CENTRAL BANK OF CYPRUS
EUROSYSTEM

FOREIGN DIRECT INVESTMENT

2012

1. INTRODUCTION

This report provides an overview of the main developments in foreign direct investment (FDI) statistics[1] for 2012, as published by the Statistics Department of the Central Bank of Cyprus. The analysis concentrates on the main regions and economic activities related to investments by non-residents in Cyprus and investments by residents abroad. The main conclusions of the analysis are the following:

- FDI stock positions abroad associated with the "financial and insurance activities" sector declined considerably.

- With regard to investments placed by non-residents in Cyprus, these are mainly directed to three sectors: "financial and insurance activities", "real estate activities" and "professional, scientific and technical activities".

- The Netherlands and the UK are the main FDI destinations for residents. With regard to investments in Cyprus, most of the investors originate from Greece and the UK.

- A negative stock position for investments abroad was recorded in the case of Greece, due to the accumulated losses realised by the investments

in the Greek banking sector.

2. FOREIGN DIRECT INVESTMENT STOCKS

Cyprus's FDI stocks are mainly associated with positions in Europe as shown in **Chart 1.** The total stock of investments placed by residents in Europe (assets), decreased from €8.280 million in 2011 to €4.705 million in 2012. In contrast, investments placed in Cyprus by European non-residents (liabilities) increased from €9.830 million in 2011 to €10.269 million in 2012.

Chart 1 FDI stocks by continent in 2012 (€ million)

Source: Central Bank of Cyprus. C: cannot be reported due to confidentiality restrictions

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[1] For more information concerning the definition and scope of foreign direct investment statistics please refer to the **Appendix**.
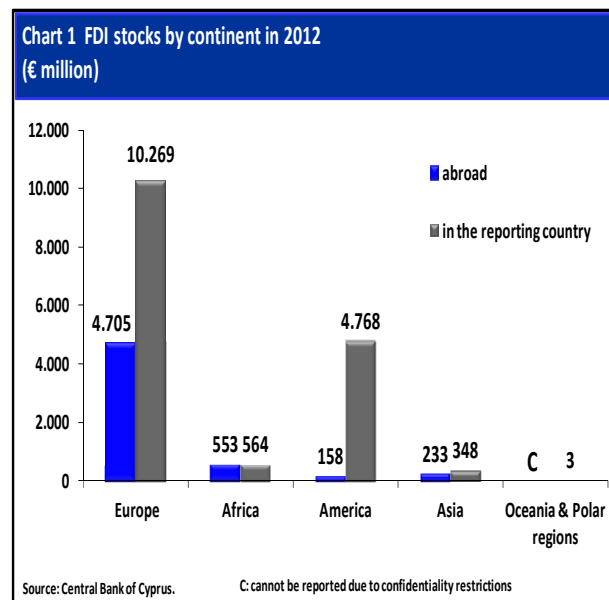
Inward investments from America are significant and reached €4.768 million at the end of 2012. Inward and outward investments from the other continents did not exceed the €1 billion benchmark set for the purposes of analysis during the period under review.

Chart 2 FDI stocks by economic activity in 2012 (€ million)
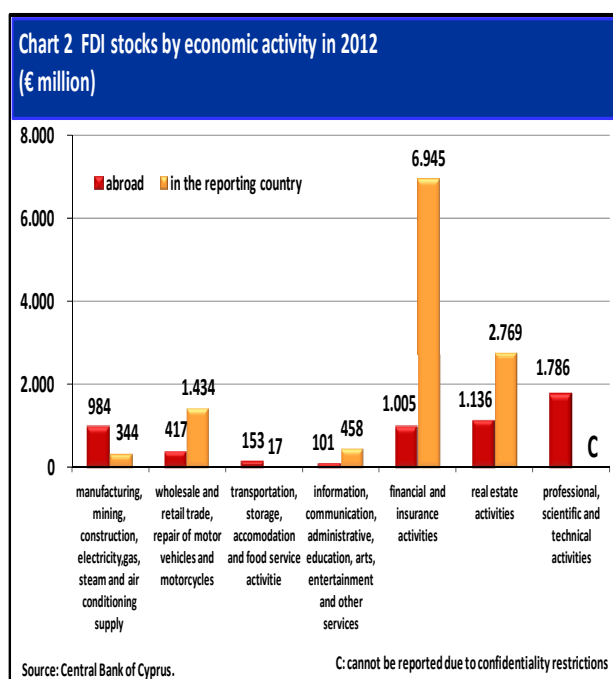
The FDI stock[2] positions in 2012 by main economic activity are shown in **Chart 2**. Resident investors decreased their stock positions abroad associated with the "financial and insurance activities" sector (from €5.232 million in 2011 to €1.005 million in 2012). Concerning the other economic activities, only investments in the "professional, scientific and technical activities" and "real estate activities"

sectors remained above the €1 billion benchmark set.

The economic activities with significant FDI in Cyprus in 2012 are "financial and insurance activities" (€6.945 million or 43,5% of total inward FDI) and the "real estate activities" (€2.769 million or 17,4% of total inward FDI). The "professional, scientific and technical activities" sector continued to be important in 2012.
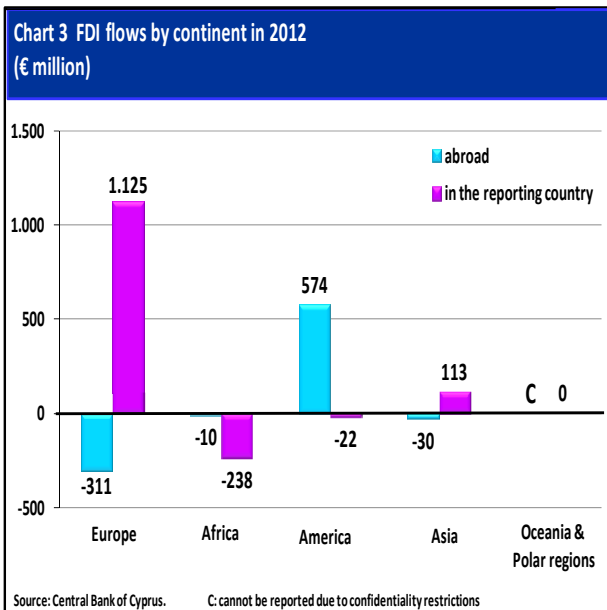
3. FOREIGN DIRECT INVESTMENT FLOWS

This section examines FDI flows[3] using the same geographical and economic activity decompositions presented in the previous section. In **Chart 3,** FDI flows are decomposed by continent. Inward investment flows from Europe increased by €1.125 million in 2012, in line with the increase in stocks illustrated in **Chart 1**. There was also an increase in investment flows from Asia, albeit small (€113 million).

Investments by residents abroad have increased in the case of Europe, Africa and Asia, by €311 million, €10 million and €30 million, respectively. In the case of investments placed by residents in America, there was a reduction by €574 million, which partly explains the reduction in stocks recorded in 2012.

In **Chart 4**, FDI flows are classified by main economic activity. Both FDI flows abroad and in Cyprus (the reporting country) differ considerably by activity sector.

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[2] The analysis of FDI positions abroad is reported according to the economic activity of the non- resident enterprise while the analysis for FDI positions in the reporting economy is reported according to the economic activity of the resident enterprise. In the case of flows (**Section 3**) both investments abroad and in the reporting economy are classified according to the economic activity of the resident party.

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[3] The sign preceding each amount is of particular importance in understanding the changes in each category and the reader is, therefore, required to refer to the **Appendix** for more detailed explanations regarding the possible sign outcomes of FDI flows.
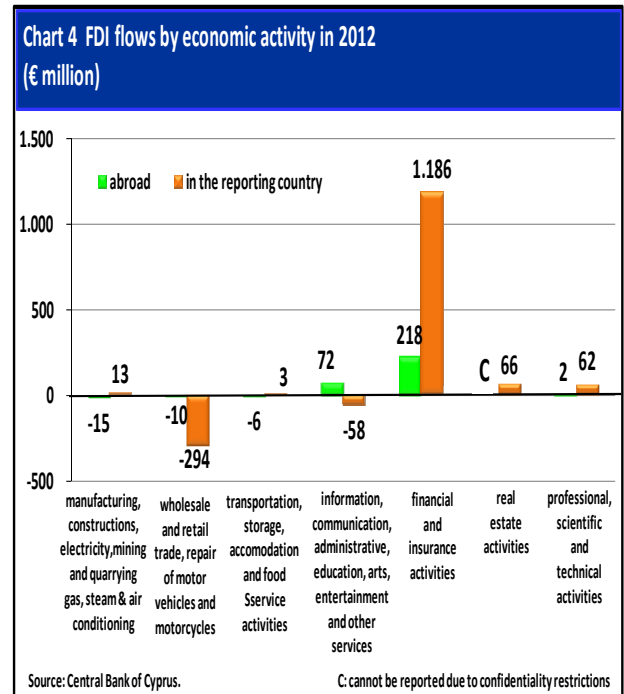
Chart 3 FDI flows by continent in 2012
(€ million)

Source: Central Bank of Cyprus.   C: cannot be reported due to confidentiality restrictions

In particular, outward investments in "financial and insurance activities" and "information, communication, administrative, education, arts, entertainment and other services" recorded reductions of €218 million and €72 million, respectively. In all the other economic activities, investments increased.

As regards FDI flows in Cyprus, the economic activity which attracted significant investments was the "financial and insurance activities" sector. In particular, there was an increase of €1.186 million in 2012, compared with an increase of €982 million recorded in 2011. Increases, albeit small, were also recorded in the following economic activities: "real estate activities", "manufacturing, construction, electricity, mining and quarrying, gas, steam and air conditioning supply" and "professional scientific and technical activities".

Withdrawals of investments placed by non-residents in Cyprus were recorded in only two economic activities, namely, "information, communication, administrative, education, arts, entertainment and other services" (decrease by €58 million) and
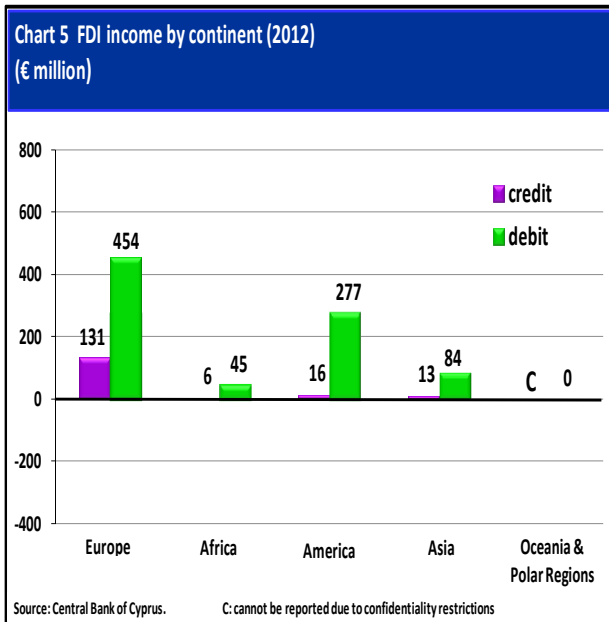
"wholesale, retail trade, repair of motor vehicles and motorcycles" (decrease by €294 million).

Chart 4 FDI flows by economic activity in 2012
(€ million)

Source: Central Bank of Cyprus.   C: cannot be reported due to confidentiality restrictions

FDI income payments and receipts by residents from abroad constitute another important category of FDI flows and an important element of the current account in the balance of payments. These statistics provide useful information to investors regarding the profitability of their investments in foreign countries and can be used as a basis for comparing the returns from alternative investment channels, like portfolio investment (e.g. bonds) and other investment (e.g. long-term interest bearing deposits).

In 2012, there were significant income payments to foreign investors (debits). In particular, as shown in **Chart 5** (p.4), €454 million were paid to European investors, €277 million to American investors, €84 million to Asian investors and €45 million to African investors. In the case of credits, income receipts from abroad were as follows: Africa - €6 million, America - €16 million, Europe - €131 million and Asia

- €13 million. In 2011, a total amount of €835 million receipts were realised from investments placed by residents in Europe.

Chart 5 FDI income by continent (2012)
(€ million)

Source: Central Bank of Cyprus. C: cannot be reported due to confidentiality restrictions

## 4. COUNTRY SIMILARITIES IN STOCK POSITIONS

In this section a cluster analysis (based on the k-means algorithm[4]) is applied to the FDI stock data, in order to identify homogeneous groups of countries which have similar stock positions towards Cyprus. Such an analysis is useful for the development of marketing strategies and programmes in order to promote FDI.[5]

The quantitative cluster analysis implemented on the FDI stock positions abroad identified three main

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[4] This algorithm aims to partition a sample of observations into k clusters in which each observation belongs to the cluster with the nearest mean.

[5] This clustering approach is economically efficient since only a limited number of marketing programmes may be developed, one for each group of countries. In other cases, much more resources may be required to develop individual marketing programmes for all countries.
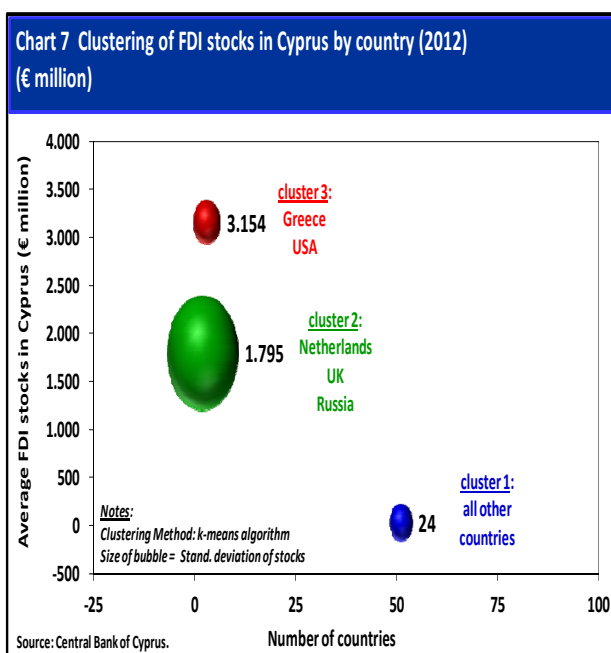
clusters of countries. They are depicted in **Chart 6.** The number of countries in each group (bubble) is measured on the horizontal axis and the vertical axis measures the average FDI stock value in each group (estimated as a simple un-weighted average of the stock positions of the countries participating in each group).

Chart 6 Clustering of FDI stocks abroad by country (2012)
(€ million)

Source: Central Bank of Cyprus.
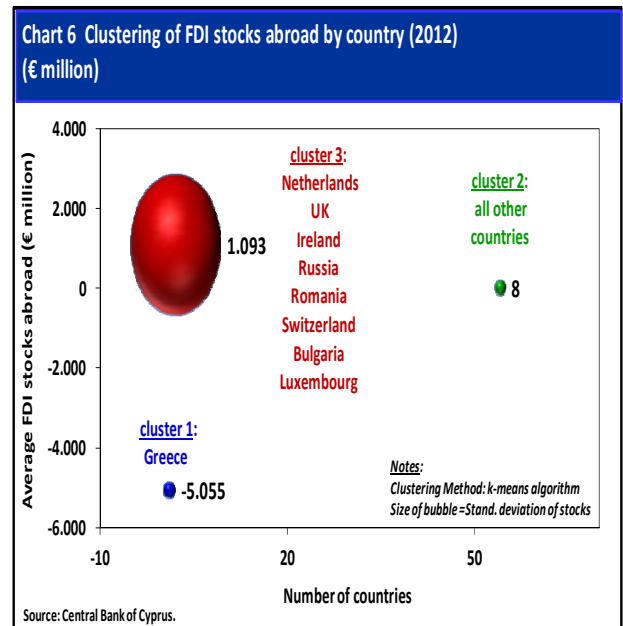
The size of each bubble is proportional to the standard deviation (variability) of the stock values in the associated group[6]. Cluster 3 consisting of eight countries - the Netherlands, the UK, Russia, Ireland, Switzerland, Romania, Bulgaria and Luxembourg - exhibits the lowest degree of homogeneity. These are the most important FDI destination countries for resident investors with an average stock position of €1.093 million.

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[6] The standard deviation (variability) provides an indication of the degree of homogeneity within each group. However, when the number of countries in a group is small, the standard deviation should be expected to be high due to the small sample size. Large values (bigger bubbles) indicate less homogeneous groups, characterised by less similar countries.

Cluster 1 consists of only one country, Greece, which has a negative stock value of -€5.055 million. This was also the only country in the dataset with a negative stock position and is due to the accumulated losses realised by the investments in the Greek banking sector. In 2011 the respective stock value amounted to -€1.251 million. All the other countries have been grouped into Cluster 2 since no further homogeneous groups have been identified in the data. The average stock position in this group is €8 million.

Chart 7 Clustering of FDI stocks in Cyprus by country (2012) (€ million)

cluster 3:
Greece
USA
3.154

cluster 2:
Netherlands
UK
Russia
1.795

cluster 1:
all other countries
24

Notes:
Clustering Method: k-means algorithm
Size of bubble = Stand. deviation of stocks

Average FDI stocks in Cyprus (€ million)

Number of countries

Source: Central Bank of Cyprus.

The results of the cluster analysis, when applied on the foreign stock positions in Cyprus, are depicted in **Chart 7**. Similarly with the stock positions abroad, three distinct groups have been identified but with a different composition than in the case of **Chart 6**. Cluster 3 consists of two countries and generated the highest average stock value. It consists of Greece and the USA. The average stock value in this group is €3.154 million. The small size of the bubble indicates greater similarity between these countries than in the other groups. In contrast, Cluster 2 consists of three countries -the Netherlands, the UK and Russia

- whose stock positions vary considerably. It has an average stock value of €1.795 million. All the other countries have been grouped into Cluster 1 since investors from these countries have relatively small FDI stock positions in Cyprus.

5. COUNTRY-ECONOMIC ACTIVITY ASSOCIATIONS

The analysis that follows concentrates on identifying associations between countries and economic activities[7]. In **Chart 8,** a two dimensional spatial representation map is presented, that exhibits the associations between selected countries (or groups e.g. offshore financial centres) and economic activities for FDI stock positions abroad. The exact description of each economic activity group is provided in **Table 1**.

The results were derived by applying the correspondence analysis statistical method on the stock positions of the different countries and economic activities. The distance between the countries in the two dimensional space is a measure of their similarity in receiving FDI from resident investors. For example, in **Chart 8** Switzerland and Russia are far from each other, suggesting that their profiles for FDI abroad are different. In contrast, Switzerland and Canada have similar profiles. Distances between points representing economic activities are interpreted in the same way. The two dimensions of the chart represent measurement scales derived after transformation of the original

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[7] The identification of associations between countries and economic activities is a key insight in order to identify FDI preferences by country. If there is knowledge regarding the preferences of investors coming from specific countries, marketing and investment opportunity programmes can be designed accordingly and become more targeted and relevant. This should be expected to maximise return on investment, by emphasising aspects and opportunities in economic sectors that interest investors the most.

data. It is also possible to compare the positions of countries and economic activities jointly. In this case each country will lie in the neighbourhood of the economic activity in which the country's FDI activity is more prominent.
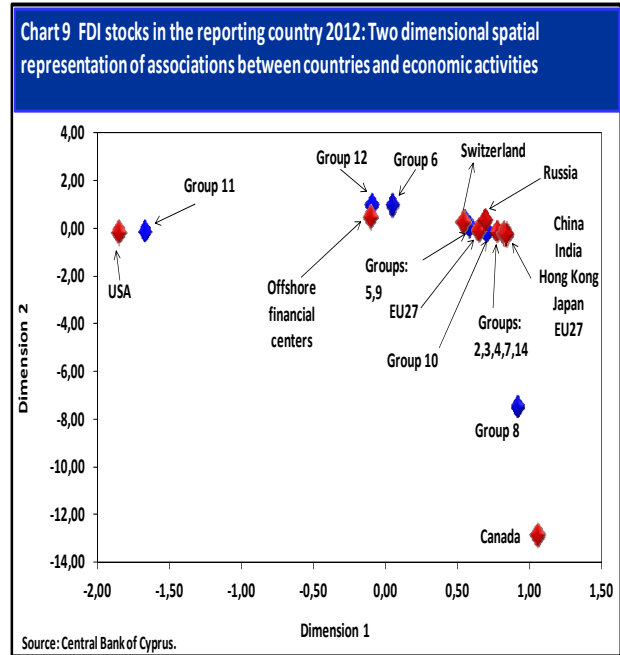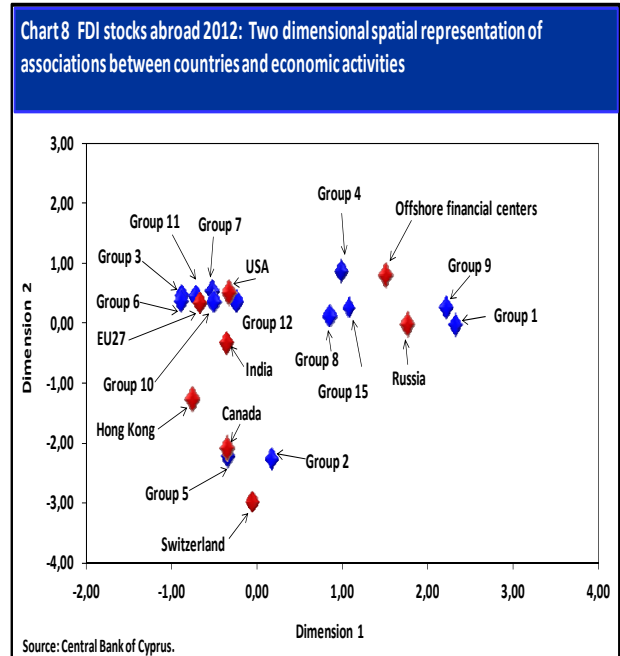
Table 1 Description of economic activities

Economic Activity	Description
1	Mining and quarrying
2	Manufacturing
3	Electricity, gas, steam and air conditioning supply
4	Construction
5	Wholesale and retail trade; repair of motor vehicles
6	Transportation and storage
7	Accomodation and food service activities
8	Information and communication
9	Financial and insurance activities
10	Real estate activities
11	Professional, scientific and technical activities
12	Administrative and support service activities
13	Education
14	Arts, entertainment and recreation
15	Other service activities

The spatial representation of FDI stock positions abroad, presented in **Chart 8**, suggests that USA, India and the group of the 27 European Union countries (EU27), exhibit similarities as far as FDI destinations for resident investors are concerned. They are mainly associated with economic activities 3, 6, 7, 10, 11, and 12. Other associations identified from the output are as follows: Russia - economic activities 1 and 9, Canada - economic activity 5 and Switzerland - economic activity 2.

Chart 9 provides a similar analysis for FDI stocks in Cyprus (owned by non-residents). Canada and the USA appear to have different FDI profiles from the other countries. Switzerland, Russia, Hong-Kong, China, India, Japan and the group of EU 27 countries present similarities in terms of origins of FDI in Cyprus. They are primarily associated with economic activities 2, 3, 4, 5, 7, 9, 10 and 14. Additional

associations identified by the analysis include: Offshore financial centres – economic activity 12 and USA – economic activity 11.

Chart 8 FDI stocks abroad 2012: Two dimensional spatial representation of associations between countries and economic activities

Source: Central Bank of Cyprus.

Chart 9 FDI stocks in the reporting country 2012: Two dimensional spatial representation of associations between countries and economic activities

Source: Central Bank of Cyprus.

APPENDIX: DEFINITIONS

According to the IMF definition, foreign direct investment (FDI) reflects a lasting interest of an entity resident in one economy in an enterprise resident in another economy. They consist primarily of equity participation giving a controlling stake in excess of 10 percent in the foreign enterprise, greenfield investments and several other special cases.

In general, FDI covers the investment activities of resident entities:

1. whose equity share capital is directly owned by non-residents with participation of at least ten percent and/or

2. whose equity share capital is directly owned by related non-resident entities with participation of less than ten percent and/or

3. who are non-autonomous branches of non-resident entities and/or

4. who own directly at least ten percent of the equity share capital issued by non-resident enterprises and/or

5. who own directly less than ten percent of the equity share capital issued by related non-resident enterprises and/or

6. who have legal non-autonomous foreign based branches or branch offices.

7. who have borrowed funds (e.g. loans or trade credits) from related non-resident entities, or lent funds (e.g. loans or trade credits) to related non-resident entities, or issued debt securities (short term or long term) which are held by related non-resident enterprises, or hold debt securities (short term or long term) issued by related non-resident enterprises and/or

8. who directly own real estate abroad.

Similarly, FDI cover the acquisition of real estate by non residents in the reporting economy.

When equity participation is below the ten percent threshold, it is classified as portfolio investment. Based on the definitions described above, FDI can be separated into: (a) investment abroad (residents investing in foreign countries) and (b) investment in the reporting country (non-residents investing in the local economy). There are two common exceptions to this FDI definition: (i) reverse investment (i.e. when a subsidiary company invests capital in the "mother" company and the two are located in different countries) and (ii) when lending takes place with the same group (i.e. the subsidiary lends money back to the "mother" company which is located in another country).

In line with the definitions and scope of the balance of payments and the international investment position of a country, two forms of time series variables are generated from FDI activities: stocks and flows.

Stocks refer to the level of assets or liabilities of FDI at a point in time. This information is included in the International Investment Position statement and provides: (a) the total amount of FDI assets (abroad) owned by residents and (b) the total amount of FDI liabilities (in the reporting country) that residents have towards non-residents.

FDI flows refer to transactions carried out within a specific period, the time accumulation of which (over several periods) forms the observed FDI stock positions after taking into consideration changes due to price and exchange rate fluctuations as well as other changes (e.g. reclassifications, write downs).

FDI flows also include FDI income payments. Income credits include receipts of dividends and interest from abroad by resident investors plus reinvested earnings accrued to residents from abroad. In contrast income debits concern payments of dividends and interest by resident entities to foreign (non-resident) investors and reinvested earnings accrued to non residents from their investments in the reporting country.

Flows are recorded in the balance of payments which records the inflows (in the reporting country) and outflows (abroad) of funds related to the financial transactions of the residents of a country, plus the capital and current accounts. The sign preceding each flow amount is of particular importance in understanding the changes in each category. In principle, the following interpretations apply:

FDI flows abroad:
- A negative sign indicates an increase in FDI abroad undertaken by residents (outflow).

- A positive sign indicates a reduction (withdrawal) in FDI abroad undertaken by residents (inflow).

FDI flows in the reporting country:
- A positive sign indicates an increase in FDI in Cyprus undertaken by non-residents (inflow).

- A negative sign indicates a reduction (withdrawal) in FDI in Cyprus undertaken by non-residents (outflow).

FDI income receipts from abroad (credits):
- A positive sign indicates an increase in FDI income receipts by residents from their investments placed abroad.

- A negative sign indicates the realisation of net losses by the FDI placed by residents abroad.

FDI income payments abroad (debits):
- A positive sign indicates an increase in FDI income payments by the FDI investments placed by non-residents in the reporting country.

- A negative sign indicates the realisation of net losses by the FDI placed by non-residents in the reporting country.