

Statistics Brief

► Infrastructure Investment

Investment in Inland Transport Infrastructure at Record Low

The latest update of annual transport infrastructure investment and maintenance data collected by the International Transport Forum at the OECD shows that continued economic crisis has had an impact on transport infrastructure investment:

- Investment in inland transport infrastructure, as a share of GDP, has declined from a peak in 2009 to a record low (0.8%) in the OECD while the volume of investment has fallen back to 1995 levels.
- Investment levels in Central and Eastern European countries have nearly halved since 2009 in real terms, accounting for 1% of GDP in 2013 (compared with 1.9% in 2009).
- Western European and North American economies invest increasingly in rail while in Central and Eastern European countries the focus continues to be on roads.

Our most recent data on investment show that gross fixed capital formation (investment) in inland transport infrastructure as a percentage of Gross Domestic Product (GDP) has declined to below 0.8% for the OECD, the lowest figure over the period since 1995 for which we report data (Figure 1). Part of the decline can be contributed to Japan (its economy being large enough to affect the overall average), which followed a different trajectory from the rest of the OECD before 2007. Japan's expenditures were affected by general budget cuts towards the end of the 1990's. Subsequently, modification of the allocation of revenues from gasoline tax, earlier earmarked for highway development and maintenance, reduced the level of investment in roads in Japan.

► GDP share of investment record low in 2013

However, the most recent data suggest that the continued economic crisis has resulted in a broader decline in transport infrastructure spending, measured in real terms, across many OECD countries. This declining trend was temporarily reversed in 2009 by stimulus spending. The volume of investment (expenditure in real terms) in the OECD as a whole grew 16% from 1995 to 2002 after which it remained relatively stable until 2009. The impact of stimulus spending is visible in 2009 but the recent data show volume falling back to 1995 levels (Figure 3).

► Volume of investment falls back at 1995 levels in the OECD

In Western Europe, the investment share of GDP declined steadily from 1.5% in 1975 to 1.2% in 1980 and to 0.9% by 1995 after which it levelled off. Our latest data show that the GDP share of investment in inland transport infrastructure has been falling again since 2009 dropping to 0.7% of GDP in 2013. There are differences between countries, several showing constant above average investment shares; Switzerland (1.4%), France (1.1%), Norway, Denmark and Finland (0.9%). In contrast, whilst Italy, Ireland and Portugal all invested around 1.0% of GDP on inland transport infrastructure prior 2008, their investment shares were only 0.2% – 0.4% in 2013. In Western European countries, the volume of investment started growing in 2002, and was 31% above the 1995 level in 2006 after which it started declining slowly. The latest data for 2013 show volume only 8% higher than the 1995 level (Figures 2 and 4).

► **Impact of austerity policies seen in some countries**

In North America, GDP share of investment has remained around 0.6% over the period (Figure 2). The volume of inland infrastructure investment in North America grew by around 30% from 1995 to 2002. Our latest data suggests a slow decline in investment volume continuing all the way to 2013, although temporarily reversed by stimulus spending in 2009 and 2010 (Figures 2 and 4).

Trends for developing and transition economies differ markedly from those in developed economies. The share of investment in inland transport infrastructure in Central and Eastern European countries (CEECs), which until 2002 had remained at around 1.0% of GDP, grew sharply to 2009, reaching 2.0% (Figure 2). According to our most recent data, investment levels have nearly halved since 2009 in real terms, accounting for only around 1.0% of GDP in 2013. This is due particularly to the fall in investment levels in the Czech Republic and Poland (investment share falling from above 2.0% to 0.6% and 0.7% respectively). The volume of infrastructure investment accelerated strongly in developing and transition economies, notably in Central and Eastern European countries after 2002. In 2009, investment in inland transport infrastructure was 290% above the 1995 level in real terms. This growth has turned negative in recent years, volume nearly halving by 2013 (Figures 2 and 4).

► **Investment levels in Central and Eastern Europe halved since 2009**

In the Russian Federation, the investment share of GDP has been high compared with Western European and North American countries but volatile throughout the period. Our data for India since 2005 shows that the volume of investment in road and rail infrastructure has doubled over the period. However, due to faster growth in GDP than in investment, the GDP share of investment has declined from 1% in 2006 to 0.8% in 2013.

► **Investment volume doubled in India since 2005**

The share of rail investment has increased from 17% to 26% for the OECD total from 1995 to 2013, according to our estimate. This trend is mainly determined by developments in Japan, North America and Europe where volume of rail investment has grown faster than spending on roads. Data presented in Figure 5 show long-run trends in the modal share of investment in inland transport infrastructure in Western European and Central and Eastern European countries. In the Western European countries, the share of investment in rail infrastructure has increased steadily from around 30% in 1995 to 40% in 2013. The trend observed in our data for Western Europe is partly a reflection of political commitment to development of railways and the recent data does not seem to indicate any change in policy.

► **Mature economies invest increasingly in rail**

Central and Eastern European countries are investing more heavily in roads. The share of roads in inland transport infrastructure investment increased from 66% in 1995 to 84% in 2005 in this region. The last few years, however, suggest a stabilisation and a possible change of the trend as the modal split of investment remained at around 2005 level until 2011, after which it declined slightly to account for 76% of total inland transport infrastructure investment in 2013 (Figure 5).

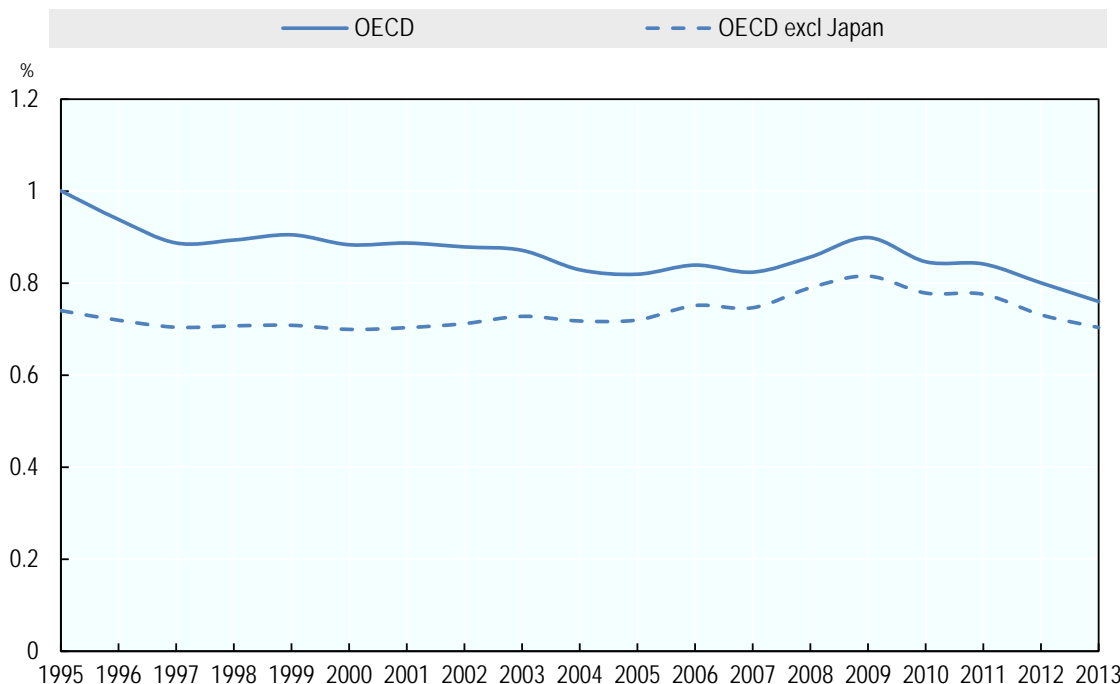
► **Transition economies investing in roads**

Observers in many countries have raised concerns about under-funding of road assets. Road maintenance is often postponed on the expectation that it will be made up in the future and there is no risk of immediate asset failure. The available data seems to suggest that while there are quite significant cyclical variations, the balance between road maintenance and investment has been relatively constant over time in many regions. We estimate the share of maintenance in total road expenditure to be between 25% and 40% in Western European, North American and Central and Eastern European countries. However, there are significant differences between regions as illustrated in Figure 6. Lack of data on the condition of road assets makes it difficult to verify possible underfunding of road assets.

► Possible underfunding of road maintenance difficult to verify

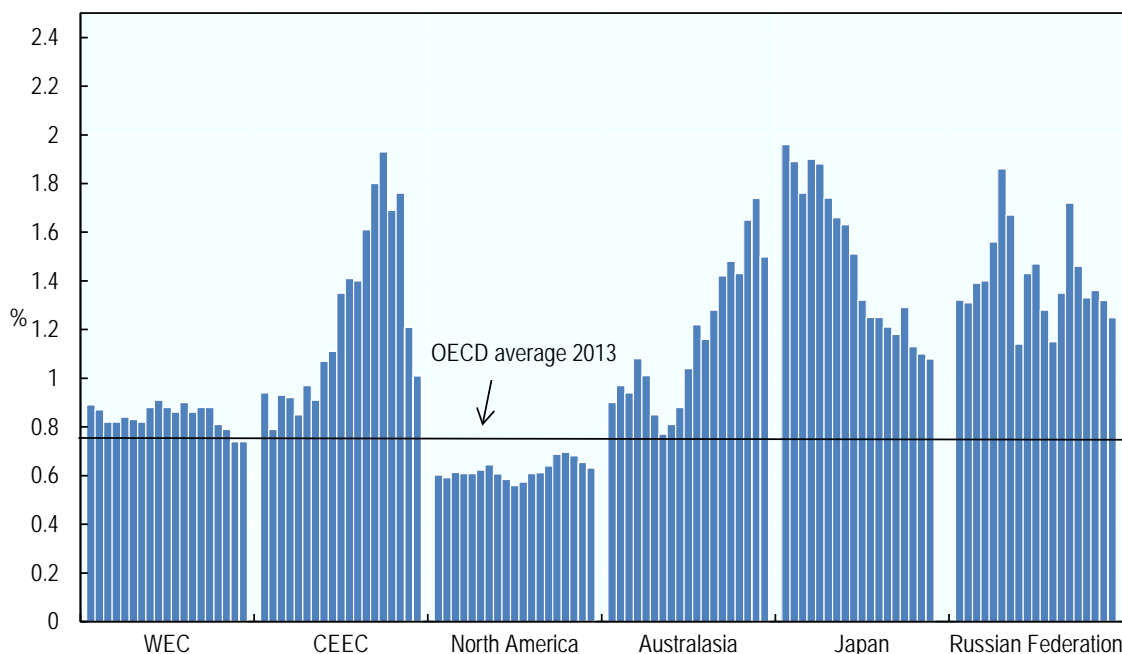
The investment needs for transport infrastructure depend on a number of factors, such as the quality and age of the existing infrastructure, geography of the country (including exposure to geological and meteorological risks) and transport-intensity of the country's productive sector. The fact that the share of GDP dedicated to transport infrastructure has tended to remain constant (and decline more recently) in many countries suggests investment levels are affected also by factors other than real investment needs, such as institutional budget allocation procedures or budgetary constraints. The impact of government policy can also be identified, as for example Australia and Canada where the share of inland infrastructure investment in GDP has remained relatively high, above 1.0%, partly as a result of long-term political commitment for transport infrastructure spending.

Figure 1. **Investment in inland transport infrastructure in the OECD 1995-2013**
(as a percentage of GDP, at current prices)



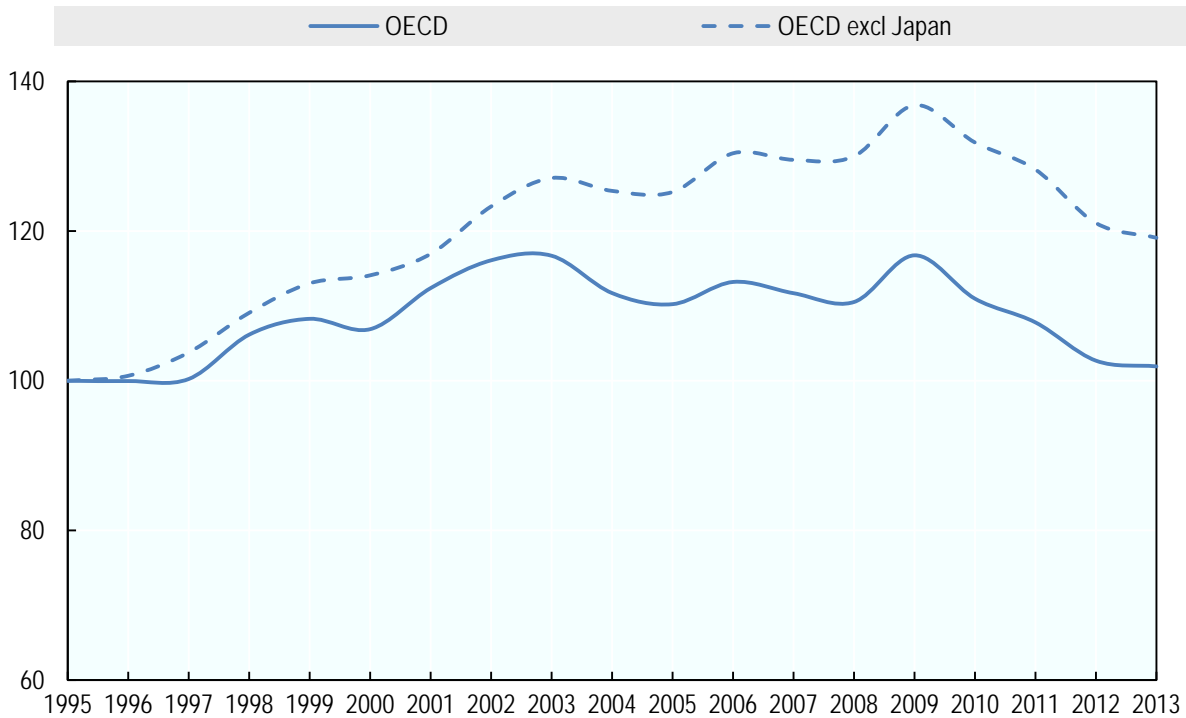
Source: International Transport Forum at the OECD estimate. Note: OECD includes 30 countries (excludes non-ITF states Chile and Israel. See methodological note for details of data and coverage.)

Figure 2. **Investment in inland transport infrastructure by region 1995-2013**
(as a percentage of GDP, at current prices)



Source: International Transport Forum at the OECD. Note: WEC includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and the United Kingdom. CEEC includes Albania, Bulgaria, Croatia, Czech Republic, Estonia, FYROM, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia. North America includes Canada, Mexico and the United States. Australasia includes Australia and New Zealand.

**Figure 3. Volume of investment in inland transport infrastructure
1995-2013**
(at constant 2005 prices, 1995=100)



**Figure 4. Volume of investment in inland transport infrastructure by region
1995-2013**
(at constant 2005 prices, 1995=100)

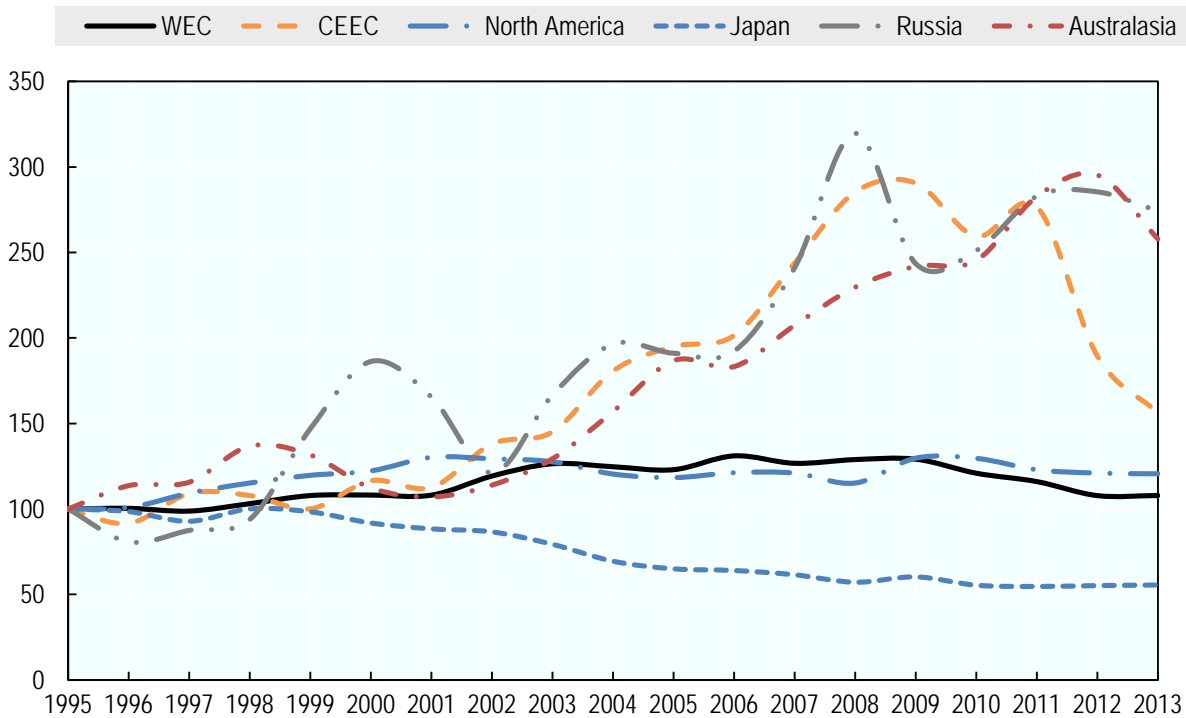


Figure 5. Distribution of infrastructure investment between modes
(Euros, current prices, current exchange rates)

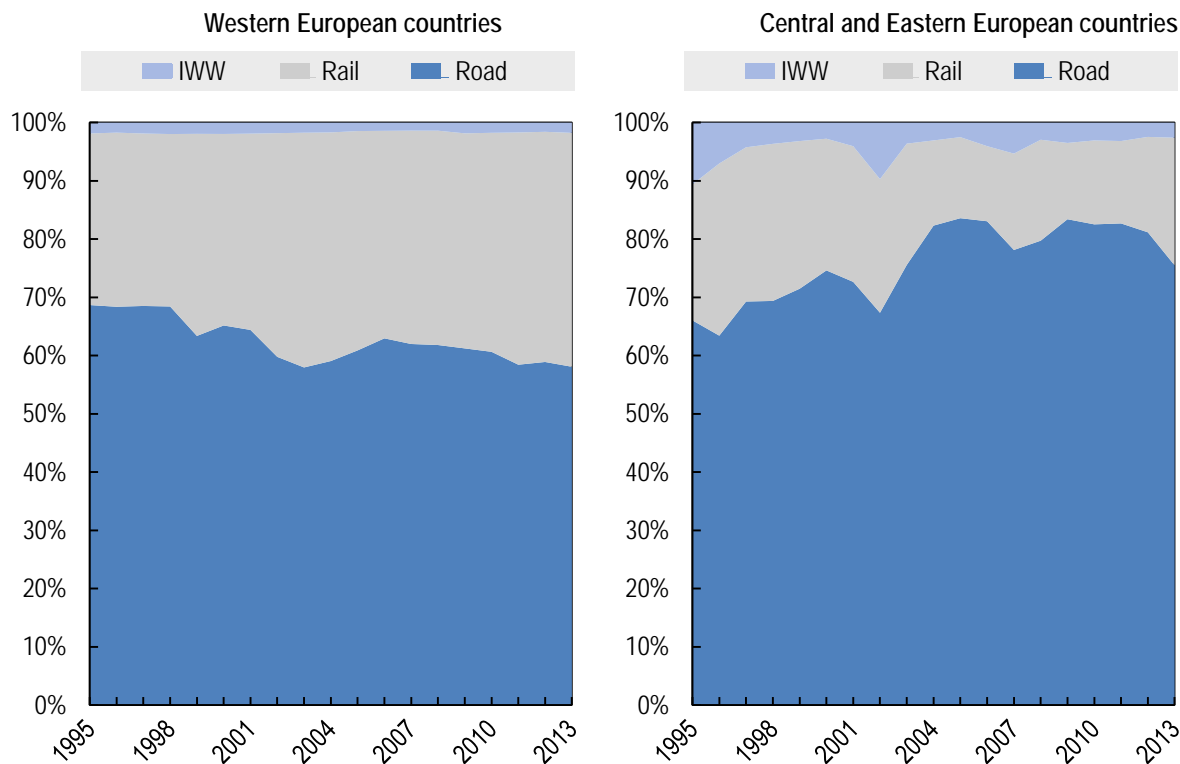
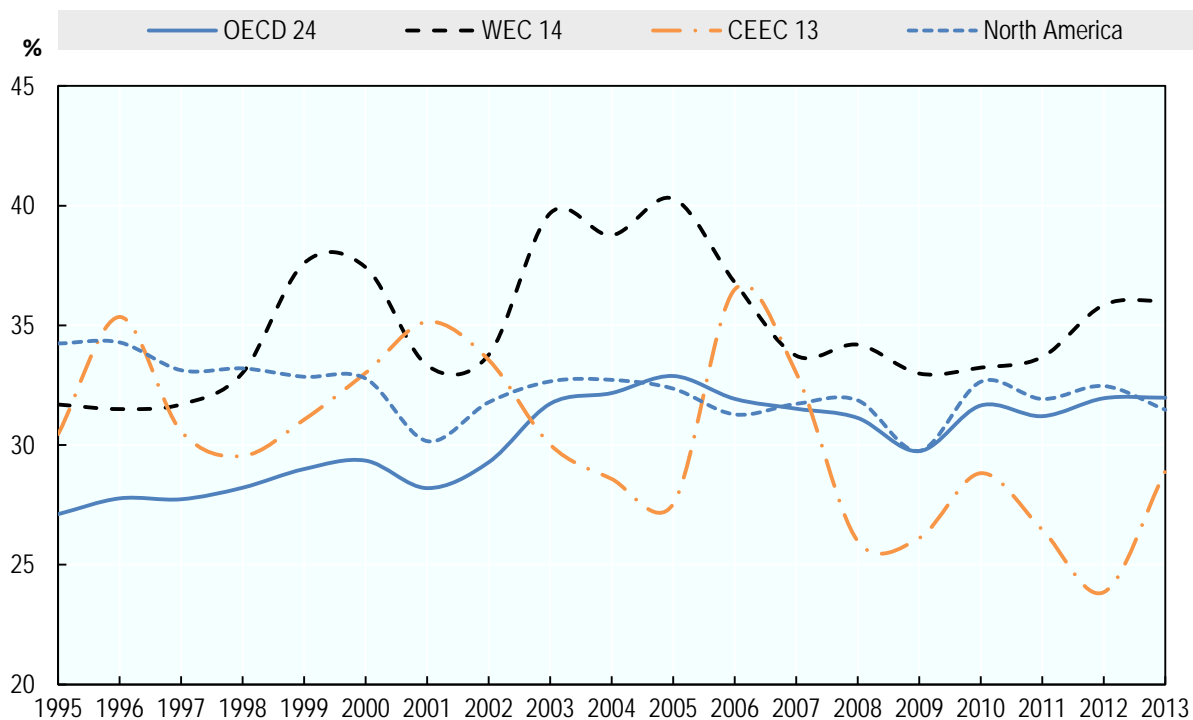


Figure 6. Road maintenance share of total road expenditure 1995-2013
(at current prices)



Note: OECD 24 excludes Austria, Belgium, Germany, Spain, Greece, Korea, Netherlands, New Zealand, Chile and Israel. WEC 14 includes Austria, Denmark, Finland, France, Iceland, Ireland, Italy, Luxembourg, Malta, Norway, Portugal, Sweden, Switzerland and the United Kingdom. CEEC 13 includes Albania, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia.

About the statistics

The International Transport Forum statistics on investment and maintenance expenditure on transport infrastructure for 1995-2013 are based on a survey sent to 54 member countries (at the time of the data collection). The survey covers total gross investment (defined as new construction, extensions, reconstruction, renewal and major repair) in road, rail, inland waterways, maritime ports and airports, including all sources of financing. It also covers maintenance expenditures financed by public administrations.

The Secretariat has collected and published data on this topic since the late 1970s. The latest survey covers the years 1995-2013. Member countries supply data in current prices. In order to draw up a summary of aggregate trends for selected countries, data has been calculated in Euro values at both constant (2005) and current prices. In order to ensure comparability, the Secretariat has devoted a significant amount of effort in collecting relevant price indices in order to make calculations at constant prices. Where available, a cost index for construction on land and water is used. Where these indices are not available, a manufacturing cost index or a GDP deflator is used.

Despite the relatively long time series, these data are often dogged by problems of definition and coverage, which make international comparisons difficult. Also there exists no purchasing power parity corrected general index for transport infrastructure investment. Finally, indicators such as the share of GDP needed for investment in transport infrastructure depend on a number of factors, such as the quality and age of existing infrastructure, maturity of the transport system, geography of the country and transport-intensity of its productive sector. We therefore advise caution when making comparisons of investment data between countries.

Aggregates

OECD: Excludes non-ITF state Israel (at the time of data collection) and Chile.

WECs: Include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CEECs: Include Albania, Bulgaria, Croatia, Czech Republic, Estonia, FYROM, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia.

North America: Canada, Mexico and the United States.

Australasia: Australia and New Zealand.

Estimations for missing data

The following data on road or rail investment are estimated using secondary sources: Belgium 2010-2013, Denmark 2013, Estonia 2012-2013, Greece 2013, Iceland 2013, Italy, 2013, Japan, Netherlands, Norway and Switzerland. Japan data does not include private investments. New Zealand data excludes rail.

This summary covers only aggregate trends in inland transport infrastructure (road, rail, inland waterways). Detailed country data on other items (maritime ports and airports) together with more detailed data descriptions and a note on the methodology are available at:

<http://www.internationaltransportforum.org/statistics/investment/invindex.html>

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