EU Twinning Project

Support to the Israeli Central Bureau of Statistics in the development of National Accounts, Education Statistics, Survey Methodology, ICBS Website and Coordination of Israel National Statistical System

Component A
National Accounts

Activity A.8: 27-29 October 2014
Study visit on Balance of Payments -
Direct investments and revenue from direct investments

Implemented by:

- Gennady Ackerman, CBS, Head of Branch, Balance of Payments and International Trade Department
- Miri Ben Tulila, CBS, Director of senior sector of Balance of Payments and International Trade
- *Yossi Grisi, CBS,* Head of Branch, Balance of Payments and International Trade Department
- *Liran Kalif, BoI, Deputy Head of Foreign Exchange Market Unit*
- *Hanady Azzam, BoI, Economist*
- *Vered Tayar, BoI, Economist*

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Authors' names, addresses, e-mails

Gennady Ackermann
Head of Branch, Balance of Payments and International Trade Department
Central Bureau of Statistics
66, Kanfey Nesharim
Jerusalem
Tel.: +972 2 659 2617
Email: gennadya@cbs.gov.il

Miri Ben Tulila
Director of senior sector of Balance of Payments and International Trade
Central Bureau of Statistics
66, Kanfey Nesharim
Jerusalem
Tel.: +972 2 659 2641
Email: miribt@cbs.gov.il

Yossi Grisi
Head of Branch, Balance of Payments and International Trade Department
Central Bureau of Statistics
66, Kanfey Nesharim
Jerusalem
Tel.: +972 2 659 2642
Email: yosefg@cbs.gov.il

Liran Kalif
Deputy Head of Foreign Exchange Market Unit, Statistics Division, Information & Statistics Department
Bank of Israel
Tel.: +972 2 6552539
Email: liran.kalif@boi.org.il

Vered Tayar
Economist, Forex Market Unit, Statistics Division, Information & Statistics Department
Bank of Israel

Hanady Azzam
Economist, Forex Unit, Information and Statistics Department
Bank of Israel
Tel.: +972 2 6552561
Email: \ hanady.azzam@boi.org.il

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1. Summary

The study visit to Denmark was aimed predominantly to learn as well as to share knowledge with Statistics Denmark and Danish Nationalbank on the subject of compilation and dissemination of Balance of Payments with the emphasis on issues such as data collection, data processing, cooperation with government ministries and Central bank.

During the visit, Statistics Denmark along with the Danish Nationalbank had presented elaborate explanations on various issues out of Current and Financial Accounts compilation with the emphasis on fully automatized online data collection system.

One of the major parts of the study visit has been devoted to the real estate issue, to be more precise, to the development of the estimation of the Real Estate estimates as part of Foreign Direct Investment. The ICBS had presented the milestones of the current development of the inward side of the estimates, the major challenge, however, that lies within building up the estimation model is in outward side of the real estate direct investment. This major challenge has been tackled throughout the meetings and some advices and recommendations have been made, as well as Danish Nationalbank has presented the way in which they use to obtain the real estate transactions data.

2. Background

2.1. Mandatory Results of Activities A.6 and A.7

Mandatory result	Benchmark
MR4: Detailed working plan for the development of financial accounts in the BoP Counts	Work plan for development of FDI in financial accounts, IIP and Primary Income Accounts, prepared by 6th project quarter

2.2. Purpose of activity A.8

- Presentation of the Danish experience with development of statistics on Direct Investments and revenues from Direct Investments
- Comparison between work processes in Denmark and Israel

2.3. Expected output from activityA.8

Report from ICBS and Bank of Israel staff on knowledge gained and how this can be used as inspiration for methods used in Israel

2.4. Participants

Miri Ben-Tulila, Head of Balance of Payments Division, ICBS
Gennady Ackerman, Balance of Payments Expert, ICBS
Yosef Grisi, Balance of Payments Experts, ICBS
Liran Kalif, Head of Balance of Payments Unit, Bank of Israel
Hanady Azzam, Balance of Payments Expert, Bank of Israel
Vered Tayar, Balance of Payments Expert, Bank of Israel

3. Current Account Compilation

3.1 Along with some interesting general facts and overview about statistics Denmark and Denmark itself we have heard about advantages of the administrative data sources usage and in fact when the administrative data sources do exist, their usage is in fact very cheap and cost effective. The lack of response burden, off course may up ease

upon all the sides. The total population coverage, with zero non-response rate makes the data quality outstanding, although at this point it is worth mentioning that even the Statistic Denmark from time to time encounters cases of enterprises not willing to cooperate and so in such a cases they twice send a fine with the submission request and after the second fine Statistic Denmark turn to the police.

In Denmark every single person has a specifically personalized number which may be equivalent to the social security number. In contrast with Israel, in Denmark this number is been used in every life area and aspect whether it is for personal, occupational or any other use. Similar identification numbers are in existence also for enterprises and for every real estate unit, the fact that sustainably up easing upon job of Statistic Denmark as well as all the other public institutions. It is worth mentioning that while a person itself may benefit from personalized id number for either personal, occupational or social uses, the existence of such a number, as well as fully automatized survey systems, does benefit the Statistic Denmark to a great extent, the combination that helps to generate an outstanding data quality and coherence. The personal ID number exist since the year 1968, while the business and 'building and dwelling' ID's exist since 1975 and 1977 respectively.

Although private individuals have no reporting obligation, but Statistic Denmark does conduct telephone interviews on the matters of household budgets and labor force surveys. There are 60 trained interviewers employed, out of which 10 constitute a permanent staff.

Statistic Denmark does provide an option for researches and analysts from authorized research and analytic organizations to have an access to micro data. The data is de-identified and positioned on a special server which is separated from the statistical production.

During the visit we have had an opportunity to look at the ways in which the Statbank Denmark tables are organized online including links to documentations, publications and graph generators.

Among the issues that had been discussed, lays the issue of the cooperation between Statistics Denmark and the Danmarks Nationalbank. The cooperation started with the Framework Agreement for Cooperation which had been signed in 2001, the agreement that aimed to contribute to the Danish statistics on the financial area and to meet continuously the Eurostat and the European Central Bank's guidelines, as well as to divide the responsibilities and tasks for the collection and the preparation of statistics. Among other purposes of the Agreement are to strengthen the ongoing cooperation on methodological and conceptual considerations in relation to both financial area and the Balance of Payments statistics and to improve the quality and the efficacy of the process of producing the statistics in the mentioned above areas.

3.2 During the three day visit the Israeli side had been presented the Trade in Services Account. Especially what have inspired interest was the Foreign Trade in Services is based upon current survey that is done on a monthly basis and does include in it 400 bigger companies and 300 small and medium sized companies on an annual basis. The questioner that is been sent to the companies has been presented by the Specialists of this area.

Regarding the Danish External Trade in Goods Statistics a few interesting facts were presented, among those the notion that the Statistics Denmark collects data on trade within the EU area while the local Customs Authority (SKAT) does the collection of the data with the outside the EU states. However the Statistics Denmark conducts the processing and the dissemination of the trade figures. 70 per cent of the external trade does fall within the EU countries area, whereas the major trade partners are the

ones in the closest geographic vicinity, namely Germany, Sweden and United Kingdom. Two different trading systems are covering the internal EU trade and the trade with countries outside of the EU area and those are Intrastat and Extrastat systems respectively. The data collection is done electronically in Intrastat trade system, regarding the extrastat system, it's covering about 99 per cent of the trade transactions in an electronic manner. The data flow between Statistics Denmark and the Customs Authority (SKAT) is conducted in a very smooth way, meaning that Statictics Denmark receives a copy of all new declarations will all information in it every night. There are data quality checks that are been conducted on a rather frequent basis. Online validations such as country check, missing values or commodity and custom procedure codes are conducted both by the Customs Authority and by the Statistic Denmark.

4 Financial Account and IIP

During the visit in Denmark the Israeli side had presented the presentation about the Foreign Direct Investment Statistics in accordance with the geographical and by industry classifications, both in inward and outward investment directions. The presentation outlined the undivided part of the Inward direct Investment by countries and continents, where the unrepresented fraction of the total FDI was rather a big one, to be more precise, it represented 35 per cent. The non-divided part of the FDI in general, does come from the ITRS, which is been remained to determine the reliability of the data. When we tackle the industry classification, we might see that the non-divided part of the FDI id decreasing drastically, to 17 per cent and this is due to the fact that we do have some additional information on the industry classification from the Israeli Business Registry in the ICBS.

Another issue that have been presented in the presentation is the issue of industry classification on the outward FDI, is that industry classification currently is up to the Israeli company and not in accordance with the Foreign company's classification. We are aware, that in accordance with the BPM6, the industry classification in the outflows of FDI should be in accordance with the Foreign company's industry classification. We are, in close collaboration with the Bank of Israel, currently are collecting the data on the industry of the Foreign Companies and in the near future will be reporting in accordance with this principle.

In addition, it has been presented the SPE problem in both inward and outward directions, while on the incoming FDI one might see massive inflows of investments from Cayman Islands and on the outward direction one might see massive outflows of investments to the Holland. SPEs and holding companies which often are only a first stop before the investments are channelled further on to other countries. This explains why some countries are strongly overrepresented, while the threshold could explain that certain smaller countries do not appear in the Israeli FDI statistics, because smaller investments are only covered through the ITRS – and therefore a considerable part of the data is unallocated with respect to geography. We suppose, that this is the SPE problem and the money does continue further to another investment directions. The same assumption might be made on the inward direction, meaning that it is not nesecerily that the inflow investment does come from the Cayman Islands, but rather from other investment directions.

5 Real Estate

5.1. *Background*

During the Real Estate presentation the current model of estimation of the Real Estate Direct Investments has been explained as well as the already existing sources of obtaining data on the outward investment directions and possible future sources on the inward investment direction. Among the points that have been explained during the presentation were the

current problem, namely the lack of the Real Estate clause in the IIP and the major reason that leads to this, that it is very difficult to obtain the exact identification of the transaction via the ITRS that in a part does also include the codification problem issue. One of the additional impediments is the methodological problem, notion that a large portion of the real estate owners they choose at some point in time to switch into local inhabitants, the procedure, that automatically switches the the ownership into resident to resident transaction, so that does not require the BOP transaction. Regarding the newly analyzed data sources on the side of the Inward FDI, and in line with the Twinning activities recommendations regarding the BoP and the IIP Compilation, the results are rather promising, there are however some further analyses and adjustments are required. The Annex 2 explains clearly the briefly mentioned above.

5.2 The estimation model of the Inward Real estate side in the FDI

The estimation model is as follows:

Position t (opening stock)
+ Transactions + Revaluations + Other changes
= Position t+1 (closing stock)

The data sources regarding the Transactions and positions are described in a precice and a detailed manner in Annex 2.

Jerusalem											
	Opening stock		Transactions	Revaluations	Other changes	Closing stock			Average prices (thousand)		
	No.	Mio NIS	Mio NIS	Mio NIS	Mio NIS	Mio NIS	No.		T_0	T_1	T_2
2011Q2	4.513	8.888	600	736	1	9.489	4.571	2011Q3	1.888	2.051	2.101
2011Q3	4.571	9.489	550	229	-744	9.295	4.629	2011Q4	2.051	2.101	1.915
2011Q4	4.629	9.295	536	-861	-780	9.051	4.687	2012Q1	2.101	1.915	1.947
2012Q1	4.687	9.051	566	150	-119	9.497	4.744	2012Q2	1.915	1.947	2.057
2012Q2	4.744	9.497	739	522	-59	10.178	4.775	2012Q3	1.947	2.057	2.206
2012Q3	4.775	10.178	755	711	-626	10.307	4.805	2012Q4	2.057	2.206	2.084
2012Q4	4.805	10.307	642	-586	-948	10.001	4.836	2013Q1	2.206	2.084	2.052
2013Q1	4.836	10.001	690	-155	-404	10.287	4.866	2013Q2	2.084	2.052	2.176
2013Q2	4.866	10.287							2.052	2.176	
Tel Aviv											
	Opening stock		Transactions	Revaluations	Other changes	Closing stock			Average prices (thousand)		
	No.	Mio NIS	Mio NIS	Mio NIS	Mio NIS	Mio NIS	No.		T_0	T_1	T_2
2011Q2	2.494	6.231	451	-651	-292	6.391	2.513	2011Q3	2.629	2.368	2.718
2011Q3	2.513	6.391	364	880	-437	6.317	2.531	2011Q4	2.368	2.718	2.274
2011Q4	2.531	6.317	462	-1.124	-745	6.035	2.550	2012Q1	2.718	2.274	2.459
2012Q1	2.550	6.035	500	472	-80	6.455	2.568	2012Q2	2.274	2.459	2.568
2012Q2	2.568	6.455	650	280	-188	6.917	2.640	2012Q3	2.459	2.568	2.672
2012Q3	2.640	6.917	528	275	-200	7.245	2.711	2012Q4	2.568	2.672	2.673
2012Q4	2.711	7.245	611	3	-353	7.503	2.783	2013Q1	2.672	2.673	2.719
2013Q1	2.783	7.503	563	128	-334	7.731	2.854	2013Q2	2.673	2.719	2.699
2013Q2	2.854	7.731							2.719	2.699	
Total											
	Opening stock		Transactions	Revaluations	Other changes	Closing stock					
	No.	Mio NIS	Mio NIS	Mio NIS	Mio NIS	Mio NIS	No.				
2011Q4	7160	15.612	4.736	425	-2.797	17.552	7.516	2012Q4			

Table 1. Jerusalem and Tel Aviv Real Estate Estimates.

The preliminary results of the Real Estate estimates are shown in Table 1. Off course, those results should be inflated to some extent and in fact the rate of inflation should be analyzed and investigated, as the numbers that are shown in table 1 are taking into account only the

data from the Jerusalem and Tel Aviv municipalities. There are, however, some rough local estimates, that one might see in the table and those are that cumulatively for both Jerusalem and Tel Aviv municipalities, for the end of the 2012 and 2011 years, the amount of real estate units owned by non residents totals to 7516 and 7160 units respectively. Those amounts of units roughly represent the total Foreign Direct Investment in the state of Israel of 17.5 and 15.6 Billion NIS in the years 2012 and 2011 respectively.

For the remaining data about the model and the problems, please refer to the Annex 2.

5.3 The problems existing in the Outward side

While it is relatively feasible to obtain the Real Estate Transactions and Positions data on the Inward side, it still remains extremely challenging to obtain the data on the opposite side, meaning the Outward Investments that are been made Israelis buying Real Estate outside the borders of Israel. The trustworthiness of the data received via the ITRS is still remains to be analyzed and a possibility of a small sample survey might be weighted and analyzed.

6 Activity Results

1. Much like the case in Israel, Denmark's National Bank operates according to the National Bank law, which allows the National Bank to collect data from different sectors of the economy via direct reporting and indirect reporting sources.
2. The Bank of Israel has started early in 2014 multiple tasks aimed at improving the compilation processes, improving data quality and data sources.
   During the visit to Denmark's National Bank, we were introduced to the history and background of the compilation and dissemination processes of the financial account of the BOP. We were also introduced to the current systems involved in the process, the different sources, reported questionnaires, data collection process and the IT model of the systems involved.
3. Data sources consist of non-financial reporters, Banks, Investment funds, Insurance and pension funds and financial reporters (Security statistics).
4. Direct Reports: There are two kinds of direct reporting, monthly and annually.
   Monthly report: concerns all financial accounts (receivables, securities holdings, financial derivatives, debt and securities issued).
   Annual report: concerns supplementary information which is gathered in connection with the annual financial statements. Consists of information about the enterprise's ownership interests in subsidiaries and associate enterprises abroad and information about foreign parent enterprises.
   All data reported to the Denmark's National Bank is according to the integrated approach:
   $Stock_t + flow_{t->t+1} + value\ adjustments_{t->t+1} = stock_{t+1}$
5. Reporting Procedures and deadlines:
   - The deadline for reporting an annual report by listed enterprises is no later than 4 months after the end of the financial year, while unlisted enterprises can report up to 5 months after the end of the financial year.
   - The deadline for monthly reporters is no later than 10 business days after the end of the month that the report concerns.
   - Processing monthly data takes up to 20 business days after the end of the month that the report concerns and then complete reports are sent to Statistics Denmark.
   - Monthly reports are finalized and disseminated 9 business days after the end of the consecutive month to the month that the report concerns.
   - Processing of annual data takes up relatively a long time, FDI statistics is disseminated 10 months to one year after the end of the financial year the reports concern.

- All statistical products are transferred to the joint data warehouse Denmark's National Bank and statistics Denmark share through a joint website that allows users to find all products concerning the balance of payments.

6. Data sources:
   - MFI3- Direct reporting system for the domestic banks
   - BPM6 Reporters- Direct reporting system for non-financial reporters, Investment funds, Insurance and pension funds.
   - VIP (Securities)- Denmark National Bank is preparing to launch a new securities direct reporting system in 2015. Until then, securities data is received through the MFI3 system, indirect reporting by custodians regarding households holdings, VP-Securities and CSDB which contain general information about prices, coupons and etc.

7. Work Processes:
   - The BOP statistics unit in Denmark's National Bank conducts regular meetings with big reporters. During these meetings, quality checks of previous reports are done.
   - The human resource involved in the work of the the BOP statistics unit related to direct reporting consists of 7 full-time positions, 40% of which is dedicated to quality checks.
   - The BOP statistics unit is comprised of human resource with a master's degree in related fields of education only.
   - Any change of system or work process is carried out after the process of locating potential reporters is put on hold, in order to create a less stressful working environment and to induce better efficiency.
   - Regular monitoring of public and private requests for new data or different products, in order to insure the unit's statistical products are suitable to the public's demand.
   - The BOP statistics unit approach to non-reporters or late reporters is through constant contact and reporting demands. Denmark's National Bank does not use the penalty approach.

8. Methodology:
   - Reinvested earnings are reported only in the annual reports. The BOP statistics unit uses a model to extrapolate the quarterly proxy.
   - The zero-flow proxy is used to estimate positions of late reporters. This proxy is carried out automatically. The monthly response rate is very high, 90% of the reporters, report on time.
   - Still no complete transfer to BPM6 in FDI related issues:
     a) Unlisted enterprises report data according to book-value and not an estimate of market-value, all according to a mutual agreement between the countries of the EU.
     b) The is no estimate of reverse equity investments.
     c) Direct holding is 20% and above.
     d) Difficulty in identifying foreign SPE's.

9. Technological Aspect:
   An overview of the BOP statistics unit's technological infrastructure was presented, Subjects covered:
   - data security measures taken by the national bank.

- Overview of the reporting platform.
- Automated real-time data quality checks.
- Data warehouse and data presentation tools (OLAP-Cubes).
- Analytical tools (ALMA).
- Shared website with statistics Denmark in which all statistical products regarding BOP are posted.

7 Conclusions

- One of the most eminent conclusions of this study visit by the Bank of Israel is the need for an increased timely data from the direct reporting population. Although it seems like the Danish model might involve a large number of questionnaires per reporter, from their experience, once the questionnaires are studied and mastered, the reporting burden on the reporters becomes less difficult, data quality is better and the feedback to the central bank decreases.
- There is a need for technological improvements of the systems involved in the Bank of Israel's model for producing the financial account of the BOP and the IIP.
- More emphasis is needed on the importance of cooperation and knowledge sharing with the reporting entities in order to achieve a more reliable reporting platform.

8 General Comments

The study visit was organized on the highest level with very comprehensive and efficient program. The presentations were very detailed and clear. A lot of methodological issues have been discussed. The consultations which were provided were very professional. All our questions were explained and provided with examples.

Last but not least, we would like to note the warm friendly atmosphere of the visit, which made the study visit not only educational, but also pleasurable.

9 Persons met

Casper Winther, Deputy Head of Section, caw@dst.dk
Søren Rich, Senior adviser, sri@dst.dk
Agnes Nansen Urup, Head of Section, anu@dst.dk
Poul Uffe Dam, Chief adviser, pud@dst.dk
Selma Mustafic Mulalic, Senior adviser, smu@dst.dk
Silja Emmel, Head of Section, sie@dst.dk
Kristian Nørgaard Bentsen, Economist, knb@nationalbanken.dk
Niki Bjarne Kjær Saabye, Head of Division, nis@nationalbanken.dk

10 Annexes

8.1. Annex 1 - Agenda (meeting programme)

Monday: Statistics Denmark, Sejrøgade 11, København Ø
Tuesday: Danmarks Nationalbank, Havnegade 5, København K
Wednesday, morning: Danmarks Nationalbank
Wednesday, lunch and afternoon: Statistics Denmark

Date	Time	Event
Mon 27/10	09:30	Introduction to Statistics Denmark, practical matters, agenda
	10:30	The organisation of the Danish Balance of Payments system • Cooperation between the statistical office and the central bank CAW • The data collection systems relevant for the current account ANU/PUD • Statistics Denmark's compilation system for the BoP ANU/PUD • International reporting ANU/PUD • Recent developments following the BPM6 CAW/PUD
	12:00	Lunch
	13:00-16:00	Foreign trade in goods – Intrastat and Extrastat SRI
		Foreign trade in services CAW/PUD
		Cooperation with other divisions in Statistics Denmark, : • Government finances (EU contributions and subsidies etc.) PUD • Welfare Statistics (compensation of employees) ANU/SMU • Short Term Statistics (travels) SMU
Tue 28/10	09:30	Introduction to Danmarks Nationalbank
	10:00	The Financial Account of the Danish Balance of Payments statistics: • History and background • The present compilation system and the data sources: MFI, investment funds, insurance companies and pension schemes, custodians (incl. VP), direct reporting from non-financial enterprises etc. • The questionnaires for the direct reporting with focus on the Foreign Direct Investments
	12:00	Lunch
	13:00-16:00	The data collection and the IT model: • Reporting solutions • Receiving data and validation rules with focus on automatized procedures • Imputation for non-responses/untimely responses
Wed 29/10	09:30-11:00	Statistics Denmark's reporting systems
	11:00-12:00	Coordination with National Accounts and revision policy PUD
	12:00-13:00	Lunch (Statistics Denmark)
	13:00-13:30	Evaluation of study visit

8.2 Annex 2 - *Twinning Report on FDI in Real Estate in the Israeli BoP/IIP statistics*

1. Background and introduction

Currently, the Israeli FDI and IIP statistics does not include information on households' ownership of real estate.[1] The main reason is the difficulties of identifying the transactions in the ITRS system.[2]

Currently, quarterly data on real estate transactions based on the ITRS are reported in the Israeli BoP but according to the Bank of Israel it is highly unsecure what is included in the data reported to Bank of Israel under the ITRS codes in question. Actually, there are serious reasons to not believe that funds to be used for real estate investments are not necessary, or even generally, not being transferred through the international banks.

For the IIP information, on the stock values, the problem is also methodological: in many countries the cumulated value of transactions would provide the basis for an estimation of the stocks, but in Israel it is well-known that a rather large share of the real estate owned from abroad changes status to an internal Israel-Israel ownership relation when the non-residents choose to become residents.

During the Twinning project, and in line with the recommendations from the Twinning activities regarding BoP and IIP, newly available data sources have been analyzed. The results are rather promising regarding non-resident households investments in Israeli real estate for which already existing administrative data are evaluated to give good and rather trustworthy results.

On the other hand, work still remains to be done regarding Israeli households' real estate investments abroad. During the Twinning project, data sources that could possibly be used as inputs to statistics both on outward going transactions (purchases, *net*) and stocks have been looked for. Of these data sources, it cannot yet be concluded that the ITRS can not provide adequate information, but otherwise than the ITRS no useable data can be found, and it may be that a small survey among Israel real estate brokers, specialized in real estate abroad, will have to be implemented.

2. Inward FDI in real estate

Two data sources have been analyzed and used to establish a consistent system of transactions and positions for the inward FDI in real estate:

- Data from the Tax Authorities (Ministry of Finance) regarding the inward investments in real estate, based on the registration of actual purchasing prices.
- Data from the newly established Building and Dwelling Register in ICBS, based on reportings from the municipalities of Tel Aviv and Jerusalem, and also Bat Yam, but the Bat Yam data could not be used for the present analysis.

These two data sources are described in short, below.
The model or approach, as outlined in the A.7 mission report of the Twinning project, is a full identity as the following:

Position t (opening stock)
+ Transactions + Revaluations + Other changes
= Position t+1 (closing stock).

[1] In contrast, enterprises' FDI ownership relations per definition include the value of land and buildings.
[2] ITRS is the International Transactions Reporting System based on Israeli commercial banks reporting on behalf of their clients to the Bank of Israel.

2.1 Transactions data

From all the transactions regarding real estate, the ones specifying a non-resident as the buyer are isolated and analyzed further. The distinction is made via information on the buyers' ID no. If the buyer of the real estate has not got an ID no. a passport no. is used as identifier to the Tax Authorities. Thus, the population of this study is defined as the buyers (investors) not having an Israeli ID no.

It has not been possible to check whether there are systematic problems in the ID no. versus passport no. registration. This is a general weakness when using administrative data, and often the data has to be used as it is. However, in this case, it could, and probably should, be analyzed from a theoretical point of view whether there could be incentives, as a resident investor, to choose to register as a non-resident – knowing that many Israelis have double citizenships and two passports. In other words, it cannot be ignored that over-reporting to some extent can be a problem.

The data set coverage is total, meaning that all municipalities are represented in the data set. However, only the data concerning the Jerusalem and Tel Aviv municipalities have been used as these data match the available data on the positions.

From the data, both full and partial non-resident ownerships have been kept. Quite often, the acquired investment is less than 100 per cent, but naturally also 33, 60 or 90 per cent ownerships are of relevance to the total value of real-estate transactions involving non-residents.

Real estate owned by non-residents and sold to residents during the period in question is apparently not covered by the data. This probably contributes to an over-estimation of the total net transactions. However, as per the developed model outlined above, this must be seen as included in the Other changes component. See also the interpretation of the results in section 2.4.

2.2 Positions

ICBS has recently started collecting yearly data on buildings and dwellings. A status is provided as per 30 June, starting from 2011. So far, only three municipalities are covered, and of these only Jerusalem and Tel Aviv can, using the municipality number, be matched with the transactions data.

The data of the Building and Dwelling Register distinguishes between residential and non-residential buildings, including each separate housing unit (apartment), and it includes information on the size of the unit as well as the before-mentioned municipality number.

Like the transactions data, only the units registered through a passport, and thus not by an Israeli ID no., are considered for the present analysis. As for the transactions data there may be reason to further analyze the economic incentives for a non-resident to remain registered as such, even though he or she at some point in time obtains Israeli citizenship and ID no. Similarly, it could be the case that the municipality information on the ex-non-residents is just not updated.

It is suggested to identify the units which from one point in time to the next change from being reported as belonging to non-residents to not being in the non-resident part of the statistical population. In theory, these units could either have been sold to residents, or the owners have obtained Israeli citizenship since the last status. By checking this information from the Building and Dwelling Register against the population register, some rather strong indications of the quality of the Building and Dwelling Register.

In the light of the results from such an analysis it could be considered whether there is not, in the long run, only a "delay" of having the ex-non-residents re-registered as residents, and therefore it is not necessarily an ever-accumulating problem.

A number of peculiarities in the data have been checked. One has to do with balconies being registered separately, each being registered with a size at zero square metres. These have been excluded from the data. Another has to do with "false duplicates" – i.e. identical units registered on the same address. When checked, these turned out to be regular, but identical, apartments in the same building – in some cases buildings that are constructed with one of the main purposes being mass-sale to non-residents.

After having cleaned the data, the output of the analysis for each of the two municipalities for a given time, for example 30 June 2012, is one single number – that is, the number of residential units belonging to non-residents. Unfortunately, there are no prices (market value or other public price evaluation) attached to the individual units in the register, so to estimate a total value of the two sub-populations (Jerusalem and Tel Aviv), average prices for these two parts of the population have to be constructed and applied, see section 2.3.

Because the status is only made yearly, at 30 June, the difference between one year and the next has to be distributed on quarters to match the transaction data and to fit the model. Currently, this is only done in a linear way so that 25 percent of the change is allocated to each quarter. This can be developed in a more sophisticated model, for example by distributing the total change during the year according to the patterns of the transactions data.

2.3 Prices when estimating the value of the stock

When further developing the model, the following two assumptions were made:

- The average price of a residential unit belonging to a non-resident can, at a given time (for example 30 June 2012) be constructed as the average of the actually registered transaction values of the two surrounding quarters (in this case: the second and the third quarter of 2012).
- New investments (acquisitions, purchases) by non-residents in real estate in average has the same characteristics (size, general attractiveness) and therefore the same value as the average unit (apartment) of the already existing stock of real estate owned by non-residents.

Accordingly, the information on prices from the transactions involving non-residents is re-used, so to speak, in the model to also apply for the position data.

Outliers, i.e. extremely expensive or inexpensive real estate units were excluded when constructing the average prices. The main reason is that these units could be exceptionally expensive, and only transactions at less than 10 mill. NIS and above 50 thousand NIS were kept when constructing the average prices. Another reason for excluding these very expensive units is that they are not evenly spread among the four quarters of the year.

When estimating the revaluation item of the model, for example during the third quarter of 2012, the change in the average transaction prices of the following quarter (the fourth quarter) as compared to the third quarter, is used. This change in average transaction price is multiplied onto the number of real estate units to obtain a measure of the total revaluation item.

2.4 Results – interpretation of the model

So far, only 8 quarters have been analyzed starting with 30 June 2011 stretching to 30 June 2013. For each end-of-quarter, the value of the stock is estimated as the number of real estate units multiplied by the constructed average price. This is done separately for the two

municipalities of Jerusalem and Tel Aviv, i.e. the two municipalities where the two data sources can be matched uniquely by the municipality number.

The results are shown in the attached Annex 1. Results are shown for Jerusalem and Tel Aviv, separately, and for the year 2012 the aggregate results are also provided.

Having direct information on the transactions from the Tax Authorities, and having estimated each of the items Opening stock, Revaluation, and Closing stock, the last item of the identity, Other changes, is calculated as the residual, i.e.:

Other changes = Closing stock – Opening stock - Transactions – Revaluations

The main interpretation of the Other changes item is as a measure of the total value of the real estate units owned by non-residents at the beginning of the period (quarter) but not at the end of the period in question.

However, while the Other changes item therefore first of all includes the effect of non-residents becoming residents during the period in question (which was referred to as the Israeli problem in the very beginning of this report) it may also include the value of those real estate units being sold by non-residents to residents, cf. the discussion in section 2.1. Thus, some (minor) share of the Other changes could probably be seen as reverse transactions, and therefore, in principle, reducing the value of the Transactions item.

2.5 Evaluation of the model

Based on the assumptions and the estimation methodology applied, the model seems to produce rather reliable results for Jerusalem and Tel Aviv. In particular, the Revaluation item consequently is negative, as suggested by model.

For the one calendar year covered, 2012, the combined total of Jerusalem and Tel Aviv real estate owned by non-residents is 17.5 billion NIS at the end of the period, or around 5 billion USD arising from a total of 7,516 real estate units. Obviously, these results should be inflated to also cover the rest of Israel, e.g. Natanya and other municipalities that are well-known to be popular among non-residents having Israeli real estate. Realistically, and if the Jerusalem and Tel Aviv results can be trusted, the total for Israel would probably be between 7 and 9 billions USD as of end-of-2012, and would then equal around 10 percent of the total FDI in Israel.

Obviously, a proper grossing-up, or inflating mechanism needs to be developed. Possibly, the share of the transactions of Jerusalem and Tel Aviv combined as compared to the total could provide a starting point of such an analysis.

Two final points:

First, it should be mentioned that, on top of other possible improvements of the methodology, a projection method regarding the quarterly position data has to be thought of. The simplest solution would be to add the current transactions to the latest stock estimate, and only taking the price effects into proper account when new stock data becomes available.

Second, it should be analyzed whether the considerable amount of FDI gives rise to investment income to the non-resident owners. It is well-known that some of the non-resident owned apartments are empty when not being used by their owners, but part of it may also be rented out. If, for example, one out of five real estate units is rented out at 12,000 USD per year this would imply investment income around 25 million USD.

3. Outward FDI in real estate

The outward FDI in real estate, i.e. Israeli residents' ownership of real estate abroad, is thought to be considerably less voluminous than the inward FDI. The problem is that this idea is just an idea and not based on any evidence, whatsoever.

Currently, quarterly transactions are reported in the Israeli BoP

As a result of not having obvious data sources available to cast light on the topic, the following reasons for Israeli residents to have real estate abroad, has been identified, the importance of each of these three components (and there may be more) is difficult to evaluate:

- Residents buying real estate in New York, Paris and elsewhere to use as leisure homes
- Residents keeping real estate abroad after immigrating to Israel
- Residents inheriting real estate from family members who stayed in the home country

3.1 Analyses of data sources

Some attempts have been made at studying an ICBS study on immigrants that was conducted in 2011, but only very vague information on the financial relations between the immigrants and their family members or other personal relations in the home country can be derived (the theory being that possible income from renting out an apartment in the home country might have been reported to the study, thus giving an indication of the extent of the two last points, above).

It remains to be analyzed whether any information from the ITRS can provide any information about real estate brokers in Israel, specializing in selling foreign real estate to Israeli residents.

One very disturbing factor when thinking of using the ITRS as a possible source of the outward FDI in real estate is the financing through non-resident banks which is especially relevant for investments requiring some kind of mortgage loans. Thus, even in theory only a smaller part of the outward FDI would be identified through the ITRS.

3.2 Possible future sources

A sample survey, directed towards Israel real estate brokers specialized in selling foreign real estate to Israeli residents could be a way of obtaining rather solid information on this part of the transactions. Still, even if it was possible to identify the total population of such brokers, the coverage might be unknown because also non-resident brokers (in New York, Paris etc.) are selling directly to Israeli citizens, and some real estate transactions would go through other channels.

Inclusion of a questionnaire in the Household Expenditure Survey, or another Social Survey, on the household's possible ownership of real estate abroad would be ideal as a source to estimate the value of the stocks, at a given point in time. However, it is in a number of ways problematic to include such a question in the survey – firstly, it could be difficult to obtain reliable information as the households would be afraid of the control aspect; secondly, such a question should be very well (discretely) formulated so as to not ruin the main part of the survey.

4. Conclusions

Based on the preliminary calculations the size of the inward FDI in real estate is of significant size, and it would be preferable to complete the development of the methodology as soon as possible in order to include the information in the Israeli BoP and, in particular, IIP statistics. However, for reasons of symmetry, the outward FDI in real estate has to be estimated in a proper way before the inward FDI in real estate can be published.

An analysis of the apartment belonging to non-residents at one point in time, and to residents at the next point in time should be conducted. This would enable one to conclude more firmly regarding the assumption that the majority of these cases is a result of non-residents becoming residents during the 12 months period in question.

The ITRS information needs to be studied more before drawing any conclusions on the necessity of possibly implementing a study among real estate brokers, or inclusion of the information in one of the social surveys.

In general, it would be preferable if a consistent stock-transacations model would be developed for the Israeli households' outward going investments in foreign real estate.

11 Annexes external to the report

Annex 3: Introducing Statistics Denmark

Annex 4: Cooperation between Statistics and Nationalbank

Annex 5: Danish BoP production system

Annex 6: External Trade in Goods Statistics

Annex 7: Trade in Services

Annex 8: Recent developments following BPM6

Annex 9: Travel Account

Annex 10: The danish BOP financial account system

Annex 11: Israeli Real Estate Presentation

Annex 12: Israeli IIP Plan Overview

Annex 13: Israeli FDI Presentation

Annex 14: Digital Data Collection

Annex 15: National Accounts - Production Plan