblessness or deprivation.

Health and well-being

153. People's social connections have an important impact on subjective well-being. People with more social engagements tend to report higher levels of happiness and life satisfaction, even when controlling for other factors such as marital status, income, gender, age, education, labour market status and health (Lelkes, 2010; Helliwell, 2008). Figure 4.1 below uses data from the Gallup World Poll to show the difference in average life satisfaction scores depending on whether people have friends to count on for help or not.

154. As well as raising general well-being, supportive social networks can be an effective buffer against the negative impact of stressful events. There are several ways that supportive relationships can help. Evidence has shown that people's perception of a stressful event, and whether it can be controlled, matters more than the event itself (Glass and Singer, 1972), and so when people feel that they have someone to count on to help, it provides a psychological and emotional boost. Socially isolated people are more likely to suffer from depression when under stress, and to remain depressed for longer, than people with strong social support networks (Sherbourne, Hayes and Wells, 1995). Risky behaviours such as smoking, drinking, physical inactivity and poor diet are also more prevalent amongst socially isolated people (Berkman and Syme, 1979; Berkman and Glass, 2000). This could either indicate that the absence of supportive relationships may shape people's behavioural reactions to stress (with people turning to drink, for example, rather than more proactive solutions), or that the low self-image that comes with social isolation means that isolated people take less care of themselves, and are more likely to adopt risky habits (Halpern, 2005).

155. People who lack supportive social networks are more at risk of a range of physical health risk, including: premature mortality (Berkman and Glass, 2000); increased vulnerability to infection due to weaker immune systems (Cohen et al., 1997; ThereII et al., 1995); and, pregnancy complications in women (Nuckolls, Cassel and Kaplan, 1972). Supportive relationships can also help with recovery from illness: people with strong, intimate social networks are much more likely to survive in the years following a heart attack, for example (Case et al., 1992).





Average life satisfaction score (1 being lowest life satisfaction and 10 being highest) for those with and without friends to count on

Source: OECD calculations based on Gallup data

156. Characteristics of the community in which people live, and the degree of social cohesiveness have also been shown to be important to health outcomes. Emile Durkheim first demonstrated that suicide rates were higher in less cohesive populations more than a century ago. More recently, the public health literature has given particular attention to the relationship between community and regional social capital and health outcomes. Kawachi et al. (1997) demonstrated that age-adjusted mortality rates tended to be higher in states with high levels of social mistrust (Figure 4.2).



Figure 4.2. Relationship between social trust and age-adjusted mortality rates across states in the United States, 1990

Source: Kawachi et al. (1997).

157. Studies of smaller geographic areas such as neighbourhoods and local communities have also discovered a relationship between social capital and health outcomes. Hamano et al. (2010) studied around 200 neighbourhoods in Japan and found that high levels of social trust, and high levels of associational membership were associated with better mental health after adjusting for age, sex, household income, and educational attainment. A study of Chicago neighbourhoods showed that neighbourhood social capital—as measured by reciprocity, trust, and civic participation—was associated with lower neighbourhood death rates, and lower rates of heart disease, after adjustment for neighbourhood material deprivation (Lochner et al., 2003).

Employment

158. There is a strong positive correlation between the size of an individual's friendship network and their likelihood of being employed (Aguilera, 2002). One explanation for this is that a large proportion of jobs are filled by word of mouth and personal contacts, and this has been shown to be true for both low-paid and high-paid jobs (Brown et al., 2001; Boxman, de Graaf and Flap, 1991). In this context, bridging social capital to people outside immediate circles of intimacy, are particularly important, so as to provide access to a wider range of information and opportunities. The benefit of "weak ties" – with distant relatives, acquaintances and friends (or friends of friends) - was first highlighted by Granovetter in a famous 1973 paper (Granovetter, 1973)

159. Having extensive social networks is also positively associated with career advancement (Podolny and Baron, 1997) and higher pay (Goldthorpe, Llewellyn and Payne, 1987), although the direction of causality is not clear. For example, people with good social skills may be more likely to get promoted (as well as having large networks) and being well-paid may better allow people to maintain a social life, thereby increasing their chances of having a large network.

Deprivation

160. Social capital can substitute for financial capital in certain contexts. For poor people without adequate financial resources, supportive networks can provide practical and material support times of need, such as assisting with healthcare expenses (Aye, Champagne and Contandriopoulos, 2002) or providing general cash assistance for everyday survival (Stack, 1974; Edin and Lein, 1997). While having the support of a social network is important for all people, regardless of income status, studies have shown that poor people tend to rely on their social relationships for help more than the wealthy (Boisjoly, Duncan and Hofferth, 1995; Stack, 1974).

161. Regarding resilience and social capital, it is important to note that it is not just the size or composition of an individual's personal network that matters; there are also "ecological effects" stemming from characteristics of the neighbourhood or community where people live, such as crime, unemployment levels, quality of housing, norms of reciprocity and co-operation, etc. For example, one study of the 1995 Chicago heat-wave found that socially isolated older persons had higher mortality rates in poor neighbourhoods with abandoned lots (signalling weak neighbourhood social capital) than in equally poor, but more socially-connected neighbourhoods (Klinenberg, 2002). High community unemployment levels have a negative impact on an individual's chances of escaping poverty even after individual-level characteristics have been controlled for (Buck, 2001). William Julius Wilson's 1996 study of urban poverty in the United States highlighted the links between joblessness, weakened social capital and long-term deprivation within a community. The disappearance of work opportunities in a given area destroys local businesses, social institutions, and erodes norms of good work habits, meaning that younger people find it increasingly harder to exit poverty (Wilson, 1997).

Education

162. Social capital and human capital are closely inter-linked. Education is one of the most important predictors of many forms of social engagement: better educated people are more likely to vote, to volunteer, to organise an informal social event, and tend to have higher trust in others, for example (Helliwell and Putnam, 1999; Putnam, 2000; Halpern, 2005). However, some forms of social capital can be crucial in determining academic success and levels of educational attainment.

163. James Coleman (1988) highlighted the importance of social capital within families, schools and communities for encouraging school completion. Coleman points out that "family background" actually constitutes at least three forms of capital - financial, human and social capital – but that social capital plays a crucial role. For example, the transferral of human capital from parent to child depends on the quality of that relationship (i.e. the social capital) – if a parent spends little time with their child then the value of the parent's human capital will not be transferred across generations. On the other hand, if a family lacks financial capital, but has strong parent-child relationships, the time the parent spends with the child helping with schoolwork or expressing encouragement may help to overcome the economic disadvantage. Evidence shows that children whose parents spend more time with them and are more attentive score higher on tests, are more likely to complete secondary education and to enter tertiary education (Valenzuela and Dornbusch, 1994; Furstenberg and Hughes, 1995; Parcel and Geschwender, 1995; Sun, 1999; Desforges and Abouchaar, 2003).

164. The family is not the only source of social capital relevant for academic success: schools and communities matter too. Coleman (1988) argued that it is the combined social capital coming from close bonding links between parents, schools and the wider community (what he calls "closure") that matters most for children's educational performance. In such strongly bonded communities, even where social capital is low in individual families, social capital in the community partially compensates for its absence in the family (1988). However, subsequent research has shown that "closure" is not always a good thing: while bonding social capital allows members of a community to pass on their values to the next generation, if those values are unsupportive of educational aspirations, then bonding in the absence of bridging social capital can lead to worse educational outcomes (Restrepo, 1998; Halpern, 2005).

Collective action: economic productivity and public institutions

165. Finally, social capital has been linked to economic productivity and better-functioning public institutions at the aggregate level. For example, nations with high levels of social trust tend to have higher rates of economic growth (Whitely, 2000; Knack and Keefer, 1997). Figure 4.3 shows this strong positive relationship between social trust and GDP per capita.





Source: Whitely, 2000.

166. This relationship has also been established at the sub-national level, most famously by Robert Putnam who examined the impact of social capital on quality of governance and economic performance in Italian regions (1993). Putnam showed that the most successful regional governments tended to be in the north of Italy and that this could be explained by the higher levels of social trust and associational membership, which encouraged cooperation and collective action in these regions. A similar relationship between social trust and regional economic growth has also been shown to partially explain the "North-South" divide in Britain (Casey, 2004).

167. While less analysis has been conducted at smaller geographic levels (e.g. communities, municipalities, or neighbourhoods), Warren et al. (2001) have argued that while weak social capital in an area can crystallise patterns of disadvantage, strong community social capital can help to combat poverty. Strong ties within a community will allow for better co-operation and organisation amongst the poor, thereby bolstering the effectiveness of local public institutions and increasing the chances of successful investment strategies in public health, safety, housing, economic development and education.

Indicators of social capital to assess vulnerability

168. Social capital is a complex and multidimensional concept, and little consensus exists concerning the best way to approach the measurement task. At the national and regional level, interpersonal trust and associational membership are commonly used as indicators of aggregate stocks of social capital and levels of formal social engagement. At the individual level, measuring social capital entails the selection of indicators that describe the pattern and intensity of people's social interaction (networks) as well as the resources that individuals can access as a result of this interaction.

169. The previous section outlined evidence on the contribution of social capital to different aspects of vulnerability. The different examples in that section show that there are at least three types of social capital, stemming from different network types, which are relevant for reducing vulnerability:

- 1. *"Strong"* ties (family and close friends). Intimate and supportive networks can help people to "get by"²⁴ in daily life when other resources are scarce, and to cope with adversity. The support provided by strong ties can be both material and emotional.
- 2. "Weak" ties (extended networks of personal contacts and acquaintances). The larger, and more influential a person's network is, the greater their access to information and opportunities that can provide social leverage, thus enabling them to "get ahead" or to more rapidly exit adverse situations.
- 3. *Community social capital.* The social capital characteristics of the area in which a person lives, and the degree to which community networks can access resources and pass on certain norms, can affect the vulnerability of individuals to adverse outcomes over and above their own traits and resources.²⁵ Community social capital is, at least partly, a product of the intensity of weak ties within a neighbourhood, but needs to be measured separately since an individual can benefit from living in an area with a high level of community social capital even if they do not themselves have a strong network of weak ties.

170. An ideal set of indicators would cover the levels of social capital at the neighbourhood or local level, the degree to which individuals are engaged in extended networks, and the ability of individuals to access support from their social contacts and networks. However, while many national statistical offices have begun to measure aspects of social capital in recent years, relevant data is still relatively scarce. In 2006, a supplementary ad-hoc module on "Social Participation" was included in the EU Survey on Income and Living Conditions (EU-SILC) and provides data for some indicators of social contact for selected European countries. International data on aspects of social capital is also available from the European Social Survey, the World Values Survey, and the International Social

²⁴ The distinction between "getting by" and "getting ahead" was first outlined in de Souza Briggs (1998).

²⁵ There is a degree of overlap between this aspect of social capital and shared assets, which are dealt with in the next chapter.

Survey Programme. This chapter principally uses data from EU-SILC as the sample size is larger than that used in other surveys, thereby strengthening the reliability of the results.

171. The rest of this section examines the ideal indicators for measuring the three types of social capital outlined above, presenting relevant data where possible.

Strong ties

Frequency of social contact

172. Close, supportive relationships are central to people's emotional well-being and provide a buffer of support during and after stressful life events. However, it is difficult to directly measure the number or the quality of people's relationships, whether with family or friends. One way of identifying people who lack strong ties is looking at data on frequency of contact and socialising with others. Social capital is created and maintained through interaction with others. People who are socially isolated, in that they do not spend time or have no contact with friends and relatives, lack a vital source of social capital and therefore experience heightened vulnerability in this area.

173. Contact with family is the ultimate source of bonding social capital – reinforcing relationships with people of a similar background – and for most people, family can provide a "last resort" safety net of emotional and material support. People without close family relationships are lacking an important source of social capital.

174. Figure 4.4 shows two measures of social isolation from families: the proportion of people that never meet up face-to-face with relatives, and the proportion of people never having any distant contact (telephone, letter, email) with relatives, using data from the 2006 EU-SILC special module on social participation. This indicator does not give a full picture of the quality of family relationships, as it only looks at socialising or distant contact with family members living outside the household. However, it nonetheless can give an idea about the proportion of people lacking strong family relationships.

175. Overall, the proportion of people that never meet up with relatives outside the home is relatively small in European countries, ranging from under 1% in Sweden, Greece and Finland to 4% in Italy and 4.7% in Austria. The proportion of people never having distant forms of contact is higher in most countries - reaching 6% or above of the population in Estonia, Luxembourg, Slovenia and Portugal - although still low in Greece and Finland (1.2% and 1.9% respectively).



Figure 4.4. People lacking strong family ties, 2006

Source: EU-SILC Users' Database, taken from Lelkes, 2010.

Note: The figures include people who say they have no relatives. Distant contact refers to email, phone, letter or other forms of remote (i.e. non-face-to-face) contact.

176. Good friendships are also an essential element of strong networks of support. Figure 4.5 shows the proportion of people who never meet up with or contact friends. More people are socially isolated from friends than from family according to these figures. In Hungary, around 12% of the population neither meet up with nor contact friends. In Spain and Portugal, around 14% of people never have any distant contact with friends, although a smaller proportion of people in these countries never meet up with friends (4.1% in Portugal and 7.7% in Spain).

177. It seems that people are more likely to use face-to-face contact as a means of maintaining social capital with friends and relatives, than distant forms of communication. Only in Sweden and Germany do marginally fewer people "meet up" with relatives than have "contact" with them, and only in Sweden, Germany and Finland do fewer people meet up with friends than maintain contact in other ways.



Figure 4.5. People lacking strong friendship ties in 2006

Source: EU-SILC Users' Database, taken from Lelkes, 2010.

Note: The figures include people who say they have no friends. Denmark has been excluded from the selection due to a programming error with the data. Distant contact refers to email, phone, letter or other forms of remote (i.e. non-face-to-face) contact.

178. Face-to-face meetings and more remote forms of contact involve inherently different levels of intimacy. The strong ties of the type which can provide emotional and material support in times of need are unlikely to be created over a distance. However, once such bonds have been established, more distant forms of contact may be sufficient to maintain the strength of the relationship over many years. The most vulnerable are those that neither have no form of contact with either friends or relatives.

179. Figure 4.6 shows the relative proportion of people that are completely socially isolated (i.e. never meet and have no contact) from friends, family, or both friends and family. There is little correlation between lack of contact with friends and lack of contact with relatives across the countries, although in all countries people are more likely to be completely isolated from friends than from family. The differences are particularly marked in Hungary and (to a lesser degree) Spain, France, and Italy. In Hungary, over 11% of people either have no friends at all, or do not see or have contact with friends, compared to only 1.8% of people who never meet or have contact with family.

180. A very small share of people experience complete social isolation - in that they have absolutely no contact with either friends or relatives – ranging from 0% in Finland to 1.8% in Italy. People in this category are completely cut off from society, not only never socialising with friends or relatives but not even making or receiving one social telephone call or sending/receiving one social

email all year. While people in this group are very vulnerable in terms of their social capital resources, they represent an extreme case.





Note: The figures include people who say they have no friends or no relatives. Distant contact refers to email, phone, letter or other forms of remote (i.e. non-face-to-face) contact.

181. The low proportions of people experiencing isolation from both friends and family signals that there is little overlap between the two groups: the vast majority of people see either friends or family at least once a year. However, family and friendship ties provide different types of support and people whose strong ties come from only one source (i.e only family and no friends, or only friends and no family) are likely to have more limited social capital resources to count on than those with strong ties with both family and friends, and therefore are relatively more vulnerable.

182. Table 4.1. breaks down the different indicators of social isolation by different background variables for EU-27 aggregate data. Overall, there are some gender differences, with women less likely to be isolated from family (i.e. no meetings or contact) and slightly less likely to never have distant contact (telephone, email, etc.) with friends, than men. However, women are more likely than men to never get together with friends (6% of women compared to 4.8% of men).

183. There are significant differences by age band, particularly regarding meeting/contact with friends. Almost 12% of people aged 65 and over never meet up with friends and 19% of people aged 65 and over never have any contact by letter, telephone call, etc., compared to 3.9% and 6.7% respectively of 18-64 year olds. The impact of age on friendship is not too surprising given that people are likely to lose touch with people or to lose friends to death as they get older, and are less likely to make new replacement friendships at the same rate. Family support is very important for preventing the social isolation of older people, and indeed the differences between older people (65 years and

Source: EU-SILC Users' Database

over) and 18-64 year olds is much less pronounced when considering the share of people who never meet/contact relatives.

Total		Never meet relatives 2.7	Never contact with relatives 4.7	Never meet friends 5.4	Never contact with friends 9
Gender	Women	2.4	3.5	6	8.7
	Men	3	5.9	4.8	9.4
Age	16-17	1.5	6.4	1	2.2
	18-64	2.6	4	3.9	6.7
	65 and over	3.1	6.5	11.9	19.1
Poverty status	Non-poor	2.3	3.9	4.8	7.8
	Poor	4.7	8.4	8.7	15.8

Table 4.1. Measures of social isolation by gender, age and poverty status

EU-27, 2006

Source: EU-SILC Users' Database

Note: The figures include people who say they have no friends or no relatives. Denmark has been excluded from the selection due to a programming error with the data. "Poor" refers to the share (%) of the population living in households where equivalised disposable income is below the threshold of 60% of the national equivalised median income (in other words, the at-risk-of-poverty rate following the concept of relative poverty adopted in the European Union).

184. People experiencing poverty are much more likely to experience social isolation than the non-poor by every measure presented in Table 4.1., with the difference being much more pronounced for contact/meeting with friends. The direction of causality is not clear. For example, socialising and communicating by other means can cost money, and if people cannot afford these activities they may be unable to maintain their relationships. However, as already mentioned, people without diverse social networks lack access to information and opportunities for social advancement (see next section on weak ties). The proportion of the non-poor population who are socially isolated by the different measures is not insignificant, especially when considering friendship networks: almost 5% of the non-poor never get together with friends and almost 8% do not keep in touch with friends by other means.

Perceived social network support

185. While frequency of contact with friends and relatives can give one indication of people's stock of social capital, it does not necessarily give much detail about the quality or strength of people's relationships as they pertain to vulnerability. Perceived social network support refers to whether people feel that they have someone to count on in times of need. It can be quite a vague indicator in that the type of support (e.g. emotional, financial) is often not specified. However, it can nonetheless provide an indirect indicator of people's social capital in the sense of whether people see their relationships as a resource that can be accessed when needed. Figure 4.7 shows the share of people who feel that they are unable to ask any relative, friend or neighbor for help. There is quite a large degree of variation across countries, with only around 3% of people in Denmark and the Netherlands

saying they have no help, up to around 9% in the Czech Republic and Luxembourg and over 16% in Italy.



Figure 4.7. People reporting that they could not rely on help from relatives, friends or neighbours in case of need, 2006

Source: EU-SILC, 2006

Note : Data for France and the UK have been excluded from the selection due to comparability issues (see Lelkes, 2010).

186. Figure 4.8 shows a breakdown of European aggregate data by gender, age and poverty status. While is there is little difference between men and women's perceived ability to count on someone's help (with men slightly more likely to feel they have no one to ask) and there is little difference between the elderly (those over 65 years old) and the rest of the adult population, there does seem to be a significant difference between the poor and the non-poor populations. Over 18% of the poor population (defined as the share of the population living in households where equivalised disposable income is below the "at-risk-of-poverty" threshold of 60%) say they can ask no-one for help, compared to 14% of the non-poor population.

187. As the previous indicator showed, the poor are also more likely to have no contact with friends and relatives. Table 4.2 shows that, unsurprisingly, there is a strong relationship between social isolation (i.e. never seeing friends or relatives) and the inability to ask for help from a relative, friend or neighbour. 45.5% of people who never socialise with friends or relatives have no-one to ask for help.



Figure 4.8. People reporting that they could not rely on help from relatives, friends or neighbours in case of need, by gender, age and poverty status, 2006

Note: "Poor" refers to the share of the population living in households where equivalised disposable income is below the threshold of 60% of the national equivalised median income (i.e. assessed to be at-risk-of-poverty following the concept of relative poverty adopted in the European Union).

Source: EU-SILC, 2006.

Table 4.2.	Ability to get help a	nd frequency of getting	together with relatives or friends,	2006
			U ,	

	Ability to ask any relatives, friend or neighbour for help			
Frequency of getting together with relatives or friends	Yes	No		
Daily	95.2	4.8		
Every week	94.1	5.9		
Several times a month	91.9	8.1		
Once a month	87.9	12.1		
At least once a year	79.6	20.4		
Never	54.5	45.5		
Total	93.1	6.9		

Source: EU-SILC Users's database, from Lelkes (2010)

Weak ties

188. Strong ties are important for emotional and material support, but extended networks of acquaintances and "weaker" ties allow individuals to access greater resources, information, and opportunity for social and economic advancement. People lacking weak ties are therefore vulnerable in this respect; however measuring weak ties poses a significant challenge. Some surveys ask questions which aim to measure the diversity of people's relationships. For example, the Social Capital Community Benchmark Survey in the United States includes a proxy measure of friendship diversity by asking whether the respondent counted amongst their personal friends someone who is: a business owner, was on welfare, owned a vacation home, is gay, is a manual worker, is White, is Black, is Hispanic, is Asian, is a community leader, and was of a different faith (The Saguaro Seminar, undated). Data based on such detailed questions are not widely available, however.

189. Figure 4.9 shows the results of a proposed indicator to provide a proxy measure of weak ties. The indicator shows the share of the population who lack the opportunity to create weak ties through the usual pathways: in a place of work or study, through community engagement and through informal socialising. It is based on EU-SILC data and counts the share of people who are neither in employment or in education, who have infrequent contact with friends and who are not engaged in the community through volunteering or group membership.



People who are neither in employment or education, who do not take part in community engagement activities, and who rarely contact friends



Note: "Not in employment" includes people who are either: unemployed, retired, permanently disabled or unfit to work, fulfilling domestic tasks and care responsibilities at home, or otherwise inactive. Infrequent socialising or contact with friends is taken as less than monthly contact/meeting-up face-to-face. No community engagement refers to people who participate in none of the following activities: informal voluntary activities, political parties or trade unions, professional associations, churches or other religious organisations, recreational groups or organisations, charitable organisations, other groups or organisations.

Source: EU-SILC, 2006.

190. The indicator shows a relatively wide degree of variation in the share of the population lacking weak ties between countries, from almost 12% in Spain down to less than 2% in Iceland.

While this is admittedly a new and untested measure, the fact that there seems to be a high degree of clustering amongst similar countries supports the idea that it measures something meaningful about social patterns. In general, Scandinavian countries tend to have small populations lacking weak ties, while Southern European countries (with the exception of Greece) tend to have more people lacking weak ties.

191. As a test of the ability of this indicator to predict a greater exposure to adverse outcomes, Table 4.3 shows results by income quintile for different indicators of material deprivation, depending on how socially engaged people are. The columns headed "No weak ties" present the share of people with relatively low levels of social engagement. They have infrequent contact with friends and are involved in no form of community activity²⁶. The columns headed "Many weak ties" include the share of people who have both frequent contact with friends and who are involved in some form of community engagement either through volunteering or group membership, or both. Again, this indicator is not a direct measure of how many weak ties people have, but is an indirect measure. Those in the column "many weak ties" are more likely to have a larger extended network of weak ties as they are more socially engaged.

Table 4.3. People without weak ties are more likely to be materially deprived

EU-27, 2006

	Unable to face unexpected expenses		Unable to keep home adequately warm		Unable to afford a healthy diet	
	No weak ties	Many weak ties	No weak ties	Many weak ties	No weak ties	Many weak ties
1st quintile	64.6	46.7	25.4	6.9	24.5	9.6
2nd quintile	49.8	34.6	18.2	4.3	16.2	4.3
2rd quintile	38.7	23.2	14.8	2.9	12.2	2.5
4th quintile	26.4	14.2	10.2	2.0	8.3	1.4
5th quintile	14.9	6.5	5.6	1.6	4.4	0.7
All	43.3	21.8	16.5	3.1	14.8	3.0

Note: "No weak ties" refers to people who have infrequent contact with friends (less than monthly distant contact/meeting-up face-to-face) and who participate in none of the following community engagement activities: informal voluntary activities, political parties or trade unions, professional associations, churches or other religious organisations, recreational groups or organisations, charitable organisations, other groups or organisations. "Many weak ties" refer to people who see or have a form of distant contact with friends once a month or more, and who are involved in at least one of the above community engagement activities.

Source: EU-SILC, 2006

192. For the three measures included in table 4.2 - the ability to face unexpected expenses, the ability to keep the home adequately warm, and the ability to afford a healthy diet – there is a clear relationship between how socially engaged someone is (i.e. whether or not they are likely to have weak ties) and their likelihood of being exposed to material deprivation. In the poorest income quintile, just under half of those who are more socially engaged are unable to face unexpected expenses, compared to almost two-thirds of those with no weak ties, And a around a quarter of those with no weak ties are unable to keep their home adequately warm or are able to afford a healthy diet, compared to under 10% of those who have many weak ties.

²⁶ These columns do not, however, include people who are unemployed as it would be difficult to separate out the adverse effect of being unemployed from the adverse effect of having no weak ties.

Neighbourhood and community social capital

193. Social capital is a relatively new concept in social science and its determinants at the aggregate level, and the way that community social capital influences outcomes at the individual level, are not fully understood. However, as set out in the previous section, there is good reason to believe that social capital characteristics of the area in which an individual lives, such as social trust, are important for reducing vulnerability to adverse outcomes at an individual level.

194. Studies of social capital at an aggregate level have tended to focus on large geographical units such as the nation or region (Putnam, 1993; Knack and Keefer, 1997; Kawachi et al., 1997; Helliwell, 2004). Social capital measured at the aggregate level is generally understood as comprising the following components (Ledogar and Fleming, 2008; Putnam, 1993)

- Trust in the community.
- Reciprocity and norms of cooperation i.e. a sense of obligation to help others and confidence that such assistance will be returned;
- Civic engagement i.e. participation or volunteering in local organisations;
- Community networks i.e. the number and intensity of informal and formal personal networks; and
- Local civic identity i.e. sense of belonging, tolerance of diversity, and sense of solidarity with other members of the community.

195. The first two components capture the common norms and values thought to comprise the productive elements of social capital, while the latter three components relate to factors thought to influence the level of social capital in a community. Available survey data related to these concepts vary from country to country. A few countries have made focused efforts to measure social capital, either through surveys specifically designed to measure aspects of the concept or by the inclusion of relevant questions in other general social surveys.²⁷

196. Social trust is probably the predominant measure of social capital at the aggregate level. Trust is also a key aspect of social capital: many of the benefits of social capital flow from the way in which high levels of trust in other people living in the same community facilitate cooperation, exchange and enterprise. Indeed, some authors focus on social trust as the best proxy measure of social capital currently available (Fukuyama, 1996; Halpern, 2005). Social trust tends to be measured by asking whether or not people agree with the statement that "most people can be trusted". It has been measured in international surveys such as the World Values Survey and the Gallup World Poll. Figure 4.10 shows the levels of social trust across different countries.

²⁷ The United States, the United Kingdom, Ireland, Canada, Australia, New Zealand, and Finland have all undertaken national surveys on social capital or have included extensive sections of questions on social capital in national surveys such as General Social Surveys. Austria, Belgium, France, Germany, Greece, Japan, Switzerland, and Turkey have surveys on different aspects of community participation and volunteering, but not specifically on social capital.




Percentage of people saying that they trust others

Source: Gallup World Poll

197. People in Norway, Sweden and Denmark report the highest levels of trust in other people (with more than 60% of those interviewed answering that that most people can be trusted) while Turkey, Portugal, Mexico, France and Poland are those with the lowest level of interpersonal trust (less than 20% think that most people can be trusted). On average, a little over than one in three respondents in OECD countries report trusting others

198. Presentation and analysis of data at the sub-national level is rare. The most relevant unit of analysis is also an issue: academic studies of the impact of community social capital on aspects of individual resilience and vulnerability (e.g. health status, likelihood of exiting unemployment) tend to focus on smaller geographic areas such as local communities, neighbourhoods, or even single streets or apartment blocks. However, presentation and analysis of sub-national official statistics is rare and, where available, it tends to be at the larger geographic level such as the region or state.²⁸

Discussion

199. The impact of social capital is difficult to measure, both because the concept itself is hard to measure, and because it is difficult to establish causal links between social capital and other outcomes

²⁸ There are some exceptions. For example, in the United Kingdom, many official statistics have been made publicly available at the neighbourhood level (www.neighbourhood.gov.uk). In the United States, an independent research organisation, the Urban Institute, coordinates with local partners to present administrative data disaggregated at the neighbourhood level (<u>www.urban.org/nnip</u>). However, such data tends to be focused on crime, public services and neighbourhood conditions rather than measuring social capital.

with the sorts of measure that are available. Nonetheless, the available evidence suggests social capital has a significant impact on other outcomes as diverse as health, education, and material deprivation.

200. A European measurement strategy for social capital and vulnerability should have two streams. First, it is important to make use of available indicators in EU-SILC. In particular, information on contact with friends and family, and ability to access help in time of need provide a baseline set of measures of strong ties. This information needs to be collected on an ongoing basis however, so as to understand trends over time. Information on average levels of generalised trust in a given community others provides a benchmark of the public good aspects of social capital. However, more is needed.

201. The second stream of work is research-based and needs to focus on examining the linkages between existing measures of social capital, such as those noted above, and other outcomes. EU-SILC has the potential to provide considerable information on the relationship between social contact and the probability of transitions into and out of negative outcome states such as unemployment and material deprivation. Similarly, while information exists on important aspects of social capital at the community level, there is some work to be done to convert these into useful indicators. Information on generalised trust, for example, would be more valuable for monitoring vulnerability if it were possible to report on the proportion of the population of a country living in a region or community with low levels of generalised trust, rather than simply reporting on the average level of generalised trust for a country.

CHAPTER 5. COLLECTIVE ASSETS

5.1 Collective assets and vulnerability

202. This final chapter focuses on collective assets, rather than those directly owned by an individual.²⁹ Collective assets can be seen as contributing to the development of individual capital stocks (e.g. government-provided education bolstering individual human capital), providing goods and services that are available regardless of income (e.g. public libraries and roads), and also providing a safety net of last resort in times of need when individual stocks (economic, human or social) are inadequate.

203. In the broadest sense, collective assets can be understood as those public goods that are available to all. This can include state-funded services such as military defense or transport infrastructure, as well as assets that make up the "commons"³⁰ such as natural resources and shared knowledge or technology like the Internet. In reality, some collective assets which are especially relevant in the context of vulnerability, such as social assistance or public services are not actually universally accessible, being either targeted at specific sub-groups of the population, or only being available within specific geographic locales.

204. This chapter breaks down collective assets into three categories - i) universal, ii) targeted, and iii) local. Given the wide array of factors that can be classed as collective assets, it does not aim to be comprehensive, focusing for the most part on state-provided resources such as health, education and social assistance. This is not to deny the importance of other types of collective assets³¹, but is more a reflection of current data availability. Indeed, this chapter presents the hardest challenge in terms of identifying indicators which relate directly to the vulnerability of individuals. Where this has not been possible, indicators of overall system strength or weakness have been presented instead.

Evidence on collective assets and vulnerability

Access to education

205. As outlined in the chapter on human capital, education is one of the principal means by which young people acquire knowledge and skills, and higher educational attainment is associated

²⁹ Although certain aspects of social capital dealt with in Chapter 4, such as the social characteristics of regions, communities, or neighbourhoods, can also be understood as collective assets.

³⁰ The "commons", or common-pooled resources (CPRs) are generally defined as "natural and humanconstructed resources in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others" (Ostrom et al., 1994).

³¹ There is, for example, a growing body of research on the crucial role of natural resources in influencing community resilience and vulnerability – as both a livelihood asset and a source of risk. See, for example, Cutter et al. (2009) for a recent literature review.

with a range of positive outcomes. All OECD countries provide universal coverage for compulsory schooling (generally from primary-level up to lower secondary level education), however there are differences in the coverage of public education systems, and the ability of different national systems to enable children to overcome social disadvantage and other inequalities.

206. The provision of Early Childhood Education and Care (ECEC) is an important issue here. There is a growing recognition that early access to ECEC provides young children, particularly from low-income and second-language groups, with a good start in life (OECD, 2006). Figure 5.1 shows the results of one famous pre-school programme which was targeted at African-American children from disadvantaged backgrounds in the Perry Elementary School in the United States in the 1960s. Many years later, the difference between those who were part of the programme and those who were not is striking: participation in the programme was significantly associated with better educational outcomes later on and with higher incomes and lower chance of criminal arrest in adult life (Schweinhart and Montie, 2004). Children without access to high-quality publicly-provided ECEC are therefore likely to be more vulnerable to adverse outcomes later on those that do have such access.





Source: Schweinhart and Montie (2004), published in OECD (2006).

207. Effective pre-primary school interventions can boost children's chances later in life. However, the quality of education systems throughout a child's school experience is important for determining whether he or she will be likely to overcome social disadvantage or other inequalities. The PISA surveys showed that some countries' education systems are more successful than others in boosting children's academic resilience (i.e. their ability to perform well on PISA tests despite being socio-economically disadvantaged). While such resilience is due to a combination of internal and external factors, schools are an important contributing factor to academic resilience (OECD, 2011b). Figure 5.2 shows the difference between countries of the strength of the relationship between socioeconomic background and PISA performance. Students in countries in the top right-hand of the figure are more likely to overcome social disadvantage and perform better than their socio-economic status would have predicted in PISA tests. The countries on the left-hand side of the figure are those where education systems have more of a tendency to crystallize performance differences due to socioeconomic background.

Figure 5.2. Strength of the relationship between reading performance and socio-economic background



Access to healthcare

208. People without access to healthcare, for whatever reason, are inherently vulnerable. Few people will go their entire lives without health problems, and for those without sufficient economic capital to access private healthcare, public healthcare provides a crucial safety net. In cases where the costs of healthcare are not completely covered by public or private health insurance, out-of-pocket expenses can represent a serious drain on households' economic assets resources. Himmelstein et al. (2007) has estimated that over 60% of all bankruptcies in the United States in 2007 were due to medical reasons, for example.

209. Even where public healthcare is universally available, not all contingencies are covered, and out-of-pocket expenditure can represent significant financial burdens for individuals and households. Out-of-pocket expenditure can reach catastrophic levels when people suffer severe illness or injury. Catastrophic health expenditure is commonly defined as out-of-pocket payments that exceed 40% of household disposable income after subsistence needs are met (Xu et al, 2007). Unsurprisingly, countries that have a greater reliance on out-of-pocket health expenditure also tend to have a higher proportion of households experiencing catastrophic expenditure (Figure 5.3).



Figure 5.3. Catastrophic expenditure and out-of-pocket payments for health care, late 1990s.

Access to social assistance

210. Social assistance and other forms of public transfers are a key way of reducing vulnerability. Figure 5.4 shows the poverty reduction effect of public taxes and transfers across OECD countries. In all OECD countries, public cash benefits and household taxes significantly reduce poverty although there are significant differences across countries.



Figure 5.4. The poverty reduction effect of public taxes and transfers, mid-2000s



Source: OECD (2008).

Access to local services

211. Local services provide an essential means for people to meet their basic needs (i.e. access to grocery services to buy food) and to fully participate in society. Effective and affordable public transport is of particular importance for reducing vulnerability to adverse outcomes. For example, one 2003 report in the UK noted that two-fifths of jobseekers said lack of transport was a barrier to getting a job; one-quarter of jobseekers say that the cost of transport is a problem getting to interviews; one quarter of young people did not apply for a particular job in the preceding 12 months because of transport problems; and, one in 10 people in low-income areas had turned down a job in the previous twelve months because of transport issues (Office of the Deputy Prime Minister, 2003).

Indicators of collective assets for measuring vulnerability

Access to healthcare

212. The majority of OECD countries provide universal, or near-universal coverage for a core set of healthcare services (Figure 5.5). While the precise coverage differs from country to country, these services tend to include consultations with doctors and specialists, tests and examinations, and surgical and therapeutic procedures. Dental care and pharmaceutical drugs are sometimes, but not always,

partially covered.³² However, in Chile, Mexico, Turkey, and the United States, significant proportions of the population – around 20-25% - are without any specific health coverage. In the United States, publicly-financed insurance is only available to 26% of the total population fitting certain criteria (the elderly, and people with low income or with disabilities), while an additional 55% of the population have access to basic healthcare coverage through private insurance. In 2010, the Patient Protection and Affordable Care Act was passed with the aim of increasing public healthcare coverage in the United States.



Figure 5.5. Health insurance coverage for a core set of services, 2009

Source: OECD Health Data 2011

213. Out-of-pocket expenditure represents 19% of all health expenditure, on average across OECD countries (OECD, 2011c, forthcoming). In some cases, out-of-pocket expenditure can be significant, which is especially problematic for low income earners (who also tend to have higher levels of illness and greater need for healthcare). A recent study looking at 11 OECD countries found that high out-of-pocket expenditure (defined as more than USD 1000 per year) was relatively uncommon amongst both low- and high- income earners in the United Kingdom, Sweden, and France (Schoen et al., 2010). While in most countries, above-average earners were more likely to report high out-of-pocket expenditure, the levels of high healthcare expenditure amongst low income earners was still high, reaching 29% in the United States and 20% in Switzerland, for example (see Figure 5.6).

³² See OECD 2009, Annex A for details.



Figure 5.6. Out-of-pocket medical costs by income level in selected OECD countries, 2010

Note: Data refer to out-of-pocket costs of USD 1000 or more in the past year. *Source*: Schoen et al. (2010), from OECD (2011c, forthcoming).

214. Data on levels of out-of-pocket expenditure can give an indirect indicator of where financial barriers to universal healthcare exist. Another way of measuring equity of access is through data on reported unmet health care needs. Figure 5.4 shows EU-SILC data on unmet need for a medical examination in European countries, by one of three reasons: i) could not afford to, ii) waiting time, and iii) too far to travel.³³ The data is presented for both the highest-income and lowest-income quintile of earners.

³³ EU-SILC also collects data on unmet medical needs for other reasons, namely if the respondent reported that: they could not take time because of work, care for children or others; they have a fear of doctor/hospitals/examination//treatment; they wanted to wait and see if the problem got better on its own; and, they didn't know any good doctor. However, as these are more to do with the personal situation of the person needing treatment, and less a measure of the collective asset itself, they have been excluded here.



Figure 5.7. Unmet need for a medical examination by reason and income quintile, 2009

European countries, 2009

Source: EU-SILC

215. At the higher end of the income-scale, unmet medical needs are a rare occurrence in OECD countries, according to this data. For those high-earners that do experience unmet needs, waiting time is often the primary reason. This is especially the case in Poland, Finland and Estonia, where excessive waiting time is a problem for a small but significant proportion of both high- and low-income earners. Unmet medical need is more prevalent at the lower-end of the income scale, although still negligible in the Netherlands, Slovenia and Spain. However, in Greece, Italy, and Poland, over 1 in 10 low-income earners experience unmet medical needs, with treatment cost being the principal reason. Travelling distance did not seem to be a major barrier to accessing medical treatment in most countries.

216. Inequalities in self-reported unmet medical needs have also been shown in non-European countries. A study by the Commonwealth Fund, a private research foundation, looked at unmet care need in eleven OECD countries and found that in the United States, over 1 in 3 adults with below-

average income, and 1 in 5 adults with above-average income, were either unable to visit a doctor with a medical problem, did not get recommended care, or failed to fill a prescription because of cost reasons (Figure 5.8). According to this broader definition, more than 1 in 4 people with below-average incomes in Germany, Australia, and Norway, also have experienced unmet medical need.

Figure 5.8 Unmet health-care needs due to high costs by income of the respondents, selected OECD countries in 2010



1. Either did not visit doctor with medical problem, did not get recommended care or did not fill/skipped prescription. *Source*: Commonwealth Fund (2010), from OECD (2011c, forthcoming).

Access to education

217. Access to primary and lower secondary education is universal (above 90%), and indeed compulsory, in OECD countries (OECD, 2011e). At pre-primary school level, there are differences between OECD countries in enrolment levels of children between the ages of 3 and 6 years although in most countries enrolment is generally high by age 5 (Figure 5.9). By age 4, only in Australia, Finland, Korea, and the United States are enrolment rates below 80%.



Figure 5.9. Enrolment in regulated early childhood education and care and in pre-primary education for children aged 3-6 years, 2005

Notes: The dark bars refer to enrolment in optional, centre-based pre-school provision (sometimes within a primary school setting), designed to foster the cognitive and socio-emotional development of children from 3 years to compulsory school age. The lighter bars refer to enrolments in formal primary schooling. Korean rates are for Ministry of Education kindergarten enrolments only.

Source: OECD (2006), based on OECD Education Database, 2005 and national Background Reports.

218. However, enrolment rates are not the most precise way of measuring equity of access or quality of service across countries. *Starting Strong II* (OECD, 2006), a study of early childhood education and care in OECD countries, lists a number of reasons to treat comparative analyses of such data with caution, as they fail to take into account or explain several important factors, namely:

• The conditions of access (e.g. is access fee-paying, and if so is it affordable for all parents? Are subsidies available for low-income parents? Are there eligibility criteria?).

- The scope of access (e.g. do children attend for half- or full-days? Is provision convenient for families, even those in remote locations?)
- The kind of access (e.g. do access rates refer to just one type of service, or are other services such as parental leave, family day care, playgroups etc. included?)
- The appropriateness of access (e.g. are activities appropriate for the age range? Are provisions made for children with special educational or access requirements?)

219. Similar problems exist when using enrolment data as an indicator of access to education at the other end of the age range, after compulsory education. Figure 5.10 shows enrolment rates for 15-19 year olds in public and private institutions.



Figure 5.10. Enrolment rates of 15-19 year olds, 2009

Note: Year of reference 2008 for Canada. *Source*: OECD Education Database

220. This indicator gives an approximate indication of where barriers to accessing upper secondary- and tertiary- education exist, without providing any real explanatory or contextual information. On average, across the OECD, 80% of 15-19 year olds were enrolled in education in 2009. While Mexico and Turkey were the countries with the lowest enrolment rates, at just over 50%, Israel, Chile, the United Kingdom, and Brazil also saw below-average enrolment rates at around 65-75%. This is compared to over 90% in Belgium, Poland, Ireland, and Slovenia.

221. An alternative way of assessing equity of access to education in different countries is to look at the ability of schooling systems to overcome or, conversely, to crystalise inequalities. The PISA

survey provides the opportunity to do this. For example, Figure 5.11 shows the difference in reading performance between students from different socio-economic backgrounds, as measured by the PISA index of economic, social and cultural status (ESCS).³⁴ Although there is a strong relationship between socio-economic status and students' reading performance in all countries, the strength of this relationship is particularly strong in countries at the right-hand side of the graph – in New Zealand, France, Austria, and Hungary. In these countries, socio-economically disadvantaged students face a greater challenge in overcoming the impact of their background on academic performance. In France and New Zealand, for example, there is around a 50-point difference in performance on the reading sale associated with a 1-unit increase in the PISA ESCS index – this is equivalent to more than one year's worth of education, on average.

Figure 5.11. Difference in reading performance between students from different socio-economic backgrounds



Score point difference in reading performance associated with one unit increase in the PISA index of economic, social, and cultural status (ESCS)

Note: The empty bars indicate that the slope of the socio-economic background is not statistically significantly different from the OECD average slope. Countries are ranked in ascending order of the difference in performance between students from different socio-economic backgrounds.

Source: OECD, PISA 2009 Database, Table A5.1.

222. Another indicator of entrenched inequity in education systems is whether the quality of schooling within a country is heavily dependent on location. Figure 5.12 provides an indicator of this by showing the score point difference in PISA reading performance associated with being in a city school or a rural school, after adjusting for socio-economic background.

³⁴ The PISA index of economic, social and cultural status takes into account the highest occupational status of parents, the highest educational level of parents in years of education according to ISCED, and whether or not the home has certain cultural and material possessions. See OECD (2010), Annex A1 for more detail.



Figure 5.12. Difference in PISA reading performance associated with being in a urban or rural school, after adjusting for socio-economic background, 2009

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West.

Source: PISA 2009 database, published in OECD, 2011e.

223. On average in OECD countries, students in city schools outperform rural areas by more than 20 score points, or the equivalent of about half a year of additional education. However, this difference is the greatest in Hungary, Turkey, the Slovak Republic, and Chile.

Targeted collective assets

224. Most OECD countries have in place targeted social security programmes that provide collective insurance against a range of risks (e.g. unemployment, sickness, long-term disability, support to spouse and dependent child in case of need). These programmes act as last-resort style

resource, providing a safety net for those households or individuals who lack other types of personal assets. Selecting appropriate indicators to compare the contribution of such collective assets to reducing vulnerability in different countries is not straightforward, however. First of all, social security programmes differ in terms of type (e.g. financial assistance, or in-kind benefit), eligibility, benefit-level and duration, and so comparability can be an issue. Secondly, data availability is an issue, especially as here we are not necessarily concerned with the benefit take-up rate, but rather with the proportion of people who are vulnerable because their access to collective assets is inadequate or limited in some way.

225. In the absence of data which can help to identify vulnerable groups within a country in terms of access to such collective assets, this section provides three indicators which provide some idea of where benefits may be inadequate, focusing on social assistance, unemployment benefits, and social housing.

Social assistance

226. The aim of social assistance is to provide financial protection to society's poorest. Figure 5.13 models the net incomes of four different household types who do not have any earnings from employment and who are also not entitled to unemployment benefits. The results show the levels of resources guaranteed by benefits "of last resort" as percentages of the median equivalent disposable household income and in relation to the three poverty thresholds in countries where these data are available. Net income figures take into account social assistance (where available) as well as other benefits and taxes that typically have an influence on the income situation of social assistance recipients.



Figure 5.13 Net incomes of social assistance recipients, 2005¹

Percentage of median equivalent disposable household







1. Figures relate to adults of working age and their children. In the case of married couples, the partner is assumed to be inactive.

2. Household income figures refer to values around 2000, up-rated to 2005 with the consumer price index.

Source: OECD Tax-Benefit Models and calculations based on Förster and Mira d'Ercole (2005).

227. In most OECD countries presented here, benefits of last resort (including housing benefits, light-shaded columns) are set above the lowest poverty threshold of 40% of median disposable income. In six countries - Denmark, Finland, Ireland, the Netherlands, Sweden and the United Kingdom - single persons relying on these benefits are likely to have income close to or above the 60% median poverty line. In another ten countries, the level of benefits of last resort is set at least above 40% but below 60% of median income. However, in most countries where benefit entitlements can potentially lift income close to or above the poverty line, overall entitlements depend critically on the level of housing costs that qualify for housing-related cash support. If benefits conditional on rental expenditure are not available at all (series labelled "no housing-related benefits", dark-shaded columns) then incomes are less than half the median income in all countries and exceed the lowest poverty threshold of 40% median income in only five countries (Luxembourg, Australia, Denmark, the Netherlands and Norway).

228. In almost half of the countries, the net income of single social assistance recipients without access to housing benefits is below about one quarter of the median disposable income, and in eight of these countries this is the case regardless of whether any housing-related benefits are available or not. In the United States, the income of a single person receiving social assistance benefits is below 10% of the median, while Greece, Italy and Turkey do not operate universal minimum income schemes for working-age individuals. Comparing across different family types, net incomes of social assistance recipients living in two-children family households (second and fourth panel of Figure 5.13) are in general higher relative to the poverty thresholds than for single persons (first panel). In relation to the data without housing-related benefits the difference exceeds 10 percentage points in seven countries: Australia, Canada, Germany, Hungary, Japan, the United Kingdom and the United States.

Unemployment benefits

229. Unemployment benefits are designed both to ensure a degree of income security in the case of job loss and to provide a financial means of facilitating job searches (Immervoll, 2010). However, not everyone who is classified by labour force surveys as unemployed receives an unemployment benefit. Figure 5.14 shows the proportion of people who are classified as unemployed according to ILO criteria³⁵ receiving unemployment benefits in countries were data were available, for 1995 and 2001.

230. According to these results, in 2001, only around one-third of all unemployed people received unemployment benefits, ranging from around 70% in Austria, Belgium, and Germany, to around 20% or less in Greece, Italy, Norway, Poland, the Slovak Republic, and Spain. Unemployed people without previous work experience are particularly vulnerable in terms of inadequate access to unemployment benefits, according to this data (chart C), with 20% of the unemployed in this category or less receiving benefits.

³⁵ i.e. persons who in the survey reference week, did not have any job, searched for work in the four weeks preceding the interview, and were able to take up work if an offer were to be found (Immervoll et al., 2004).



Figure 5.14. Proportion of ILO unemployed receiving unemployment benefits

Local assets

231. This section considers collective assets that are tied to a particular local area. There is some overlap between this section and the "universal assets" section as access to health and education can be dependent on where an individual lives, as for example, indicator 5.12 on PISA performance in urban and rural areas shows. This section presents a couple of indicators which explicitly provide information on local conditions and access to services.

Access to local services

232. Figure 5.15 shows the share of people living in urban and non-urban areas in European countries who have difficulty accessing two or more of the following essential services: public transport, primary healthcare, postal services, grocery services, and banking services. The figure presents data both for those at risk poverty and not at risk of poverty. In general, people who are at risk of poverty, and people living in non-urban areas, have greater difficulty accessing these services. In non-urban areas, 35% of people living at risk of poverty have difficulty accessing two of those essential services, and almost 1 in 10 has difficulty accessing all five services. Nonetheless, in non-urban areas, even those on higher incomes can experience difficulty accessing these services, with over a quarter of people who are not at risk of poverty in non-urban areas reporting difficulty of access for two essential services.

Figure 5.15. People excluded from two or more essential services in urban and non-urban areas by poverty status, 2007



Percentages, EU countries"

Note: Proportion of people reporting difficulty of access to more than one of the following essential services: public transport, primary healthcare, postal services, grocery services, and banking services. EU refers to EU-25 excluding Malta. Source: EU-SILC, 2007, adapted from EC (2010).

233. Figure 5.16 looks at one of these services – access to public transport - in more detail, showing the percentage of people living in non-urban areas who experience difficulty accessing public transport, by poverty status. Belgium is by far the country with the largest share of people experiencing difficulty accessing public transport, with 83% of those at risk of poverty and 74% of those not at risk reporting difficulties. In Ireland and Finland, around half of the population, regardless of poverty status, lack easy access to public transport. In most countries, those with lower incomes experience greater difficulties with public transport although in Germany, and (to a lesser extent) the Slovak and Czech Republics, it is people on higher incomes that experience greater difficulties.



Figure 5.16. People living in non-urban areas with difficulty accessing public transport, 2007

Note: Data for the Netherlands and Slovenia refer to urban and non-urban areas combined. The sampling size for data for atrisk-of-poverty groups in France and the UK were too small to give reliable results.

Discussion

234. Collective assets matter in terms of vulnerability. The impact on quality of life associated with a negative shock such as unemployment or a serious health problem is influenced heavily be access to collective assets. Well designed health, social assistance, and education systems can go a long way towards ameliorating the negative impacts of negative events. Nonetheless, it is difficult to capture the effectiveness of collective assets through a small number of indicators.

235. The focus of this chapter has been on indicators of coverage and access. This gives a broad overview of the risk of exclusion, but omits a detailed consideration of the quality of the services provided. In some cases, such as health, the impact of quality on outcomes is obvious. However, even in the case of social assistance systems, the effectiveness of the system is about much more than

just the quantity of money transferred. A well-designed social assistance system can speed the transition to independence, or at least not place barriers in the way. By way of contrast, a poorly designed social assistance system can create a poverty trap, which may offset much of the reason for having such a system in the first place.

236. The agenda ahead is less clear for collective assets than for economic, human, or social capital. To a very large degree, to identify a set of indicators that can measure whether social policy "works" is also to resolve the problem of what constitutes good practice in social policy, and this would be a very ambitious goal.

237. EU-SILC does provide some data on access to public and other essential local services, including access to healthcare, compulsory schooling, grocery services, public transport, and banking. While this data cannot give an idea of the quality or adequacy of such services, it nonetheless can provide an initial idea of the vulnerable population regarding access to these types of collective assets.

CHAPTER 6. CONCLUSION

238. Because we live in a world of risk and uncertainty, policy makers need to consider not only those who are in need today but those who are vulnerable to adverse outcomes in the future. The "risky events" which grab the headlines, such as economic crisis or natural disasters, typically occur at the macro- or meso- level, affecting whole systems and geographic communities. However, the impact of these events, along with that of other more personal catastrophes, is ultimately felt at the individual and household level.

239. While it is important to understand and measure systemic vulnerability, the focus of this paper has been on how best to assess the resources that individuals can count upon: i) to reduce their exposure to risk; ii) to mitigate the impact of an adverse event; and iii) to use to cope during times of need. In this respect, the concept of vulnerable has been defined in this paper as referring to those people who lack the assets required to cushion themselves from negative events such as a fall in income, becoming unemployed, or being affected by a major health problem.

240. The main goal of this paper has been to identify indicators of vulnerability using an assetbased framework and to set out an agenda for future measurement. Table 6.1 below lists the indicators proposed in each chapter for the various asset categories, broken down into those that can be reported on from current data and those that it would be desirable to develop in the future.

241. Economic capital and human capital are the areas where the most data is currently available, and yet even here, there are significant areas where statistical development is needed. The ideal indicators of economic capital vulnerability would be measures of net worth and liquid assets. Some limited data are available through the Luxembourg Wealth Study (LWS), which provides data on the distribution of household net worth across the population; however, these data are only available on a comparable basis for a limited selection of countries, and the underlying national data are collected only infrequently. The application of LWS methodology and more widespread collection of data on net worth are essential for understanding the economic vulnerability of individuals and households.

242. Regarding human capital, data on educational attainment are available from a range of sources, notably national labour force surveys; thanks to initiatives such as PISA, ALLS and the forthcoming PIAAC survey, data on actual skills levels of schoolchildren and the working population are also set to become increasingly available. Two important areas where further development is needed are those of non-cognitive skills and mental health.

Asset type	Indicators (and data sources)	Areas for future development		
Economic capital	- Proportion of the population who do not own their own home (EU-SILC)	- Measures of the net worth poor		
	- Proportion of the population indicating subjective liquid asset poverty (EU- SILC)	- Measures of the liquid asset poor		
Human capital	- Proportion of the population with less than ISCED 3 attainment in education (OECD Education database, national Labour Force Surveys)	- Non-cognitive skills		
	- Proportion of students failing to attain PISA level 2 competencies in reading and mathematics (OECD PISA database)	- Mental Health		
	- Proportion of adults lacking basic literacy and numeracy skills (IALS, ALL and PIAAC – forthcoming)			
	- Proportion of adults facing limitations in daily activities due to health issues (EU-SILC)			
Social capital	- Proportion of people who do not have contact (distant, or face-to-face) with friends or family (EU-SILC, 2006)	- Measures of "weak" ties, or extended networks		
	- Proportion of people reporting they have no-one to count on in times of need (EU-SILC, 2006)	- Ongoing and comparable measures of social contact and social capital outcomes		
	-Proportion of people living in areas with low social trust (Gallup. European Quality of Life Survey)			
Collective assets	- Proportion of people reporting unmet medical care need (EU-SILC)	-Measures of socio-economic, urban vs rural, or other inequalities in access to public services		
	- Proportion of people excluded from 2 or more essential services (EU-SILC)	- Measures of those who are vulnerable because they are not eligible or are otherwise excluded from social assistance or employment benefits; or because the social assistance they receive is inadequate to cover needs.		

Table 6.1. Proposed indicators for measuring vulnerability

243. Non-cognitive skills (or personality traits) are currently very difficult to measure across populations on a comparable basis, and yet are potentially as relevant to vulnerability as cognitive skills, if not more so. An ongoing OECD project will hopefully provide guidance in this area.

244. Considering the impact of mental health problems on productivity, well-being, morbidity and premature mortality, a better understanding of the prevalence and severity of mental health problems within and across countries is needed. Survey instruments such as the General Health Questionnaire or the WHO's most recent version of the Composite International Diagnostic Interview (CIDI) provide potential instruments, but much work is needed to ensure ongoing and comparable data collection.

245. The other two dimensions of the asset-based framework used in this paper – social capital and collective assets - are much more challenging in terms of data availability and identifying the best indicators, and yet both are crucial for reducing vulnerability and strengthening resilience. The EU-SILC 2006 module on social participation provided much useful information on patterns of socialising and other forms of social engagement in European countries. However, it is important that such data is collected on an ongoing basis in order to track patterns over time. The OECD ongoing project on the measurement of social capital aims to producing recommendations and guidelines in 2013.

246. Measuring the impact of collective assets and identifying the vulnerable population is possibly the hardest challenge of all. This paper has presented some indicators that allow assessing the vulnerable population in terms of access to public services. However a better understanding is needed of where public services or government-provided social assistance are inadequate because they fail to reach the people in need or because they fail to overcome socio-economic or other inequalities.

247. A secondary goal of this paper has been to describe the size and characteristics of the vulnerable population. This has proved a difficult task because of limited data availability. Information is not currently available for all types of assets, so there are areas where we simply cannot provide a good estimate of the number of vulnerable. More significantly, vulnerability is a function not of access to all types of capital at the same time, i.e. information on the joint distribution of the four types of capital stocks mentioned here is critical. To get a good appreciation of the size, evolution and compositions of the vulnerable population would require being able to look at the overlap between the populations with low economic capital, low human capital, low social capital, and poor access to collective assets. This task is not impossible, but would represent a significant research project in its own right, and is beyond the scope of this review. EU-SILC and other household surveys have the potential to shed light on the joint distribution of these capital stocks; alternatively, techniques should be used to link micro records from surveys providing information on ownership and access to each of the various types of assets discussed in this paper.

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APPENDIX A.

Table A1. Wealth classification matrix in the LWS

Country	LWS acronym	Canada	Finland	Germany	Italy	Norw ay	Sw eden	United Kingdom	United States			
		SFS 1999	HWS 1998	SOEP 2002	SHIW 2002	IDS 2002	HINK 2002	BHPS 2000	PSID 2001			
	FINANCIAL ASSETS											
Total	TFA	Σ	Σ	Σ	Σ	Σ	Σ	Σ	Σ			
Deposit accounts: transaction, savings and CDs	DA	Y	Y	Y	Y	Y	Y^2	Y	Y			
Total bonds: savings and other bonds	тв	Y	Y	Y	Y	Y	Y	Y				
Stocks	ST	Y	Y	Y^1	Y	Y	Y	Y				
Mutual funds and other investment funds	TM	Y	Y	Y	Y	Y	Y					
Life insurance	LI	_	Y	_	Y	_	Y ²	Y^4	Y			
Other financial assets (exc. pension)	OFA	Y	Y	Y ³	Y	Y	Y ⁵	_	Y			
Pension assets	PA	Y	Y	-	Y	_	_	Y	Y			
			NON FINA N	NCIAL ASSET	S							
Total	TNF	Σ	Σ	Σ	Σ	Σ	Σ	Σ	Σ			
Principal residence	PR	Y	Y	Y	Y	Y	Y	Y	Y			
Investment real estate	IR	Y	Y	Y	Y	Y	Y	Y ⁶	Υ'			
Business equity	BE	Y	-	Y^6	Y	Y^6	Y^6	Y	Y			
Vehicles	VH	Y	Y	Y ⁸	Y	Y	_	Y^9	Y ⁹			
Durables and collectibles	DRCL	Y	Y	Y	Y	Y	_	_	_			
Other non-financial assets	ONF	-	-	-	-	Y^5	_	-	Y			
	LIABILMES											
Iotal	ID	2	2	2	2	Y	Y	2	2			
Home-secured debt	HSD	Σ.	Y	<u>Σ</u>	Y	_	Y '	Y	Σ			
Principal residence mortgage	MG	Y	Y	Y		Y	Y					
Other property mortgage	OMG	Y	Y	_	Y'	Y						
Other home-secured debt (incl. line of credit)	OHSD	Y	-	Y	-		Y	0	0			
Vehicle loans	VL	Y	Y	Y	Y	Y''	Y	Y	Y			
Installment debt (incl. credit card balance)	IL	Y	Y	Y12	Y	Y						
Educational loans	EL	Y	Y	-	Y	Y	Y					
Other loans from financial institutions	OL	Y	Y	-	Y	Y	Y					

Note: "Y" denotes a recorded item; "-" denotes a not recorded item; "Σ" indicates that the variable is obtained by aggregation of its components.

1. Excludes checking deposits. 2. DA and LI recorded together. 3. Includes only some pension assets. 4. Includes collectibles and some mutual funds not included in TM. 5. OFA and ONF recorded together. 6. Business assets only. 7. IR recorded net of OMG. 8. As recorded in the 2003 wave. 9. VH recorded net of VL. 10. HSD, VL and IL recorded together. 11. MG, OMG, VL and IL recorded together. 12. Includes also VL, which implies a double-counting.

Source: OECD (2008).