The Statistical Insights series (http://oe.cd/statinsights), launched in 2016, is a dedicated blog, housed on the OECD Insights blog, that highlights indicators that tend to be less visible than standard headline indicators, but that provide interesting evidence for analysis and policy making in some areas. The blog includes a story on the usefulness of the indicator, graphs to illustrate the story, a short description of the indicator, links to where the data can be found, and a further reading section. This compendium brings together the latest Statistical Insights published, including:

- Government assets matter too, not just debt (28 January 2016) 5
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Government assets matter too, not just debt

In analysing the sustainability of government finances, the focus tends to be on gross government debt as a percentage of GDP. However, as gross debt does not take into account the asset side of government balance sheets, this measure only tells part of the story. Assets may generate income or be sold in order to redeem part of gross debt, and are therefore very relevant in assessing the financial health of government as well. A government with a high level of liabilities but also with significant amounts of assets on its balance sheet may be better off than a government with a lower level of liabilities and hardly any assets. Therefore, net government debt, which incorporates information on assets, constitutes a useful additional measure to gross government debt. It provides insight into the capabilities of governments to service debt in the longer run and thus presents a more comprehensive and nuanced picture of government financial health.

How do OECD countries compare in terms of gross and net government debt?

The impact of the inclusion of financial assets in the debt measure differs considerably across countries. The impact is particularly large for Norway, Japan (which may be partly due to the fact that debt data are not consolidated across different government units, i.e. gross debt figures include liabilities between these units which cancel out in net debt data), Finland, Luxembourg, Sweden, Slovenia and Greece. These countries have a relatively large amount of financial assets on their balance sheets, and so they rank lower on the basis of net government debt than on the basis of gross debt. For some of them, the debt measure even changes sign, implying that the amount of financial assets is higher than that of financial liabilities. On the other hand, the difference is relatively modest for the United States, Hungary, Italy, Poland, Belgium and the Slovak Republic. These countries only have a small amount of financial assets on their balance sheets and their net and gross debt ratios are therefore similar.

What happened during the crisis?

During the recent financial crisis most countries experienced an increase in their debt levels. This was a direct consequence of the economic downturn, which resulted in lower tax revenues and increasing expenditures. Furthermore, some governments increased their spending to actively support the economy and acquired assets in financial institutions to prevent a collapse of the financial sector. As these policies affected liabilities and assets in different ways, the impact on gross and net government debt levels also differed among countries. And of course, changes in GDP levels also affected debt ratios in different ways.
Figure 2 presents the changes in gross and net debt ratios between 2007 and 2013 for selected OECD countries. Most countries experienced increases in both gross and net debt ratios during the crisis, but the extent of such increases differs substantially between countries. Ireland reported the largest increase in gross debt ratio, from 26.9% in 2007 to 125.4% in 2013. This increase was the result of a sharp rise in liabilities combined with a decrease in GDP. As assets only increased to a small degree, the net debt ratio showed a sharp increase as well (from -1.4% to 72.8%).

Greece, Portugal, and Spain also registered large increases in their gross debt ratios in the period 2007 to 2013. As was the case with Ireland, this was due to a combination of increased liabilities and a decrease in GDP levels. In that respect, it can be noted that the United States reported a larger relative increase in liabilities than Portugal and Greece (86.0% versus 77.5% and 28.5%), but due to an increase in its GDP level over the same time period, the gross debt ratio increased to a lesser extent (by 46.4 percentage-point versus 64.4 percentage point and 75.1 percentage point in Portugal and Greece, respectively). It is interesting to note that while Spain recorded a lower increase in its gross debt ratio than Portugal and Greece, in terms of net debt ratios, the increase was higher in Spain. And the increase in the net debt ratio in the United States was almost as high as in these three countries, although the increase in the US gross debt ratio was much lower. Both effects are due to the fact that Spain and the United States experienced smaller increases in the value of their assets than Portugal and Greece. Therefore, the change in the net debt ratio for the former countries is relatively close to the change in their gross debt ratio, contrary to the latter countries.

The Czech Republic and Poland are the only two countries in which the net debt ratio increased more than the gross debt ratio. Both countries recorded increases in liabilities of more than 80%, whereas the value of assets only increased by 0.8% for the Czech Republic and by 8.7% for Poland. Combined with increases in their GDP levels of respectively 1.0% and 5.7% per year, this led to increases in their net debt ratios that exceeded those in their gross debt ratios.

The measure explained

In this Statistical Insight, we compare gross debt to net financial debt, calculated as gross debt minus the value of all financial assets. Whereas in gross debt only liabilities defined as debt instruments are taken into account, i.e. liabilities that constitute a financial claim on the debtor and that involve payments of interest and/or principal (therefore excluding liabilities in the form of shares, equity, financial derivatives and monetary gold), all financial assets, including e.g. equity, are taken into account in calculating net debt. The rationale is that all financial assets are deemed to be available for debt redemption. In some cases, non-financial assets are taken into account in calculating net debt, but as some of these assets may be highly illiquid (like land or infrastructure) and relevant data are only available for a few countries, they are not included here. With regard to valuation, the nominal value is used for liabilities, as that is the amount that the government owes the creditors, and market value is used for assets, as that best reflects the amount that can be obtained to service the debt.
Where to find the underlying data

The underlying data are published in the OECD data warehouse, OECD.Stat at [http://stats.oecd.org/Index.aspx](http://stats.oecd.org/Index.aspx):


- Debt securities: OECD (2015), "Public Sector Debt", *OECD National Accounts Statistics* (database), taking the 4thquarter data of each year, except for debt securities 2007, nominal value, for Greece, Poland and Slovenia for which the data have been extracted from Eurostat, Government consolidated debt at face value – Debt securities.

Further reading


- European Commission; IMF; OECD; UN; and World Bank (2009), "System of National Accounts 2008"


Analysing the role of different firms in international trade

Conventional international trade statistics offer a picture of trade flows between countries, broken down by types of goods and services. While this is an important input for trade analyses, these data do not offer insights into the actors, or the types of firms, that are actually engaged in cross-border trade. The OECD Trade by Enterprise Characteristics (TEC) data do provide such information, giving important insights on the role of firms in Global Value Chains. They highlight that large firms continue to dominate international trade, and that, often, those firms that are among the most important exporters, are also responsible for the majority of imports. The TEC data also provide information on the role of SMEs in international trade, across industries and across countries, showing, for example, that although SMEs generally export to neighbouring markets, they import from a much wider geographical base.

Trade is concentrated among a few, large firms

TEC data essentially provide a ‘Who’s Who’ of international trade. For example, they show that only a small percentage of firms is actually engaged directly in international trade, typically below 10% in OECD countries, with only a few exceptions – notably in small economies such as Slovenia and Estonia.

Moreover, as shown in Figure 1, the bulk of international transactions (in value) is concentrated among firms with more than 250 employees. In the United States for example, firms with more than 250 employees account for 72% of exports, and in a further ten countries – ranging from smaller economies such as Finland and Sweden to other large economies such as Canada, France, Germany and the United Kingdom – more than two-thirds of exports are accounted for by large firms.

The importance of large firms is further highlighted when examining the concentration of trade among the very largest firms (based on employee numbers) in each country. On average, the top 100 enterprises in OECD countries account for 40% of exports and imports. And in smaller economies, such as Finland, Hungary and Luxembourg, these shares can be significantly higher (up to 90%).
Firms engaged in exports also account for the majority of imports

Across OECD member countries, 75% of manufacturing exporters also represent over half of importers. These two-way traders account for virtually all (98%) of manufacturing trade value. In Canada, which provides estimates for the total economy, (i.e. manufacturing and services) two-way traders account for around two-thirds of exporting firms, and one-quarter of importing firms; in terms of trade value, they account for three-quarters of exports and imports. The significant contribution of the two-way traders amongst manufacturers provides an indication of the importance of imports for exports (i.e. imports used in producing exports), and so the potential counter-productive nature of import tariffs.

Investment in knowledge-based capital can help drive SME export performance

Large firms tend to account for virtually all exports in (tangible) capital intensive industries such as motor vehicles and other transport equipment, as shown in Figure 4. In contrast, smaller firms make a larger contribution to exports of industries such as furniture, textiles and clothing, where specialized manufacturing, niche products, and investment in knowledge based assets, such as brand, design, and organisational capital (e.g. flexible production processes) provide opportunities to create comparative advantages.

The importance of large firms in manufacturing exports does however vary across countries. In the US and Mexico, for example, large firms dominate across nearly all sectors. This is likely to reflect a combination of the large size of the domestic US market as well as maquiladora (processing firms) relationships between Mexico and the US. On the other hand in France and Germany, SMEs are the key exporters in a number of sectors, such as apparel and textiles.

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**Figure 2. Share of two-way traders in exporting and in importing firms (number of enterprises)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of exporters (industry excluding construction)</th>
<th>Share of importers (industry excluding construction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>80%</td>
<td>90%</td>
</tr>
<tr>
<td>Belgium</td>
<td>90%</td>
<td>80%</td>
</tr>
<tr>
<td>Canada</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Denmark</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>Estonia</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Finland</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>France</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Germany</td>
<td>60%</td>
<td>60%</td>
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<tr>
<td>Greece</td>
<td>40%</td>
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<tr>
<td>Hungary</td>
<td>30%</td>
<td>30%</td>
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<tr>
<td>Italy</td>
<td>20%</td>
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<tr>
<td>Netherlands</td>
<td>10%</td>
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<tr>
<td>Poland</td>
<td>0%</td>
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<tr>
<td>Portugal</td>
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<td>Slovak Republic</td>
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<td>Slovenia</td>
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<td>Spain</td>
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<tr>
<td>Sweden</td>
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<tr>
<td>United Kingdom</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: (OECD 2016) Trade by enterprise characteristics database

**Figure 3. Share of large firms (>250 employees) in export value, by reporting country and industry, 2013**

- United States
- Mexico
- France
- Germany

*data not available for the United States

Source: (OECD 2016) Trade by enterprise characteristics database
Small firms typically export to neighbouring markets – but source imports more widely

Compared to large firms, small firms are more likely to export to markets relatively close to their home country – evidence of the fixed costs related to breaking into new markets that tend to be relatively higher for smaller firms. Figure 3 shows this by illustrating the aggregated trade destinations for the ten European countries that report such data (Austria, Belgium, Czech Republic, Germany, Hungary, the Netherlands, Poland, Portugal, Slovak Republic and Spain). It shows for example that small firms (less than 50 employees) account for nearly 20% of trade with nearby destinations such as Germany, Italy and the Netherlands, but only for slightly more than 5% of exports to China, Japan or the United States. In many instances, this reflects the role of SMEs as upstream suppliers within, typically regional, value chains.

On the other hand, barriers to importing appear less onerous than those for exporting. For example SMEs accounted for over half of all imports from China and India into European countries, and over 40% of imports from the United States and Japan, possibly also reflecting affiliate relationships with parent MNEs from these countries.

The measure explained

TEC Statistics break down international merchandise trade statistics by the characteristics of the trading enterprise. The data are generally produced by national statistical authorities through the linking of microdata from the census of customs transactions (used for compiling national merchandise trade statistics) to a centralised business register containing both characteristics and reporting structure of all firms operating within that national boundary. This microdata linkage for TEC is facilitated by the possibility of using (or developing) common identifiers between the trade register and the business register, which also means that TEC statistics can be compiled without imposing additional burden on respondents.

There is growing appreciation within the international statistics community that microdata linking provides significant scope to better understand production in an increasingly globalised economy. New characteristics, notably whether the firm is foreign or domestically owned, have recently been added to TEC dataset, and efforts are ongoing to develop similar data for services trade. Increasingly, efforts are now also being made to integrate aspects of TEC within the heart of the statistical information system, such as structural business statistics, the national accounts and supply-use tables, not least to provide a holistic perspective on the nature of trade, production and investment. The OECD for example, as a response to the G20, recently developed estimates of the upstream contribution to exports made by SMEs.

One caveat in the interpretation of the role of SMEs in international trade is that throughout the international statistical system, firm size is currently defined at the enterprise level, and that these enterprises may still be part of a larger enterprise group. Pilot studies are being developed to identify such dependent SMEs from independent SMEs.
Where to find underlying data

The Trade by enterprise characteristics database is organised in ten different datasets, all available on OECD. Stat at http://stats.oecd.org/Index.aspx. The ones used in this blog post are:

» Trade by firm size: (OECD 2016), “TEC by sector and size class”, OECD Trade by enterprise characteristics (database)
» Shares of top enterprises: (OECD 2016), “TEC by Top enterprises”, OECD Trade by enterprise characteristics (database)
» Two-way traders: (OECD 2016),“TEC by type of trader”, OECD Trade by enterprise characteristics (database)
» Partner country and size: (OECD 2016), “TEC by partner countries and size-class”, OECD Trade by enterprise characteristics (database)

Useful links

» Trade by enterprise characteristics website: http://oe.cd/tec
» Using TEC: the integration of FDI into TiVA: http://oe.cd/tiva-fdi
More than four out of ten workers in European OECD countries held jobs where the quality of the working environment resulted in job strain in 2015, with male, low-educated, and younger workers disproportionately affected and significant differences across countries. Nearly two-thirds of workers in Greece and over half in Spain, for example, worked in ‘strained’ jobs in 2015.

Why do statistics on the Quality of the Working Environment matter?

It goes without saying that working in a strained environment will impact negatively on the quality of individuals’ lives and their well-being but measures of job strain can also provide important insights into other policy domains too, such as changes in and drivers of labour force participation, productivity and economic performance more generally.

...And what are they telling us?

Data show that, on average, 43% of workers in European OECD countries experienced job strain in 2015. Around half of these workers cited time pressure at work as a contributory factor and one-third reported exposure to physical health risk factors. Indeed, over one-fifth reported both as contributory factors. Moreover, factors considered as alleviating job strain were relatively low. Less than one-third of workers reported having autonomy at work and learning opportunities, while only one quarter described their social work environment as supportive and more than half had neither resource.

Among European OECD countries (for which data are available in 2015), Scandinavian countries typically have the lowest levels of job-strain, with Finland (28%) and Denmark (30%) performing best. The two countries with the highest rates of job strain are Greece (64%) and Spain (52%).

![Figure 1. Incidence of Job Strain in selected OECD countries, 2015](source: OECD Job Quality Database)

Job strain differed significantly across education levels. Workers with high levels of education enjoy the lowest levels of job strain (29%), lower than workers with medium levels of education (42%) and significantly lower than those with low education levels (62%). Differences across age groups are less marked however. Younger workers aged 15-29 have only a slightly higher percentage of job strain (45%) than older workers (42%).
Gender differences are also apparent. For example, job strain amongst men is 15% higher than amongst women in Poland, 12% higher in the Czech Republic, and 9% higher in Greece, while the reverse is true in Finland, Ireland, and Austria. Overall, within European OECD countries, 45% of men experience job strain, as opposed to 40% of women.

What happened to the Quality of the Working Environment during the economic crisis?

There were significant differences between countries in terms of how the quality of the working environment was affected during the initial phase of the economic crisis. In Belgium, Finland, France, Luxembourg and the Slovak Republic, the quality of the working environment deteriorated significantly between 2005 and 2010, but returned to pre-crisis levels in 2015. In other countries however, such as Austria, Hungary, and Spain, measures of job strain improved during the crisis, in large part reflecting the fact that the crisis saw disproportionate losses in low quality jobs. Indeed since 2010, as employment has begun to grow again, so too have measures of job strain in all three countries.
Interestingly, a remarkable decline in the quality of the working environment took place in countries that enjoyed the highest levels in 2005, such as Sweden, the Netherlands and Ireland, although all three countries remain at the low end of the job strain scale. At the same time those countries where the quality of the working environment was comparatively low in 2005, such as the Czech Republic, Poland, Italy, Germany and Portugal, saw some improvement. Overall, the quality of the working environment showed a process of convergence across countries between 2005 and 2015.

The measure explained

Job strain forms one of three dimensions of the OECD’s framework to measure and assess the quality of jobs, which also includes measures of earnings quality (that capture the extent to which earnings contribute to workers’ material well-being) and labour market security (that captures those aspects of economic security related to the risks of job loss and its economic cost for workers). Measures of job strain relate directly to the quality of the working environment, which captures non-economic aspects of job quality. Together, they provide a comprehensive assessment of job quality.

Strained jobs are defined as jobs where workers face a higher number of job demands than the number of resources they have at their disposal. Two indicators of job demand and two of resources are used in the OECD’s Job Quality Framework. Job demands include: i) time pressure, which encompasses long working hours, high work intensity and working time inflexibility; and ii) physical health risk factors, such as dangerous work (i.e. being exposed to noise, vibrations, high and low temperature) and hard work (i.e. carrying and moving heavy loads, painful and tiring positions). Job resources include: i) work autonomy and learning opportunities, which include workers’ freedom to choose and change their work tasks and methods, as well as formal (i.e. training) and informal learning opportunities at work; and ii) social support at work, which measures the extent to which supportive relations prevail among colleagues. The overall Job Strain index, thus, refers to those jobs where workers have greater demands than resources (See OECD 2015a, pp 24-26; OECD 2014a, pp 104-114).

Where to find the underlying data


Further reading

» Non-regular employment, job security and the labour market divide, OECD (2014b), OECD Employment Outlook 2014, Chapter 4
Although GDP per capita is often used as a broad measure of average living standards, high levels of GDP per capita do not necessarily mean high levels of household disposable income, a key measure of average material well-being of people. For example, in 2014 Norway had the highest GDP per capita in the OECD (162% of the OECD average\(^1\)), but only 115% of the OECD average for household disposable income\(^2\). And in Ireland, GDP per capita was 24% above the OECD average, while household disposable income per capita was 22% below the OECD average. Conversely, in the United States GDP per capita was 34% above the OECD average while household disposable income was 46% above the OECD average. These differences between GDP per capita and household disposable income per capita reflect two important factors. First, not all income generated by production (GDP) necessarily remains in the country; some of it may be appropriated by non-residents, for example by foreign-owned firms repatriating profits to their parents. Secondly, some parts may be retained by corporations and government and not accrue to households.

**International rankings of household disposable income per capita and GDP per capita can differ significantly**

GDP per capita, by design an indicator of the total income generated by economic activity in a country, is often used as a measure of people’s material well-being. However, not all of this income necessarily ends up in the purse of households. Some may be appropriated by government to build up sovereign wealth funds or to pay off debts, some may be appropriated by firms to build up balance sheets, and yet some may be appropriated by parent companies abroad repatriating profits from their affiliates. At the same time, households can also receive income from abroad for example from dividends and interest receipts through investments abroad.

As such, a preferred measure of people’s material well-being is household disposable income per capita, which represents the maximum amount a household can consume without having to reduce its assets or to increase its liabilities.

The above-mentioned factors can create significant differences between measures of household disposable income per capita and GDP per capita. The United States for example see its position relative to the OECD average jump by more than 10 percentage points (46% above the OECD-average of household disposable income) compared to a GDP per capita of 162% of the OECD average. The following graph illustrates these differences for a selection of countries.

![Figure 1. GDP and household adjusted disposable income, per capita](image)

*Data refer to 2013 for household adjusted disposable income for Mexico, New Zealand, and Switzerland.*
income, compared to 34% above the OECD average of GDP per capita), ranking it 1st among OECD countries on household disposable income compared to 3rd on GDP per capita (Figure 1). This reflects in part repatriated (and redistributed) profits from US multinational activities abroad but also relatively lower general government expenditure and taxes on households.

On the other hand, Norway falls from 1st on a GDP basis to 4th on a household disposable income basis while Ireland drops dramatically (from 4th to 19th). For Ireland, one of the reasons relates to the presence of a significant number of foreign affiliates of multinational enterprises (responsible for around half of private sector GDP). While Irish GDP per capita was well above the OECD-average (24% higher), Irish household disposable income was significantly below the OECD-average (22% lower). Similar differences in household disposable income per capita relative to GDP per capita can also be seen in other countries where foreign affiliates play an important role in overall GDP (and that have only limited outward foreign investment) such as Hungary and the Czech Republic. Switzerland also sees falls in its household income vs GDP ranking, partly because of the relatively large number of cross-border workers.

For Norway, however, the divergence reflects other factors, linked to the large surplus generated by the Norwegian mining sector (around 25% of total economy value added), which is invested by the Norwegian government in its sovereign wealth fund3.

![Figure 2. Real GDP and real household disposable income, per capita](image)

**Figure 2. Real GDP and real household disposable income, per capita**

* Average annual growth rates; Adjusted for price changes

Panel 1 : Average annual growth rates 2001 to 2007

Real GDP per capita  
Real household adjusted disposable income per capita

* Average annual growth rates for Chile and Mexico 2003-2007

Panel 2 : Average annual growth rates 2008 to 2014

Real GDP per capita  
Real household adjusted disposable income per capita

* Average annual growth rates for New Zealand and Switzerland 2008-2013
Developments in household disposable income per capita can also differ significantly from developments in GDP per capita.

Many factors can also contribute to diverging patterns of growth between household disposable income and GDP, for instance, declining shares of compensation of employees in value-added, and rising shares of profits retained by corporations. And in real terms, differences in consumer price inflation and changes in the GDP deflator, reflecting in part evolutions in terms of trade, can also contribute to divergences. Differences in tax and redistribution policy can also play a significant role.

Prior to the global financial crisis (2001-2007), real economic growth in many countries outpaced growth in real household disposable income, (Figure 2, panel 1). However, post crisis (2008-2014), around 60% of countries saw real household disposable income grow faster than real GDP, as governments intervened (including through automatic stabilisers) to cushion the negative impact of the crisis on households' income. But countries hit hardest by the crisis saw real household disposable income contract at a faster pace than GDP (Figure 2, panel 2).

The measures explained

**Gross Domestic Product (GDP):** Gross domestic product (GDP) is the standard measure of the value added generated through the production of goods and services in a country during a certain period. Equivalently, it measures the income earned from that production, or the total amount spent on final goods and services (less imports).

**Household adjusted disposable income:** Household adjusted disposable income equals the total income received, after deduction of taxes on income and wealth and social contributions, and includes monetary social benefits (such as unemployment benefits) and in-kind social benefits (such as government provided health and education).

**Purchasing power parities (PPPs):** In their simplest form, PPPs are price relatives that show the ratio of the prices in national currencies of the same good or service in different countries. The Big Mac currency index from The Economist magazine is a well-known example of a one-product PPP. The Big Mac index is "the exchange rate that would mean that hamburgers cost the same in America as abroad". For example, if the price of a hamburger in the UK is £2.29 and in the US, it is $3.54, the PPP for hamburgers between the UK and the US is £2.29 to $3.54 or 0.65 pounds to the dollar.

Where to find the underlying data


Further reading

1. In all graphs and calculations, the following OECD-countries have been excluded, because of lack of data on household disposable income: Iceland, Israel, Luxembourg and Turkey.

2. For convenience, household disposable income refers to household adjusted disposable income, which includes goods and services provided for free or at reduced prices by government and non-profit institutions serving households. It predominantly consists of health and education services and provides a more comparable measure, across countries and over time.

3. Note that this suggests that some care is needed in interpreting the sustainability of household disposable income over the longer term. Contemporaneous comparisons for example look at sustainability in the context of sustainable household finances, i.e. not building up household liabilities or reducing assets. But over the longer term persistently high government deficits or unfunded pension schemes may imply future declines in household disposable income (all other things being equal), while government surpluses may act as a buffer against potential declines (again all other things being equal).
New OECD database on International Transport and Insurance Costs

2 November 2016

Although the costs associated with the international transport and insurance of merchandise trade (also referred to as CIF-FOB margins) are an important determinant of the volume and geography of international trade, remarkably little (official) data exist. Combining the largest and most detailed cross-country sample of official national statistics on explicit CIF-FOB margins to date with estimates from an econometric gravity model, and using a novel approach to pool product codes across World Customs Organization Harmonized System (HS) nomenclature vintages, the OECD has developed a new Database on International Transport and Insurance Costs (ITIC) that aims to fill this gap. The Database shows that distance, natural barriers and infrastructure continue to play an important role in shaping regional (and global) value chains.

International Transport and Insurance Costs can be significant

With an estimated trade-weighted average of 6% for all countries over 1995-2014, the ITIC shows that the costs of transport and insurance are significant, even without taking account of the fact that the international fragmentation of production that characterises global value chains can multiply these costs. Notwithstanding the role of other factors such as relative costs of production, government policy, and just-in-time production methods, geographical distance between trading partners, and the associated transportation costs, help to explain why global value chains still retain strong regional dimensions, as witnessed in 'Factory Asia', and the production hubs in Europe and in NAFTA. The ITIC data show for example that inter-continental trade increases transport and insurance costs by between 2 to 4% as compared to comparable intra-continental trade.

Figure 1 further illustrates this point for imports of electrical machinery and parts thereof (chapter 85 in the 2007 HS classification). It shows that CIF-FOB margins are significantly lower for Chinese imports from Vietnam and Hong Kong than from other Asian countries (reflecting in large part proximity but also the mix of products imported) and from Brazil and South Africa. Similarly, US imports from Mexico and Canada have much lower CIF-FOB margins than those from other trading partners, as do French imports from European partners.

The resulting CIF-FOB margins also highlight how natural geographical barriers, such as the Andes mountain range in Latin America, and poor intra-regional infrastructure, such as in Africa, may impose cost barriers to the development of regional production chains (although again, other factors, including ‘behind-the-border’ constraints such as domestic regulations, will also play a significant role). The data in Figure 1, which show relatively high margins for German imports from Italy (separated by the Alps), further illustrate this.
German imports from Italy have a CIF-FOB margin equal to that of imports from the US for example. Similarly, (cross-Andean) Chilean imports from Brazil, Colombia and Argentina also have relatively high margins; higher indeed than imports from Germany.

**Oil prices matter**

Oil prices (fuel) represent an important component of overall transport costs, and the data (and the model) also confirm the anticipated positive effect of crude oil prices on CIF-FOB margins, as shown in Figure 2. For example, the model shows that globally, a rise in oil prices from 25 to 75 USD per barrel increases the estimated CIF-FOB margin by 1.4 percentage point (all other variables remaining constant). Similarly, a reduction in oil prices from, for example 100 USD per barrel to 50 USD (which is approximately what happened in 2015, when oil prices dropped from 93 to 48 USD per barrel) reduces the CIF-FOB margin by close to 1 percentage point.

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**Figure 2. Impact of an increase in Oil prices from 25 to 75 USD per barrel on CIF-FOB margins**

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**Figure 3. Fragmented production multiplies transportation costs: example**

International fragmentation of production means that product parts and components cross borders many times during the course of (global) production, each time accumulating international transport and insurance costs. Typically, the longer the chain the higher the cumulative costs of transport and insurance. Consider for example an intermediate good of value 100 USD exported from country A to country B, with 6% transport costs (i.e. an import value of 106 USD in country B) that is subsequently processed and exported to Country C for 156 USD (with an additional 4% of transportation costs), where the product is finalised and exported to country D for 237 USD (with an 8% transportation cost). The import price in country D will be 256 USD, consisting of a cumulative total of 31 USD in transport and insurance costs (or 12% of the final product value), as illustrated in Figure 3.

<table>
<thead>
<tr>
<th>Country A</th>
<th>Country B</th>
<th>Country C</th>
<th>Country D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary production</td>
<td>Intermediate production</td>
<td>Final production</td>
<td>Final Consumption</td>
</tr>
<tr>
<td>100 USD</td>
<td>+50 USD</td>
<td>+75 USD</td>
<td>256 USD</td>
</tr>
<tr>
<td>Imports CIF</td>
<td>Value Added</td>
<td>Exports FOB</td>
<td>ITIC</td>
</tr>
<tr>
<td>Country A</td>
<td>-</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Country B</td>
<td>106</td>
<td>50</td>
<td>156</td>
</tr>
<tr>
<td>Country C</td>
<td>162</td>
<td>75</td>
<td>237</td>
</tr>
<tr>
<td>Country D</td>
<td>256</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The measure explained

In the absence of detailed data on transport and insurance costs for international merchandise trade, existing research has necessarily used analytical approaches to produce estimates. Typically, either information from one or a few countries is generalised to cover all global merchandise trade flows, or bilateral mirror data from UN’s COMTRADE database of bilateral merchandise trade statistics by product is used.

The new OECD ITIC database partly follows in these footsteps. However, one of the main improvements is that the underlying model is based on the largest and most detailed cross-country sample of official national statistics on explicit CIF-FOB margins to date; covering 16 countries (reflecting nearly 20% of global imports) that currently publish or have published detailed bilateral product-level information on CIF-FOB margins. The gravity-type model that was developed takes into account the effects of distance, geographical situation (contiguous partners, partners on the same continent), infrastructure quality, oil prices, product unit values and time. A variety of robustness tests were conducted to test (and confirm) the validity of the results.

Data sources

The OECD ITIC database is available on OECD.Stat at http://stats.oecd.org/Index.aspx, as part of the wider set of information on International Trade and Balance of Payments Statistics. The database contains bilateral international trade and insurance costs for more than 180 countries and over 1000 individual products, covering the period 1995–2014, and provides a powerful new tool to further our understanding of global value chains. The new OECD ITIC dataset also has an important direct application in the context of the OECD-WTO Trade in Value Added (TiVA) initiative.

Useful links

Few economic indicators make the newspapers’ front pages. One that often does though is house prices. This is because, as witnessed during the financial crisis, movements in house prices can have a direct impact on households’ wealth and economic growth. At the same time, fluctuations in economic activity can also drive trends in house prices. House price indicators are therefore among the indicators that are closely monitored by policymakers.

However, despite their importance, until recently, largely reflecting a variety of conceptual and measurement differences across countries, no harmonised internationally comparable measure of house prices existed. In 2013, a new statistical handbook on house price indices was endorsed by several international organisations, and since then the OECD has been working with countries to develop a new internationally comparable database on house prices.

The new data confirm the positive association between house prices and economic activity but they also reveal significant differences in the strength of the link across countries, especially in the wake of the recent financial crisis.

There is a positive correlation between fluctuations in house prices and in economic activity...

As Figure 1 shows, fluctuations in real house prices (i.e. adjusted for general inflation) and economic activity in the OECD are positively related (with a correlation coefficient of around 0.6 over the period 1971 to 2015). This relationship reflects three drivers, that may differ in intensity and over time: a leading component, as the wealth effects from increases in real estate prices can boost final consumption of home owners, through re-mortgaging for example; a lagging component, as stronger economic growth may boost house prices; and a co-incident component as both house prices and economic activity may be explained by the same underlying factors, such as credit market conditions and population growth.

![Figure 1. Evolution of real house prices and GDP growth in the OECD area](image-url)
...but the relationship may have weakened over time...

Understanding the dynamic contribution these drivers make over time is clearly of interest, especially as they provide insights on the potential build-up of vulnerabilities stemming from strong household spending growth driven by rising leverage and inflated asset prices.

The latest edition of the OECD’s Economic Outlook provides evidence of a post-crisis weakening of the relationship between house price growth and the propensity to consume, in part reflecting the changes in financial regulations and credit standards introduced after the crisis which have reduced the ability of households to use rising housing values as collateral for additional borrowing to fund current spending.

...and it differs across countries.

A number of factors influence house price movements, including real household incomes, real interest rates, mortgage market regulations and supervision, lending patterns (at fixed rate versus variable rates), tax relief on mortgage debt financing, and transaction costs such as stamp duty. Therefore, differences in institutional arrangements combined with differences in economic activity may explain heterogeneity in housing markets across countries.

The internationally comparable house price indices from the OECD database show that the relationship between house prices and economic activity is indeed stronger in some countries than others. For example, in countries like Finland, Ireland, Japan and the United Kingdom, fluctuations in house prices and economic activity are closely related, with a correlation coefficient of around 0.7 from 1971 to 2015, whereas it is much weaker in countries like France, Italy and Norway, with a correlation coefficient lower than 0.3 over the same period.

![Figure 2. Real house price indices in selected OECD countries](image)

Note: House price indices for individual countries are sourced from the OECD RPPI – Headline indicators dataset and deflated by the Consumer Price Indices (CPIs) for all items. The real house price index for the OECD area is sourced from the OECD Analytical house price indicators dataset.
Similarly, while house prices dropped in many countries at the time of the crisis, factors that affect house price developments differ markedly across countries. Figure 2 shows how real house price developments have diverged significantly across countries since 2005. Notwithstanding some differences within each group, four broad groups of OECD countries can be distinguished:

- An initial fall in real house prices followed by a subsequent rebound in New Zealand, the United Kingdom and the United States.
- A continuous increase in real house prices pre and post crisis in Australia, Mexico and Sweden.
- A severe and prolonged fall in house prices post the crisis with only recent signs of stabilisation in Greece and Spain.
- Relatively stable house prices since 2005 in Belgium and Korea.

In respect of the above, it should also be noted that there may be significant differences across local housing markets within countries. Unfortunately internationally comparable data at sub-national level are typically not available.

The measure explained

House price indices, also called Residential Property Prices Indices (RPPIs), are index numbers measuring the rate at which the prices of all residential properties (flats, detached houses, terraced houses, etc.) purchased by households are changing over time. Both new and existing dwellings are covered if available, independently of their final use and their previous owners. Only market prices are considered. They include the price of the land on which residential buildings are located.

Where to find the underlying data

The OECD database on house prices is available on OECD.STAT OECD.Stat at http://stats.oecd.org/Index.asp and includes the three following datasets:

- Residential Property Price Indices – Headline Indicators: this dataset covers OECD members and some non-member countries. For each country, the RPPI that is available at the most aggregate level has been singled out in this dataset, but due to data availability, headline indicators are country specific. For example, the RPPI at the most aggregate level for the United States only covers single-family dwellings and not all types of dwellings as is the case for most other OECD countries.
- Residential Property Price Indices – Complete database: This dataset contains nominal house price indices with various breakdowns for OECD members and some non-member countries. Headline indicators are a subset of this complete dataset.
- Analytical house price indicators: This dataset contains, in addition to nominal RPPIs, information on real house prices, rental prices and the ratios of nominal prices to rents and to disposable household income per capita. It should be noted that for Brazil, Canada, China, Germany, the United States and the Euro area, the datasets "Analytical house price indicators" and "Residential Property Price Indices (RPPIs) – Headline Indicators" do not refer to the same nominal price indices. These differences are further documented in country-specific metadata that are attached to this dataset.
- In the future, the OECD database on house prices will include other housing-related indicators in order to provide a more comprehensive picture of real-estate markets.

Useful links

The rapid increase in global value chains (GVCs) in the last two decades, in response to falling communication costs and reductions in trade barriers, has in large part been fuelled by large and multinational enterprises. But across the OECD, 99.8% of enterprises are classified as SMEs, very few of which engage in international trade. Yet collectively, SMEs are responsible for two-thirds of employment and over half of economic activity in the OECD. This has raised policy concerns about the inclusive nature of globalisation and more specifically whether SMEs, and their employees, are less able to benefit from GVCs. While it is clear that SMEs face particular and more significant challenges to exporting compared to larger firms (see for example the OECD Statistical Insights Who’s Who in International Trade) it is also true that direct export channels are not the only mechanism available to SMEs for integration into GVCs. A new report by the OECD, Nordic Countries in Global Value Chains, developed in collaboration with national statistical offices in the Nordic countries, shows that SMEs play an important role in GVCs as suppliers of larger exporting enterprises. In particular, it highlights that in the Nordics, more than half of the domestic value added of exports originates in SMEs.

In the Nordic countries, indirect exports through GVCs by Independent SMEs are around twice as important as their direct exports...

A significant share of total value-added (and hence employment) generated by SMEs is dependent on foreign markets, with the contribution of exports provided via indirect channels rising the smaller the firm. For example, while only 5% of value added generated by independent micro SMEs (SMEs with less than 10 employees) in Sweden is exported directly, an additional 24% of their value added is generated through value chains of downstream exporters, highlighting the significant dependencies of these firms on foreign markets. Figure 1 further illustrates this by separating dependent SMEs (firms with fewer than 250 employees which are part of a larger enterprise group) from independent SMEs (similar firms that do not have such ties). It shows that for the latter category, indirect exports are more than twice as important as direct exports.

Figure 1. Share of domestically produced value added that is exported

....reflecting the important channels provided by larger firms and MNEs...

Larger enterprises provide important channels for SMEs to access foreign markets and benefit from international growth, in particular in emerging economies where barriers to direct exports may be onerous for SMEs. Figure 2 illustrates that 28% of all SME’s exports are channelled through larger firms, with a significant share reflecting MNEs (both foreign and domestically owned).
In turn, a quarter of every dollar of GDP created by exports of large firms reflects the value of goods and services provided by upstream SMEs (Figure 3), thus highlighting the important role larger firms can play in generating upstream spillovers in the form of income and employment. Indeed, in the Nordic countries, on average, each unit of value added by large exporting firms generates an additional 0.66 units of value-added in upstream (large and small) suppliers. This partly reflects the stronger focus of large firms on their core business functions. In this respect, it is also useful to mention that larger firms also typically include a larger share of imports in their exports: in other words, a higher import content of exports can go hand in hand with strong domestic supply chains.

Upstream spillovers generated by larger firms are especially important for SME services providers. As Figure 4 illustrates, around 20% of the domestic value added exported by large manufacturing firms consists of services provided by upstream SMEs. Overall, services account for over 40% of the gross exports of the main manufacturing industries. This shows the importance of e.g. efficient logistic services providers, and specialised business services such as accounting and legal services, for manufacturing exports.
Policy relevance

The findings in the report Nordic Countries in Global Value Chains summarised above highlight the importance of policy measures (e.g. improved access to finance, skills and technology transfers that recognise the upstream role of SMEs in driving competitiveness of downstream exporters, as well as their ability to disperse the benefits of trade more widely), as complements to more 'traditional' measures that focus on direct exporters, such as removing red tape, special (export) financing schemes, and facilitating match-making with business partners abroad.

The measure explained

The indicators on the role of SMEs in GVCs have been developed via a unique and innovative collaboration between the OECD and the Statistical Offices in Denmark, Finland, Norway and Sweden. This cooperation allowed for the linking and integration of detailed and harmonised micro data into the Inter-Country Input-Output (ICIO) table that underpins the OECD-WTO Trade in Value Added (TiVA) indicators. Building upon standardised national linked micro datasets in all four countries, a shared SAS program ensured that identical calculations were performed in all countries without the microdata having to leave National Statistical Offices. The full report includes a detailed methodological annex that describes how data were combined and indicators derived.

The domestic value added in exports reflects the value of exports that is domestically produced (i.e. not imported), either by the exporting firm itself, or by its upstream suppliers (i.e. value that is indirectly exported).

Useful links


More information on Trade in Value Added (TiVA), the indicators and the ICIO table can be found at http://oe.cd/tiva.
While differences in average longevity, or life expectancy, between countries are well-documented, inequalities in longevity within countries are less well-understood and are not fully comparable beyond a handful of European countries. A recent OECD working paper (Murtin et al., 2017) fills this gap by analysing inequalities in longevity by education and gender in 23 OECD countries in 2011.

Measures of inequalities in longevity show that, on average, the gap in life expectancy between high and low-educated people is equal to 8 years for men and 5 years for women at the age of 25 years; and 3.5 years for men and 2.5 years for women at the age of 65. Cardio-vascular diseases, the primary cause of death for the over 65s, are the primary cause of mortality inequality between the high and low-education elderly.

Key findings

Figure 1 shows the longevity gaps between high and low-educated people at the age of 25 and 65. At age 25, life expectancy is 48.9 years for men with low education, 52.6 years for those with medium education and 56.6 years for those with high education. The corresponding figures for women are 55.5 years, 58.3 years and 60.1 years respectively.

Note: countries without an asterisk correspond to OECD data and calculations; *denotes OECD calculations based on Eurostat data.
Longevity gaps differ markedly across countries. High-educated 25 year-old men for example can expect to live more than 11 years longer than their low-educated counterparts in Latvia, Poland, the Czech Republic and Hungary, while the gap is less than 5 years in Portugal, Turkey, Italy, New Zealand and Mexico. In the case of women, inequalities in life expectancy are relatively small in Austria, Israel, Portugal and Italy, but amount to over 6 years in Latvia, Poland, Belgium and Chile.

Large inequalities in longevity by education persist even at older ages. At 65 years, life expectancy for men, on average in the OECD, is 15.8 years for those with low education, 17.1 for those with medium education and 19.2 years for those with high education. The corresponding figures for women are 19.6, 20.8 and 21.9 years. In relative terms, i.e. expressed as a share of the remaining lifespan, gaps in longevity are larger at 65 than at 25.

While differences in average life span (i.e. longevity or life expectancy) between groups of education and gender are large, this masks wider differences in life span within groups when other factors, such as genetics and exposure to risk factors are taken into account. Indeed, combined, education and gender, only account for around 10% of the total variation in lifespan.

Breaking down mortality rates (measured as the probability of death in a given year) of people aged between 65 and 89 years by causes of death (circulatory causes such as heart failure, neoplasms or cancer, external causes such as accidents, and other causes) reveals that circulatory problems are the leading cause of death for both gender and education groups (Figure 2). Indeed they account for about 40% of total mortality, with neoplasms and other causes of death accounting for between 25% and 30%. Circulatory problems are slightly more prevalent among the low-educated, for both men and women.

Focusing on low-educated older men, circulatory problems are the most frequent cause of death in high-mortality countries such as Latvia, the Czech Republic, Poland and Hungary, where they account for around half of all deaths, as compared to around one third of deaths in Canada (28%), the United Kingdom (30%), Norway (37%) and Turkey (31%). Conversely, other causes of death are relatively more prevalent in low-mortality countries.

Circulatory problems are also the main factor explaining the mortality gap between education groups at older age. For elderly people, circulatory diseases contribute to 41% of the difference in mortality rates between low and high-educated men and 49% between low and high educated women.

Addressing the risk factors underlying circulatory diseases, in particular smoking, seems as an efficient way of reducing both average mortality rates and inequalities in longevity across education groups. According to Mackenbach (2016), smoking accounts for up to half of the observed inequalities in mortality rates in some European countries; also, while its contribution to inequalities in longevity has decreased in most countries for men, it has increased among women.

The measure explained

Longevity is statistically defined as the average number of years remaining at a given age. It is calculated as the mean length of life of a hypothetical cohort assumed to be exposed since starting age until death of all
their members to the mortality rates observed at a given year. Mortality rate is a measure of the number of deaths in a particular population, scaled to the size of that population, per unit of time.

Estimates of life expectancy by education are drawn from data compiled in different ways in different countries. Two main approaches (study design) can be distinguished:

A “cross-sectional” (unlinked) design implies that information on the socio-economic characteristic of the deceased is drawn directly from death certificates, as reported by relatives or public officials, while population numbers for the same population categories (the denominator of mortality rates) are drawn from the most recent population censuses. An obvious drawback of this “unlinked” design, which is still used by most countries reviewed in the accompanying OECD working paper, is that it can only be implemented when death certificates include information on the occupation and education of the deceased. In addition, even when this information is included in death certificates, it may be affected by (large) recording errors;

A “linked design” implies that socio-economic information on the deceased is retrieved by individual data linkage to the most recent population census or administrative register records. While both types of data are used in this study the “linked approach” is generally associated with higher quality data. Beyond these differences, a number of data treatments are implemented to correct for statistical biases and anomalies that may arise when calculating mortality rates based on a small number of deceased with specific age, gender and education characteristics.

The measure of inequalities in longevity described above have two specific features that may affect cross-country comparisons: first, life expectancy is disproportionately affected by mortality rates at very young ages compared to mortality rates at older ages; second, measures of life expectancy by education are also affected by the fact that distributions of education vary across countries and time. Alternative measures of inequalities in longevity have been examined, and they all show very large correlations across countries. In other terms, accounting for differences in the size of the various educational groups or using average mortality rates rather than life expectancy measures, does not change the assessment of countries’ rankings significantly. There are also significant cross-country differences between these measures of inequality in longevity and more traditional measures of inequality in, for example, income: longevity inequality are lowest in Italy, where income inequality is relatively high, and highest in many Eastern European countries, where income inequality is relatively low.

Where to find the underlying data

The underlying data can be found online at the following address: www.oecd.org/std/Inequalities-in-longevity-by-education-in-OECD-countries.xlsx

Useful links

