Organisation for Economic Co-operation and Development

COM/SDD/DAF(2019)5

Unclassified

English - Or. English

25 October 2019

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
STATISTICS AND DATA DIRECTORATE

Working Party on Financial Statistics

The Influence of multinational corporations on national accounts: Corporate inversions and trade in Intellectual Property

Joint meeting of the Working Party on Financial Statistics and the Working Party on National Accounts

5-7 November 2019
OECD Conference Centre

This paper from Statistics Netherlands will be presented at the Joint meeting of the Working Party on Financial Statistics and the Working Party on National Accounts under Agenda item 4.b.

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JT03453528

This paper is only available in pdf.

The Influence of multinational corporations on National accounts: corporate inversions and trade in Intellectual Property

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Paper presented at:
OECD Working Party on National Accounts
5-8 November 2019, Paris

Remarks:
The views expressed in this paper are those of the authors and do not necessarily reflect the policies of Statistics Netherlands.
Date: 20 October 2019

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1. Introduction

In July 2016 users of macro-economic statistics were startled by the revision of the Irish Gross Domestic Product (GDP). GDP appeared to have grown by 26,3% (nominal 32,4%). Such a growth figure is way beyond those normally recorded for modern western economies. The relocation of large amounts of intangible assets to Ireland by a number of multinational corporations was the main cause of the unusually high growth rate of GDP. The large effects of globalisation on the compilation of national accounts was already known, but the Irish case revealed the potential large effects of the activities a select group of multinationals on the economic statistics of relatively small countries. For the Irish policymakers and the Irish statistical bureau (CSO) these development were the reason to introduce, next to the international accepted concepts for measuring the size of the economy, a modified Gross National Income (GNI*). GNI* corrects for the globalisation effects that took place in 2015[1]. Since then other countries have begun studies to quantify the economic effects of multinationals.

Against this background the Dutch ministries of Finance and Social Affairs and Employment requested Statistics Netherlands to perform an exploratory study on the influence of two phenomena related to multinationals on the published macro-economic data such as GDP and GNI for the period 2010-2017. The two research topics were:

1. the effects of relocation of the head office of the multinational to the Netherlands (corporate inversions) on Dutch macro-economic figures;
2. the generation of income by multinationals in the Netherlands through relocation of Intellectual Property (IP) to the Netherlands whereby Dutch research and development activities (R&D) did not or only to limited extent contribute to the creation of the IP.

The effects of these phenomena on macro-economic figures can be regarded as a distortion that may obstruct the use of national accounts data for the analyses of the Dutch economy. Of course, the severity of the distortion is related to size of these phenomena. The goal of this study is to calculate a first quantitative estimate of these phenomena in the Netherlands.

The content of the paper is as follows. First an outline of the statistical background is given for both phenomena and the scope of the study is clarified. After that the results for the Dutch economy will be presented.

2. Corporate inversions.

Statistical background

Corporations need to be located somewhere to be able to exist. The registration of the location is among other things decisive for the country of taxation and the legal framework the corporation has to operate within. Multinational corporations usually consist of a large number of entities that are located in different countries. In the end each multinational corporation has one entity that formerly functions as the main establishment; as a rule this is the head office. Often the head office is located in the country in which the multinational first started.

A multinational can change its residence. Often this is a relatively straightforward procedure. It can be done by registering a new company in another country and subsequently transfer the assets of the old enterprise to the new one. As a final step the old enterprise will be closed down or placed lower in the corporate structure. The result of such a restructuring is called a corporate inversion.

[1] Report of the Economic Statistics Review Group (ESRG), December 2016

There can be several reasons for inversions, for example tax avoidance, securing assets to avoid confiscation by governments or clearer and more predictable laws and regulations.

The activities of enterprises are part of the GDP of a country as far as they concern productive activities and generate value added. Subsidiary companies of foreign multinationals can therefore contribute substantially to the GDP of the country were they reside. For GNI their contribution is smaller. The profit made by such subsidiaries is, in conformity with the international statistical guidelines, attributed to the foreign owner. The foreign owner is fully entitled to these profits and can use it as he desires. The profits of Dutch subsidiaries of foreign multinationals, after deduction of consumption of fixed capital and corporate tax payable, are not part of GNI of the Netherlands. Consumption of fixed capital is deducted, since this treated as a cost item that cannot be regarded as income for the foreign owner. Therefore, remuneration of employees, taxes paid and consumption of fixed capital are considered as part of GNI of the country involved[2].

The described way profits are allocated to the foreign owner means that inversions only affect GNI as far as it leads to extra payments of taxes or the generation of new productive activities, for example through the hiring of new personnel or, if such taxes and activities disappear for the economy as the consequence of an inversion.

In fact the effect of inversions should be split in two. One the one hand the actual relocation which will have a neutral effect on GDP and GNI and on the other hand the effect of the economic activities the enterprise may undertake and that may result in an effect on GDP and GNI. The second effect is not different from the effects from creation or destruction by other enterprises were no inversion have taken place.

Relocation of a head office has the same effects as the relocation of a subsidiary as long as the owner, for example the founder, is foreign. But that holds only for the proportion of the ownership of the foreign owner in the enterprise and whether or not the profit is paid out as dividend. If the foreign owner possesses 90 percent of the shares, only 90 percent of the profit will be attributed to the foreign owner. However, if he possesses less than 10 percent, only the profit paid out as dividend will be attributed to the foreign owner. In that case the ownership share is supposed to be insufficient to have control or a significant degree of influence on the management of the enterprise. The differences in treatment of equity investment based on size is connected to the distinction between direct foreign investment and portfolio investment as defined in the Balance of Payment Manual (BPM6)[3].

In case an enterprise does not have a foreign owner possessing more than 10 percent of the shares, in national accounts 100 percent of the profits will remain with the enterprise, as far as the profits are not paid out as dividends. This applies especially for listed enterprises, where the shares are usually divided over a large number of investors spread over many countries. Corporate inversions of listed enterprises can therefore potentially have large influences on GNI.

Table 1 shows the influence of a foreign owner of a Dutch enterprise on GDP and GNI. In the example a Dutch enterprise is producing goods and services and thus generating value added for a value of 100 with a gross operating surplus of 25. The enterprise has consumption of fixed capital and pays corporate tax of both 5. Net profit available to the owner(s) is 15. In case a 100 percent foreign

[2] Purchases made by such subsidiaries from Dutch suppliers will have an additional contribution to the GNI of the country involved.

[3] Relevant parts of the Balance of Payments Manual version 6 (BPM6) are amongst others par. 6.8 – 6.24 regarding the delineation of a direct foreign investment and par. 11.33 – 11.47 regarding the concept of retained earnings on direct foreign investment. The concept of reinvested earnings on direct foreign investment is treated in the European System of Accounts version 2010 (ESA2010) in par. 4.64-4.67.

owner the whole amount of 15 is attributed to the foreign owner; GNI is lower than GDP. In case there is no foreign owner at all, GNI equals GDP.

Table 1: Representation of the influence of a foreign owner of an enterprise (stylised example).

	100% foreign owner	10% foreign owner	no foreign owner >10%
Compensation of employees	75	75	75
Gross operating surplus	25	25	25
Gross domestic product	**100**	**100**	**100**
Consumption of fixed capital	5	5	5
Corporate tax	5	5	5
Net profit from domestic subsidiary	15	15	15
Net profit from foreign subsidiary	0	0	0
Profit attributed to foreign owner	15	1,5	0
Gross national income	**85**	**98,5**	**100**

Table 2 shows the effects of a corporate inversion on GDP and GNI following the international statistical guidelines (ESA2010). Again we have an enterprise producing 100 with a gross operating surplus of 25. Then, the head office of the Dutch enterprise, but also of some foreign subsidiaries is relocated to the Netherlands.

In this case, the relocation itself does not bring extra economic activities to the Netherlands, meaning no change in GDP. This is not always true, relocation to the Netherlands may create extra activities in the Netherlands which would mean an effect on Dutch GDP. Because of tax exemption for profits of foreign subsidiaries based on double taxation tax treaties, as a rule there will be no extra corporate tax revenues. The example shows that, in case there is no foreign owner with a share of more than 10 percent, the profits after the relocation will fully contribute to GNI. The means that the effects on GDP of the enterprise are quite different from the effects on GNI.

Table 2: Example of inversion of a head office (stylised example).

	domestic subsidiary with 100% foreign owner	Inversion head office with 100% foreign owner	Inversion head office without foreign owner > 10%
Compensation of employees	75	75	75
Gross operating surplus	25	25	25
Gross domestic product	**100**	**100**	**100**
Consumption of fixed capital	5	5	5
Corporate tax	5	5	5
Net profit from domestic subsidiary	15	15	15
Net profit from foreign subsidiary	0	200	200
Profit attributed to foreign owner	15	215	0
Gross national income	**85**	**85**	**300**

Corporate inversions of multinational are therefore of interest if a substantial part of the equity is owned by minority shareholders, each owning less than 10 percent of the shares. Companies that meet this profile and usually are of considerable size are often listed companies.

The survey

As shown above, a corporate inversion affects GNI if the company involved has minority shareholders each in possession of less than 10 percent of the stock value. This is almost only true for listed companies. The survey of the quantitative effects of corporate inversions is therefore concentrated on this group of corporations.

During recent years a number of listed corporations have relocated their head offices to the Netherlands. In these case the corporations gave up their old foreign head office for a head office in the Netherlands. The shares of the old statutory seat were converted to shares of the new one. Since this concerned listed corporations, such conversion is often widely announced, for example in the media. However, such an relocation cannot always be detected so easily. It may happen for example that a private equity firm delists a company only to float it at a later moment on the stock market again from another country. It may also occur that a unlisted firm relocates its seat before the initial public offering.

To establish which Dutch listed corporations are created from a corporate inversion, all Dutch listed corporations have been analysed for the following two characteristics:

1. The corporations is by origin foreign. It originated abroad and the initial growth stage took place abroad.
2. Considering the size of the whole multinational corporation, the Dutch activities are relatively limited, although they may be considerable in absolute terms.

Based on these criteria 28 corporations were detected. Subsequently the effects of these corporations on GNI are quantified. Usually corporate inversions do not have direct effects on GDP or other macro-economic variables that are analysed in this study. There are, however, some multinationals with Dutch subsidiaries that do generate value added. The available data does not make it able to establish the extent to which the corporate inversion has led to changes in the value added of these subsidiaries in the Netherlands that would not have occurred without the inversion. It can be said that the largest part of the value added involved was generated independent from the corporate inversions. Thus, no further GDP effect is determined in the study that could have arisen due to the corporate inversions.

3. Corporations with intellectual property relocated to the Netherlands.

Statistical background

Enterprises produce goods and/or services using labour and capital. The produced goods and services are subsequently sold to be used as intermediate consumption by another enterprise or as consumption, export or investment. Goods and services used for investment lead to new capital goods which will be used for future production of goods and services.

Usually capital goods are physical objects with a fixed location like buildings, machines and roads. There are however also mobile capital goods like airplanes, ships and drilling platforms that can move from one economic territory to another. Most capital goods however, have a strong tie with a physical location.

Many corporations nowadays depend strongly on research for new products and production processes for their survival. Not only available new products and processes are valuable, be also the research prior to this. The value of the results of research is an example of intellectual property (IP). In the case of products and production processes this concerns IP that is added to the capital stock as investment.

In the National Accounts IP is divided between produced IP and non-produced IP. Produced IP is the result of research for new products or production processes. Entertainment, literary, and artistic originals are also included in produced IP. Non-produced IP comprises for example the value of brand names, trademarks and logos and the value of licenses to use these. Only produced IP is treated as part of the capital stock and the increase of it is registered as investment in national accounts[4].
Non-produced IP is in the international guidelines considered 'bycatch' of normal production processes where products are produced and sold. Although the non-produced IP is generated in these production processes, the creation of this non-produced IP is not the primary intention of these production processes, nor is it a necessary part of it. Nevertheless, the distinction between produced and non-produced IP seems somewhat artificial. The current way of registration as prescribed by the international statistical guidelines is partly motivated by the complexity to compile reliable estimates for the production of marketing services that could be capitalised as capital stock. For that reason marketing assets are only registered in the National Accounts when an actual transaction takes place between two parties and not as an investment resulting from a production process.

Despite the distinction between produced and non-produced IP, income from royalties and licenses received on the basis of non-produced IP is registered as output in National accounts and therefore affects BBP. It is useful to remark here, that registering the income from non-produced IP as output influences the consistency between the capital stock and the corresponding depreciation in the National accounts on the one side and the income from royalties and licenses as part of GDP on the other.

Just like airplanes and ships capital goods in the form of IP can easily be traded between national economies. IP can also have a large economic value which means that the capital stock of a country can increase or decrease considerably in a short period if IP is relocated from one country to another.

Fiscally, countries treat IP and the related royalties and licensing income not always in the same way. This can trigger multinationals to divide IP over countries in such a way that the tax payable is minimised. Because of this, trade in IP between different units of a multinational located in different economies arises, although the IP stays within the multinational. Such trade not only causes increase or decrease of the capital stock of economies; the receipts/payments for royalties and licences connected with IP are treated as output/intermediate consumption and influence GDP.

Table 3 shows the effects of the purchase of IP for an amount of 200 on the macro-economic variables of a country. In period 1 an enterprise, which is a subsidiary of a foreign multinational, is producing goods and services. It output is destined for exports. During period 2 this subsidiary buys produced IP from abroad for a value of 200. With this IP royalties and licensing fees are produced in period 3 for a value of 40. Because of this additional output GDP is higher in period 3 than in the previous periods. In period 2 higher investments and the low trade balance stand out.

The influence on GNI of the enterprise depends on two factors. On the one side whether or not the subsidiary is foreign owned. In that case the net profit of will be attributed to the foreign owner as

[4] See for example ESA2010, par. 3.132 and 7.41.

described earlier in the paragraph on corporate inversions. On the other side the value of depreciation and corporate tax which influences net profits. In the example a yearly depreciation percentage of 10% and a tax tariff of 20% is used. The investment in period 2 is assumed to have taken place in the middle of the period, hence it will partly be depreciated in period 2.

Table 3: Example of the purchase of IP (enterprise with a 100% foreign owner (stylised example)

	Period 1	***Period 2***	***Period 3***
Production of R&L services (for export)	0	0	40
Other production (for export)	175	175	175
Intermediate consumption (from imports)	40	40	40
Compensation of employees	60	60	60
Gross operating surplus	75	75	115
Gross domestic product (production approach)	**135**	**135**	**175**
Gross fixed capital formation	0	200	0
Exports	175	175	215
Imports	40	240	40
Gross domestic product (expenditure approach)	**135**	**135**	**175**
Consumption of fixed capital	50	60	70
Corporate tax	5	3	9
Domestic net profit	20	12	36
Net profit from foreign subsidiary			
Profit attributed to foreign owner	20	12	36
Gross national income	**115**	**123**	**139**
Stock of fixed assets			
Opening balance	500	450	590
Gross fixed capital formation	0	200	0
Consumption of fixed capital	50	60	70
Closing balance	**450**	**590**	**520**

GNI is only lightly affected in this example, because the enterprise is foreign owned. In period 2 GNI rises slightly due to the higher depreciation on fixed capital, causing a lower net profit attributed to the foreign owner. In period 3 GNI rises further due to the higher depreciation and the higher corporate tax. In case the enterprise was not foreign owned, the rise in GNI would equal that of GDP. Of course, this equality depends on the fact that the enterprise does not receive profit income from foreign subsidiaries and has no foreign finance costs.

The survey

Data was used from several statistical sources from Statistics Netherlands such as the Structural Business Survey (SBS), statistics on international trade in goods (ITGS) and services (ITSS) and the investment statistics. Generally speaking it can be stated that these sources do not always fully cover the imports and exports of IP and investment or disinvestment of IP. This holds not only for the Netherlands, but for most other countries and is partly the consequence of the way companies register IP in their accounts. Therefore the survey focussed on the production of royalties and licensing services. Information on these services can be obtained more clearly from the statistical sources. However, in this way it cannot be established whether the output is realised with IP purchased abroad or IP produced within the Netherlands. To find the enterprises we are interested

in, enterprises with a strikingly high turnover from royalties and licensing fees were selected. Strikingly high is defined in this survey as more than 200 thousand euros per employed person. This is a relatively high figure, for example in comparison with the turnover per employed person in the research and development industry (about 130 thousand euros in 2017). Output in the R&D industry often concerns ongoing not yet completed research, implying that large profit margins are not likely in this industry, unlike enterprises exploiting existing IP. At the moment there is no precise and international harmonized figure for 'normal' turnover per employed person available for commercial exploitation of existing IP. Furthermore, analysis of the data showed that lowering the limit value doesn't affect the outcome significantly.

A limiting factor in applying this criterion was that in the survey results of SBS royalties and licensing fees are not always explicitly mentioned by responding companies, but often included under 'other operating income'. In cases where high amounts of other operating income were found, additional meta information was used (when available). In addition to this, results of ITSS were used to find out whether these companies reported large amounts of exports of royalties and licensing services.

A second requirement for enterprises to be selected was that the yearly turnover of royalties and licensing fees was at least 10 million euros. This is a somewhat arbitrary limit motivated by the thought that lower turnover usually concerns sublicensing that generates little to no value added for the enterprises involved. Besides that, the values are too low to make a proper distinction between domestically produced IP and IP purchased abroad. Also it is unlikely that such low turnover values are connected with that substantial amounts of purchased foreign IP.

The next step was to select from the group of enterprises with relatively high turnover form royalties and licensing fees those enterprises that are subsidiaries of a foreign multinational. Foreign multinationals as well as Dutch enterprises can own IP that is produced within the Netherlands or purchased abroad. It is also possible for foreign as well as Dutch enterprises to sell IP abroad. This survey however is limited to foreign multinationals. There are several reasons for this choice. First, especially among foreign multinationals there are enterprises that are big enough to potentially distort Dutch macro-economic figures. Second, we have no anecdotal evidence in recent years of substantial trade in IP by Dutch multinationals, purchase nor sale of IP. Finally the distinction between the effects domestically produced and purchased foreign IP is much harder to make; because of the large number of employees of these enterprises in the Netherlands there will not often be a strikingly high turnover from royalties and licensing fees per employee. Therefore, for this specific subject it is not easy to find reliable figures for Dutch multinationals.

Subsequently, it was investigated for the selected enterprises whether the income from royalties and licensing fees was earned with purchased foreign IP. There are quite a number of multinationals in the Netherlands with a large production of royalties and licensing fees based on sublicensing. For those enterprises the production value of royalties and licensing fees is almost matched by the intermediate consumption of these services, leading to no or very little value added from these activities. To distinguish between these two types of enterprises information from, amongst others, available annual reports of these enterprises was used. For those enterprises that have purchased foreign IP the way the information from different statistical sources was processed in the national accounts was examined.

The selected enterprises are diverse and often also have, besides the exploitation of royalties and licenses, other productive activities. For those enterprises a cost structure - remuneration of

employees and intermediate consumption belonging to the exploitation of IP – has to be estimated. The estimate is partly based on ratios that can be obtained from enterprises that are relatively homogeneous in their production. Besides that, for a number of enterprises specific estimates have been made using available SBS information. The estimates for the remuneration of employees are used to estimate the effects on the Dutch labour income share. The effects on labour productivity is estimated by combining the estimated wages and salaries with microdata on the number of labour years of the enterprises involved.

For the estimation of investment and capital stock the R&D-survey, Investment survey and SBS are used. Information from these sources does not give a correct and complete picture of investment and capital stock for all enterprises as far as relocation of IP from abroad is concerned. For those enterprises with incomplete data, the investment figures are estimated by using the expenditures of these enterprises on R&D and software known from the source data. The capital stock for the year 2010 for these enterprises is estimated using the proportion of these enterprises in the total R&D and software investments. This proportion is applied to the Dutch capital stock for R&D and software for 2010. Based on this estimation for the capital stock for 2010 the capital stock for the subsequent years is calculated using the accumulated figures of investment, depreciation and revaluations. Since the exact depreciation percentages for the IP involved is unknown, a weighted percentage is calculated belonging to the industries or the enterprises. To arrive at the total investment, depreciation and capital stock the data for the enterprises for which the required information is fully available is added.

Estimations for imports and exports consist of two elements. On the one side information for the enterprises involved from ITSS is available, on the other side this information has to be consistent with the estimated information for production, intermediate consumption and investment as described above. An investment is associated with imports, a disinvestment with exports. Production and intermediate consumption also influence imports and exports. It is of course possible that an enterprise uses purchased IP to deliver royalties and licensing fees to domestic users, but that will be at the expense of the import of royalties and licensing fees that would have taken place otherwise. Intermediate consumption can partly be obtained from a domestic supplier. The figures for the enterprises involved show that this can only be the case for limited amounts. For presentation purposes, i.e. to assure that GDP according to the production method equals GDP according to the final expenditures it was decided to present the data as if the intermediate consumption is fully imported.

4. Results and conclusions

Corporate inversions

In the table below the effects of corporate inversions are shown on the Balance of primary income and GDP as published in the Dutch national accounts for the period 2010-2017.

Up to 2012 the effect is relatively small, but after that the size increases. This is partly caused by the rising number of corporate inversions in recent years and partly because profitability of foreign subsidiaries of the multinationals under investigation has increased during this time period[5].

[5] Corporate inversions of listed enterprises are not a recent phenomenon, and the effects of it existed already before 2010. For the composition of National accounts Statistics Netherlands has devoted extra attention to the compilation of data for this group of enterprises since 2010.

	2010	2011	2012	2013	2014	2015	2016	2017
Balance of primary income with the rest of the world (ROW)	1876	9099	11179	8945	-1662	529	-10475	5565
Effect of corporate inversions	607	331	112	3664	4461	5922	6002	9051
Balance of primary income with the ROW, excl. of corporate inversions	**1269**	**8768**	**11067**	**5281**	**-6123**	**-5393**	**-16477**	**-3486**
Gross national income (published)	641063	659458	664145	669408	669898	690537	697862	743711
Effect of corporate inversions	607	331	112	3664	4461	5922	6002	9051
Gross national income, excl. of corporate inversions	**640456**	**659127**	**664033**	**665744**	**665437**	**684615**	**691860**	**734660**

A number of the enterprises involved receive, next to profits from foreign subsidiaries, also profits from productive activities within the Dutch economy. The available data does not allow us to establish the effects of corporate inversions on productive activities that already existed in the Netherlands before the inversion took place. It can however be stated that the major part of the value added involved was generated independent of the corporate inversions. For that reason, no further GDP effects resulting from the corporate inversions are estimated.

Over the past years a number of enterprises came to the Netherlands through a corporate inversion. This is not a one-way process. Although no head offices of enterprises disappeared from the Netherlands during the period under survey, in 2018 three enterprises moved their head office abroad. This influences GNI as from 2018.

Corporations with intellectual property relocated to the Netherlands.
The following table presents the influence on the figures as presented in the current National accounts of foreign enterprises that relocated IP to the Netherlands and exploit this IP from the Netherlands in the period 2010-2017[6]. Most figures are in million euros. For labour productivity it concerns value added in current prices expressed in thousand euros per labour year. The labour income share concerns the proportion of remuneration of labour of the total income from production in the Netherlands.

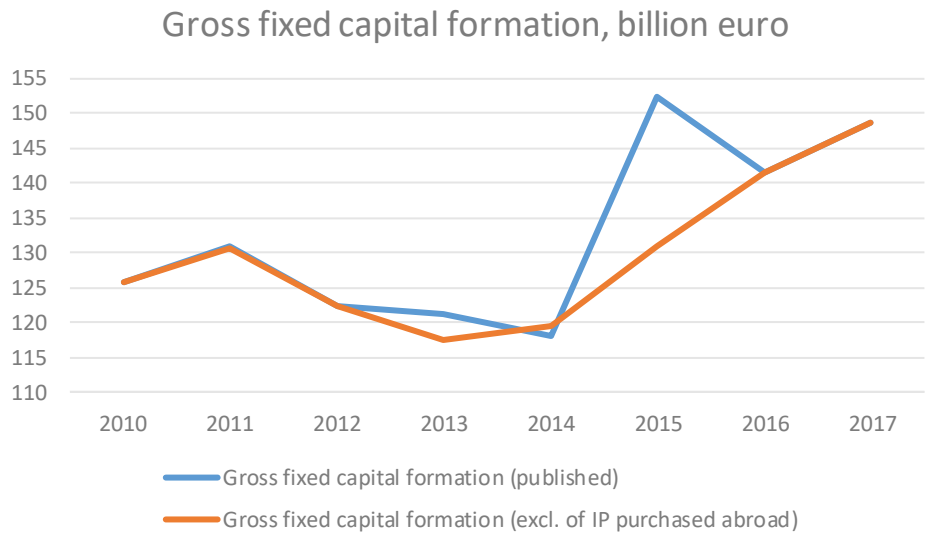
According to the calculations in this study GDP would have been 1.6 billion euros (0.2%) lower if foreign multinationals would not have relocated IP to the Netherlands. In 2017 this amounts to 3.2 billion (0.4%). The influence on GNI is smaller, from 1.2 billion (0,2%) in 2010 to 1,5 billion (0,2%) in 2017.

The reason for the smaller effect on GNI compared with GDP is that the analysis only concerns enterprises that are foreign owned. As explained in the statistical background the profits made by subsidiaries are, in conformity with the international statistical guidelines, attributed to the foreign owner. The effect on GNI equals the sum of depreciation on IP, the wages paid to labour connected with the exploitation of IP and the corporate profit tax paid.

[6] Relocation of IP to the Netherlands already took place in some years before 2010. Nevertheless, it is a relatively new development in the Dutch economy.

	2010	2011	2012	2013	2014	2015	2016	2017
Gross domestic product (published)	639187	650359	652966	660463	671560	690008	708337	738146
Effect of Intellectual Property purchased abroad	1559	1910	2456	2963	3279	3689	3390	3223
Gross domestic product (excl. of IP purchased abroad)	**637628**	**648449**	**650510**	**657500**	**668281**	**686319**	**704947**	**734923**
Exports (published)	446176	491041	519130	527581	541129	570353	563377	615553
Effect of Intellectual Property purchased abroad	3338	3841	4643	6869	7457	14017	6159	7769
Exports (excl. of IP purchased abroad)	**442838**	**487200**	**514487**	**520712**	**533672**	**556336**	**557218**	**607784**
Imports (published)	394496	435537	455542	460137	466572	518594	491044	536163
Effect of Intellectual Property purchased abroad	1927	2127	2300	7663	2867	31745	2838	4625
Imports (excl. of IP purchased abroad)	**392569**	**433410**	**453242**	**452474**	**463705**	**486849**	**488206**	**531538**
Gross fixed capital formation (published)	125898	130965	122505	121237	118138	152533	141675	148670
Effect of Intellectual Property purchased abroad	149	196	112	3757	-1311	21417	69	79
Gross fixed capital formation (excl. of IP purchased abroad)	**125749**	**130769**	**122393**	**117480**	**119449**	**131116**	**141606**	**148591**
Consumption of fixed capital (published)	109791	110021	111232	113167	114366	115742	117912	121452
Effect of Intellectual Property purchased abroad	1167	1284	1296	1773	1857	1263	1216	1215
Consumption of fixed capital (excl. of IP purchased abroad)	**108624**	**108737**	**109936**	**111394**	**112509**	**114479**	**116696**	**120237**
Stock of fixed assts (published)	2035026	2037141	2040820	2046654	2031287	2043628	2058059	2098557
Effect of Intellectual Property purchased abroad	9134	8517	7816	10838	7548	28746	27645	26560
Stock of fixed assts (excl. of IP purchased abroad)	**2025892**	**2028624**	**2033004**	**2035816**	**2023739**	**2014882**	**2030414**	**2071997**
Labour productivity (nace A-U, excl L, O, P, T), uncorrected	77,2	78,1	79,8	81,3	82,2	83,2	83,0	84,2
Effect of Intellectual Property purchased abroad	0,2	0,3	0,4	0,5	0,5	0,6	0,5	0,5
Labour productivity (nace A-U, excl L, O, P, T; excl. of IP purchased abroad)	**76,9**	**77,8**	**79,4**	**80,8**	**81,6**	**82,6**	**82,5**	**83,7**
Labour income share (nace A-U, excl. O and P, published)	73,2	73,5	74,2	74,1	74,5	72,8	73,9	73,3
Effect of Intellectual Property purchased abroad	-0,1	-0,1	-0,2	-0,2	-0,2	-0,4	-0,3	-0,3
Labour income share (nace A-U, excl. O and P, excl. of IP purchased abroad)	**73,3**	**73,6**	**74,4**	**74,3**	**74,7**	**73,2**	**74,2**	**73,6**
Balance of primary income with the ROW (published)	1876	9099	11179	8945	-1662	529	-10475	5565
Effect of Intellectual Property purchased abroad	-369	-397	-1111	-1088	-1254	-2187	-1933	-1772
Balance of primary income with the ROW (excl. of IP purchased abroad)	**2245**	**9496**	**12290**	**10033**	**-408**	**2716**	**-8542**	**7337**
Gross national income (published)	641063	659458	664145	669408	669898	690537	697862	743711
Effect of Intellectual Property purchased abroad	1190	1512	1345	1875	2025	1501	1457	1451
Gross national income (excl. of IP purchased abroad)	**639873**	**657946**	**662800**	**667533**	**667873**	**689036**	**696405**	**742260**

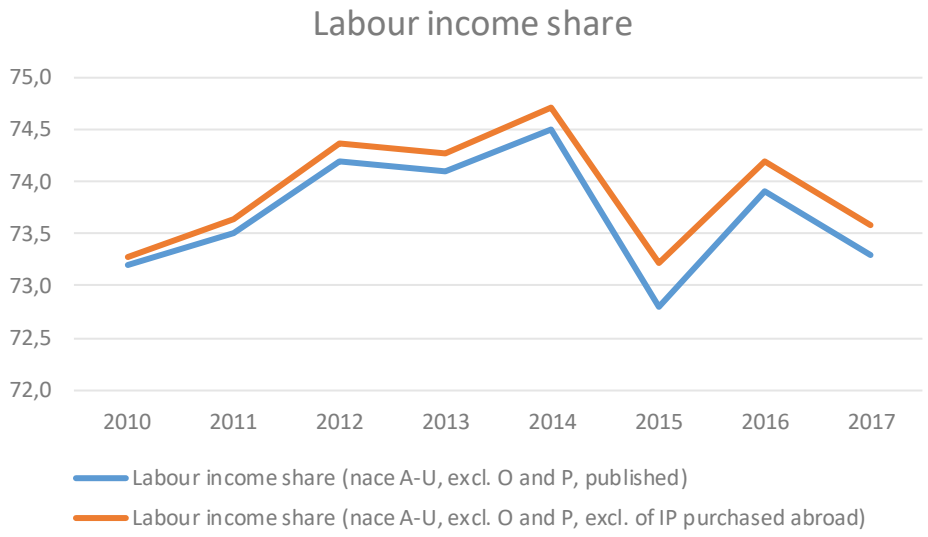
Overall, the effects on GDP and GNI based on this study are fairly moderate. The effect on the capital stock is also limited. Effects on gross investment and imports and exports of goods and services as can be seen from the two charts below.



In the years 2013, 2014 and 2015 there were substantial movements of IP that can be attributed for the major part to a resident subsidiary of a large multinational.[7]

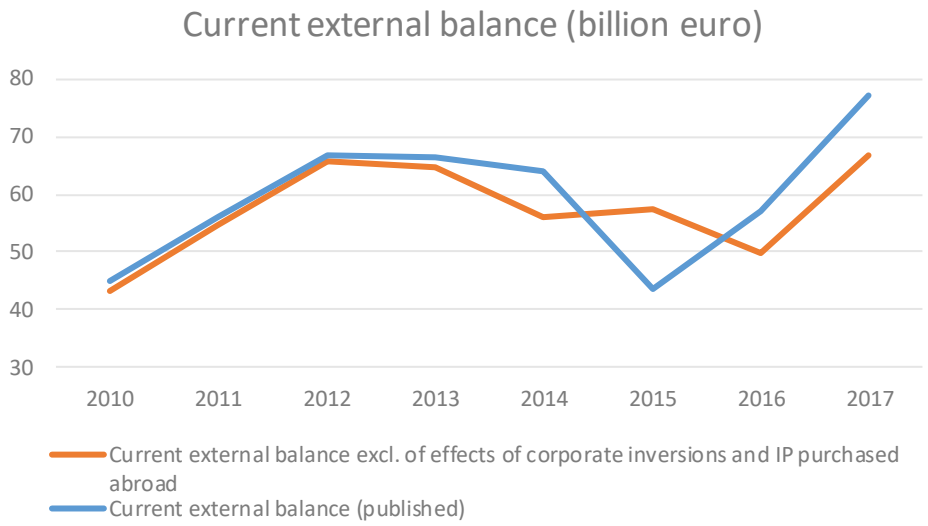
As far as imports and exports are concerned, the remark can be made that the enterprises concerned not only export royalties and licensing services, but also import these services. The import of royalties and licensing services does not necessarily belong to the exploitation of own IP. With the available source information it is not possible to distinguish between cases were output of royalties and licensing fees consists of a combination of output from own IP and output from sublicenses from other IP and cases were it concerns separate products. The values of import and export of royalties and licensing fees of the enterprises are therefore fully included here. Despite the fact that these values are not necessarily fully related to the exploitation of own IP, the flows do reflect a complete picture of the impact of the enterprises involved on imports and exports.
Correction for exploitation of purchased foreign IP leads to 0.3% higher labour income share for the Netherlands. Labour productivity is somewhat lower. The highest effect was in 2015 for the labour income share as well as for labour productivity. Because the exploitation of IP requires relatively little labour input the development of both figures is almost fully determined by the lowering of the gross operating surplus.

[7] See: National accounts, Benchmark revision 2015, May 2018
https://www.cbs.nl/en-gb/publication/2018/21/national-accounts-2015-benchmark-revision



The delineation of the corporate sector is defined somewhat differently for the labour income share than for labour productivity, in conformity with the agreements between Statistics Netherlands and main users of the data. In the case of labour income share real estate activities and activities of households as employers are included, whereas these are not included in the case of labour productivity.

The effects of corporate inversions and purchased foreign IP on the current external balance of the Netherlands are shown below. Especially in recent years the current external balance would have been lower without the effects of these two phenomena.



In judging these results it is good to keep in mind that the effects presented here can be regarded as lower limits. In the study several pragmatic choices were made to quantify the effects of relocated foreign IP to the Netherlands. The choices have mostly been made on substantive grounds, but were also necessary due to limitations in the available data. The study was focussed at enterprises with substantial turnover of royalties and licensing fees, but with relatively few employees. For enterprises with a substantial number of employees in the Netherlands

identification of royalties and licensing fees produced with purchased foreign IP was not possible with the method applied. The choices made in this study could lead to an underestimation; This is particularly the case for the following choices made in the study:

- Enterprises with less than 10 million turnover of royalties and licensing fees are not analysed
- Enterprises with less than 0.2 million turnover per employee are not analysed, unless there was a specific reason to analyse them
- The research is focussed on enterprises that are foreign owned.

Foreign IP purchased by enterprises that are, as a consequence of these choices, not included in this study can of course be of influence. The precise effect is difficult to estimate, due to the limitations of the available data. However, it can be stated that there is no reason to believe that the estimations presented here would be substantial higher if the choices made would be altered.

Further, it should be mentioned that the study is based on several assumptions which implies that the presented results have a margin of uncertainty. This concerns among others assumptions on the division of turnover in turnover based on purchased IP and turnover based on IP produced in the Netherlands and assumptions on the division of operating expenses. Enterprises often are, next to the exploitation of IP, involved in other activities, making it difficult to divide operating expenses unambiguously over the activities. The same problems exist for the division of corporate tax. Uncertainties also exist for the estimation of investment, capital stock and import and export. Such problems affect the accuracy of the results, but the influence is limited when the results are looked upon from a macroeconomic perspective.

5. Presentation of results in volume terms

All figures in this study concern nominal values. By using adequate prices it is possible to calculate results in constant prices. Price indices for two product groups are of vital importance, i.e. royalties and licensing fees and inter-company services. For both product groups it is difficult to find correct and reliable price-indices due to the unique character of such services. As a rule, for the deflation of these services in national accounts the general price development of the Dutch economy is used. Differences between current prices of two consecutive years will to a considerable extent result in volume changes.

6. Summary

Multinational corporations have a large impact on the Dutch economy. Two specific aspects that can result from the activities of multinational corporations are corporate inversions and the relocation of intellectual property to the Netherlands. On the request of the Ministry of Finance and the Ministry of Social Affairs and Employment, Statistics Netherlands has investigated to what extent the Dutch macroeconomic data are impacted by these two aspects. To do this Statistics Netherlands has analysed the microdata it has at its disposal and has compiled estimates of the impact of both aspects on Dutch macroeconomic data for the time period 2010 to 2017. The conclusion from the investigation is that the two aspects each have an impact on the Dutch macroeconomic data.

However, from the perspective of the overall size of the Dutch economy the impact is fairly modest.

The impact of corporate inversions has increased in recent years leading to an impact of 1.2% of gross national income in 2017. The impact from the relocation of intellectual property is more stable over time when looking at gross domestic product and gross national income. In 2017 the impact is 0.4% of gross domestic product and 0.2% of gross national income.

Appendix

Effect of corporate inversions expressed in percentages.

The table below shows the nominal growth rates of the macro-economic variables presented and the effect of corporate inversions on these growth rates.

	2010	2011	2012	2013	2014	2015	2016	2017
Balance of primary income with the rest of the world (ROW), published	-	385%	23%	-20%	-119%	-132%	-2080%	-153%
Effect of corporate inversions	-	-206%	-3%	32%	97%	-120%	-2286%	-74%
Balance of primary income with the ROW, excl. of corporate inversions	**-**	**591%**	**26%**	**-52%**	**-216%**	**-12%**	**206%**	**-79%**
Gross national income (published)	-	2,87%	0,71%	0,79%	0,07%	3,08%	1,06%	6,57%
Effect of corporate inversions	-	-0,05%	-0,03%	0,53%	0,12%	0,20%	0,00%	0,38%
Gross national income, excl. of corporate inversions	**-**	**2,92%**	**0,74%**	**0,26%**	**-0,05%**	**2,88%**	**1,06%**	**6,19%**

Effect of relocation of foreign intellectual property to the Netherlands expressed in percentages.

The table below shows the nominal growth rates of the macro-economic variables presented and the effect relocation of intellectual property to the Netherlands on these growth rates. In the cases of labour productivity and labour income share these figures show the percentage change of these ratio's.

	2010	2011	2012	2013	2014	2015	2016	2017
Gross domestic product (published)	-	1,75%	0,40%	1,15%	1,68%	2,75%	2,66%	4,21%
Effect of Intellectual Property purchased abroad	-	0,05%	0,08%	0,07%	0,04%	0,05%	-0,06%	-0,04%
Gross domestic product (excl. of IP purchased abroad)	**-**	**1,70%**	**0,32%**	**1,07%**	**1,64%**	**2,70%**	**2,71%**	**4,25%**
Exports (published)	-	10,06%	5,72%	1,63%	2,57%	5,40%	-1,22%	9,26%
Effect of Intellectual Property purchased abroad	-	0,04%	0,12%	0,42%	0,08%	1,15%	-1,38%	0,19%
Exports (excl. of IP purchased abroad)	**-**	**10,02%**	**5,60%**	**1,21%**	**2,49%**	**4,25%**	**0,16%**	**9,07%**
Imports (published)	-	10,40%	4,59%	1,01%	1,40%	11,15%	-5,31%	9,19%
Effect of Intellectual Property purchased abroad	-	0,00%	0,02%	1,18%	-1,08%	6,16%	-5,59%	0,31%
Imports (excl. of IP purchased abroad)	**-**	**10,40%**	**4,58%**	**-0,17%**	**2,48%**	**4,99%**	**0,28%**	**8,88%**
Gross fixed capital formation (published)	-	4,02%	-6,46%	-1,04%	-2,56%	29,11%	-7,12%	4,94%
Effect of Intellectual Property purchased abroad	-	0,03%	-0,05%	2,98%	-4,23%	19,35%	-15,12%	0,00%
Gross fixed capital formation (excl. of IP purchased abroad)	**-**	**3,99%**	**-6,41%**	**-4,01%**	**1,68%**	**9,77%**	**8,00%**	**4,93%**
Consumption of fixed capital (published)	-	0,21%	1,10%	1,74%	1,06%	1,20%	1,87%	3,00%
Effect of Intellectual Property purchased abroad	-	0,11%	0,00%	0,41%	0,06%	-0,55%	-0,06%	-0,03%
Consumption of fixed capital (excl. of IP purchased abroad)	**-**	**0,10%**	**1,10%**	**1,33%**	**1,00%**	**1,75%**	**1,94%**	**3,03%**
Stock of fixed assts (published)	-	0,10%	0,18%	0,29%	-0,75%	0,61%	0,71%	1,97%
Effect of Intellectual Property purchased abroad	-	-0,03%	-0,04%	0,15%	-0,16%	1,05%	-0,06%	-0,08%
Stock of fixed assts (excl. of IP purchased abroad)	**-**	**0,13%**	**0,22%**	**0,14%**	**-0,59%**	**-0,44%**	**0,77%**	**2,05%**
Labour productivity (nace A-U, excl L, O, P, T), uncorrected	-	1,14%	2,21%	1,84%	1,12%	1,28%	-0,26%	1,48%
Effect of Intellectual Property purchased abroad	-	0,07%	0,11%	0,10%	0,06%	0,06%	-0,07%	-0,06%
Labour productivity (nace A-U, excl L, O, P, T; excl. of IP purchased abroad)	**-**	**1,07%**	**2,10%**	**1,74%**	**1,06%**	**1,21%**	**-0,18%**	**1,54%**
Labour income share (nace A-U, excl. O and P, published)	-	0,41%	0,95%	-0,13%	0,54%	-2,28%	1,51%	-0,81%
Effect of Intellectual Property purchased abroad	-	-0,09%	-0,04%	-0,01%	-0,04%	-0,29%	0,17%	0,02%
Labour income share (nace A-U, excl. O and P, excl. of IP purchased abroad)	**-**	**0,50%**	**0,99%**	**-0,13%**	**0,58%**	**-2,00%**	**1,35%**	**-0,83%**
Balance of primary income with the ROW (published)	-	385%	23%	-20%	-119%	-132%	-2080%	-153%
Effect of Intellectual Property purchased abroad	-	62%	-7%	-2%	-15%	634%	-1666%	33%
Balance of primary income with the ROW (excl. of IP purchased abroad)	**-**	**323%**	**29%**	**-18%**	**-104%**	**-766%**	**-414%**	**-186%**
Gross national income (published)	-	2,87%	0,71%	0,79%	0,07%	3,08%	1,06%	6,57%
Effect of Intellectual Property purchased abroad	-	0,05%	-0,03%	0,08%	0,02%	-0,09%	-0,01%	-0,01%
Gross national income (excl. of IP purchased abroad)	**-**	**2,82%**	**0,74%**	**0,71%**	**0,05%**	**3,17%**	**1,07%**	**6,58%**