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Measuring global activity of multinational corporations

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Outline

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- National accounts and global firms
- Three stylised examples of measurement issues
 - Classical measurement problems
 - Redomiciliation
 - Mobility of intangible assets across countries
- Irish experience
- Quantitative importance of measurement issues
 - Financialisation of the current account
 - Corporate profits and cash holdings
- Conclusions



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Motivation

- Increasing integration of the global economy, implies growing tension between the nature of economic activity and its measurement system
- Policies determined by economic activity measured at the national level
 - Typical unit of analysis is the economic area with economic activity measured within the economic area and in terms of transactions with other economic areas
 - **But.....** companies, their owners and economic activity are global dispersed



Existing measurement framework of economic activity

- Key concept in national accounting framework is **residence**
 - Legal concept denoting relationship between entity and location
 - Defined as “the economic territory with which it has the strongest connection, expressed as its centre of predominant economic interest”
- Similar concept is **domicile**
 - Indicative of greater permanence
 - Often used to denote a firm’s location of headquarters, and has tax implications
- **Global context:** two perspectives as distinct but integrated frameworks from an accounting, statistical, legal & regulatory angle
 - International statistical framework allocates economic agents to the country in which they are deemed to **reside**
 - An alternative approach is to have a consolidated view, which assigns economic entities to the country of **headquarters of the parent** institution (Avdjiev et al. 2016, Bénétrix et al. 2017, McCauley et al. 2017) - more closely aligned with notion of **domicile**



Increasingly companies are global via ownership and economic activity

- **Complexity** of multinational firms & distribution of their activities **across traditional borders**, complicates the task of capturing economic activity within traditional national accounts (Tissot 2016)
- Evidence suggests that the activities of global firms have **outgrown** some features of the existing national accounting framework (Lane 2015, 2017, Forbes et al. 2017, Guvenen et al. 2017)
- Understanding macroeconomic developments, financial price movements or public policies on corporate decisions requires arrangement of group units across the world into **corporate group** on basis of ownership and control



Brief overview of current account framework

$$CA_t = NX_t + NPI_t + NSI_t$$

Components of the current account (CA):

NX - measures the **trade** in merchandise and services

NPI - income inflows and outflows and current transfers of an economy's residents vis-à-vis non-residents

-decomposed further into compensation of employees, **investment income** and other income (rent and taxes and subsidies on products & production)

- **investment income** related to the income generated on international financial assets and liabilities

NSI - net secondary income, which accounts for unreciprocated payments and receipts (for example, transfers between governments and international organisations such as emergency aid and technical assistance)



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Three stylised examples of measurement issues



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1. Classical measurement issues

■ Offshoring

- Movement of business processes across countries through a foreign subsidiary or unrelated firm through a contract agreement
- Applies to manufacturing or to support services (ex. accounting or back office functions)



1. Classical measurement issues: national accounts and global firms

Effect of offshoring

Table 1

Pre-offshoring				
	A	B	C	D
	HQ		Manufacturer	Rest of the world
Exports	110	0	0	60
Imports	60	0	0	110
<i>Trade balance</i>	+50	0	0	-50
Current account balance	+50	0	0	-50
Post-offshoring				
	A	B	C	D
	HQ		Manufacturer	Rest of the world
Exports	0	0	110	60
Imports	0	0	60	110
<i>Trade balance</i>	0	0	+50	-50
Primary income credit	50	0	0	0
Primary income debit	0	0	50	0
<i>Net primary income</i>	+50	0	-50	0
Current account balance	+50	0	0	-50

Imports and exports in this example refer to goods. The imports and exports of services are assumed to be zero. Primary income reflects income related to direct investment only. Compensation of employees, portfolio investment and other investment income, and NSI are assumed to be zero. Local (labour-related and other) costs of the subsidiary in country C are assumed to be zero. +/- sign indicates a positive/negative balance in the trade account, a surplus/deficit balance for the current account and net receipts and net payments on the primary income account, respectively.



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2. Redomiciliation

- Form of financial engineering associated with changing the location of the headquarters
- Provides challenges in the measurement of the investment income component of the current account



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2. Redomiciliation

Effect of redomiciliation Table 2

	Pre-redomiciliation			
	A	B	C	D
	Original HQ	New HQ	Manufacturer	Rest of the world
Exports	0	0	110	60
Imports	0	0	60	110
<i>Trade balance</i>	0	0	+50	-50
Direct investment income credit	50	0	0	0
Direct investment income debit	0	0	50	0
Portfolio investment income credit	0	0	0	0
Portfolio investment income debit	0	0	0	0
<i>Net primary income</i>	+50	0	-50	0
Current account balance	+50	0	0	-50
	Post-redomiciliation			
	A	B	C	D
	Original HQ	New HQ	Manufacturer	Rest of the world
Exports	0	0	110	60
Imports	0	0	60	110
<i>Trade balance</i>	0	0	+50	-50
Direct investment income credit	0	50	0	0
Direct investment income debit	0	0	50	0
Portfolio investment income credit	10	0	0	0
Portfolio investment income debit	0	10	0	0
<i>Net primary income</i>	+10	+40	-50	0
Current account balance	+10	+40	0	-50

Imports and exports in this example refer to goods. The imports and exports of services are assumed to be zero; compensation of employees, other investment income, and NSI are assumed to be zero. Local (labour-related and other) costs of the subsidiary in country C are assumed to be zero. +/- sign indicates a positive/negative balance in the trade account, a surplus/deficit balance for the current account and net receipts and net payments on the primary income account, respectively.



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3. Movement of intangible assets

- The rise of the **knowledge economy** and the use of intellectual property (IP) as capital assets in the production of technology have also had a critical impact on the measurement and interpretation of GDP and balance of payments statistics
- IP is an example of an **intangible asset** - including research and development, copyrights and computer software
- According to the latest SNA framework (EC-IMF-OECD-UN-WB 2009), the booking of exports and income depends on the **economic ownership** location of IP
 - Relocation of IP across countries can change the geographical location where exports and income are booked recorded
 - Form of financial engineering is no longer predominantly channelled through offshore financial centres - also affects the national accounts of advanced economies (for example Ireland, Switzerland, the United Kingdom and the United States)



3. Movement of intangible assets

Effect of external manufacturing and capital asset relocation on current account Table 3

Pre-relocation of capital asset				
	A HQ	B New location of IP	C Manufacturer	D Rest of the world
Goods exports	110	0	0	80
Goods imports	80	0	0	110
Services exports	10	0	20	0
Services imports	20	0	10	0
<i>Trade balance</i>	+20	0	+10	-30
Primary income credit	5	0	0	0
Primary income debit	0	0	5	0
<i>Net primary income</i>	+5	0	-5	0
Current account balance	+25	0	+5	-30
Post-relocation of capital asset				
	A HQ	B New location of IP	C Manufacturer	D Rest of the world
Goods exports	0	110	0	80
Goods imports	0	80	0	110
Services exports	0	10	20	0
Services imports	0	20	10	0
<i>Trade balance</i>	0	+20	+10	-30
Primary income credit	25	0	0	0
Primary income debit	0	20	5	0
<i>Net primary income</i>	+25	-20	-5	0
Current account balance	+25	0	+5	-30

Compensation of employees, other investment income, and NSI are assumed to be zero. +/- sign indicates a positive/negative balance in the trade account, a surplus/deficit balance for the current account and net receipts and net payments on the primary income account, respectively.



Irish experience



Irish experience

- July 2016 - publication of significant revisions to macroeconomic statistics
- 2015 National Income and Expenditure results for Ireland
 - Real GDP growth - 26%
 - Real GNI growth - 19%
- Production consistent with international standards - SNA 2008 and ESA 2010
- **Results dominated by globalisation:** (i) residential relocation of global firms corporate structures to Ireland, (ii) relocation of intangible assets (intellectual property), and (iii) globalisation of production processes



Escalation of globalisation measurement challenges - redomiciling

- Shifts in centre of economic interest (resident units) through relocation (headquartering/redomiciling) of corporate balance sheets intensified in 2010
- Re-allocation of headquarters to Ireland via re-domiciled & corporate inversions
 - Increase in net factor flows from abroad - overstatement of GNI. Retained earnings ultimately accrue to foreign shareholders via capital gains and dividend payments
 - Increase in outward direct investment recorded in the financial account of BoP
 - Increase in external assets and external liabilities in IIP. Relocation recorded as an "other change"



Escalation of globalisation measurement challenges - relocation of intangible assets

- EUR 300bn increase in gross capital stock of fixed assets in 2015Q1
- Reflected transfer of intellectual property to Ireland
- Equivalent increase in direct investment liabilities in IIP. Transfer recorded in "other changes" and resulted in increase in intercompany debt liabilities
- GDP & GNI affected due to increase in fixed assets implying increase in depreciation adjustments
- Net exports affected
 - Increase in service exports - Irish resident company charges foreign companies fees to produce the patented product.
 - Decrease in service imports - Irish resident company no longer pays fee for use of IP



Escalation of globalisation measurement challenges - external contract manufacturing

- Occurs when an Irish company contracts a company abroad to manufacture products on its behalf
- Related output and employment associated with the increased capital stock (EUR 300bn) took place outside Ireland
- Changes in national accounting framework link output and exports more closely with ownership than geography - resulting in the production and net exports being recorded as Irish

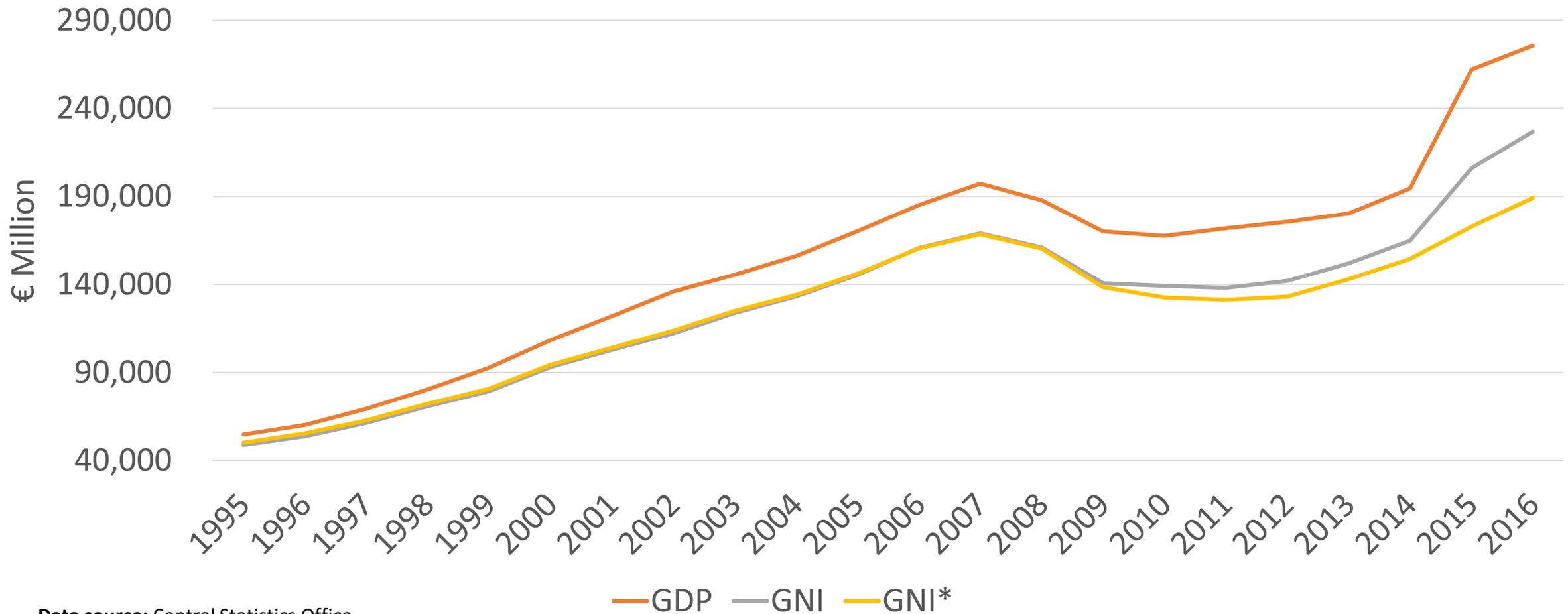


Towards a solution

- Established national Economic Statistics Review Group in 2016, chaired by Governor Philip Lane
- Central recommendation was proposal to compile adjusted level indicator of domestic economy
- Remove large and volatile items from GNI
 - Depreciation on foreign-owned domestic capital assets
 - Retained earnings of re-domiciled PLCs
- GNI* (Lane 2017)



GNI* = GNI adjusted for depreciation on foreign-owned domestic capital assets and retained earnings of re-domiciled PLCs



Data source: Central Statistics Office



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Quantitative importance of measurement issues



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Financialisation of current account I

- Increase in global external financial openness accelerated between mid-1990s and GFC driven by financial liberalisation and innovation (Lane and Milesi-Ferretti, 2018)
- Focus on trade balance as measurement of external imbalances ignores the dynamics of international trade in financial assets (Lane 2015, Lane and Milesi-Ferretti 2018, Forbes et al. 2017)
- Despite post-GFC contraction in external assets and liabilities, related primary income flows have increased in importance relative to trade flows

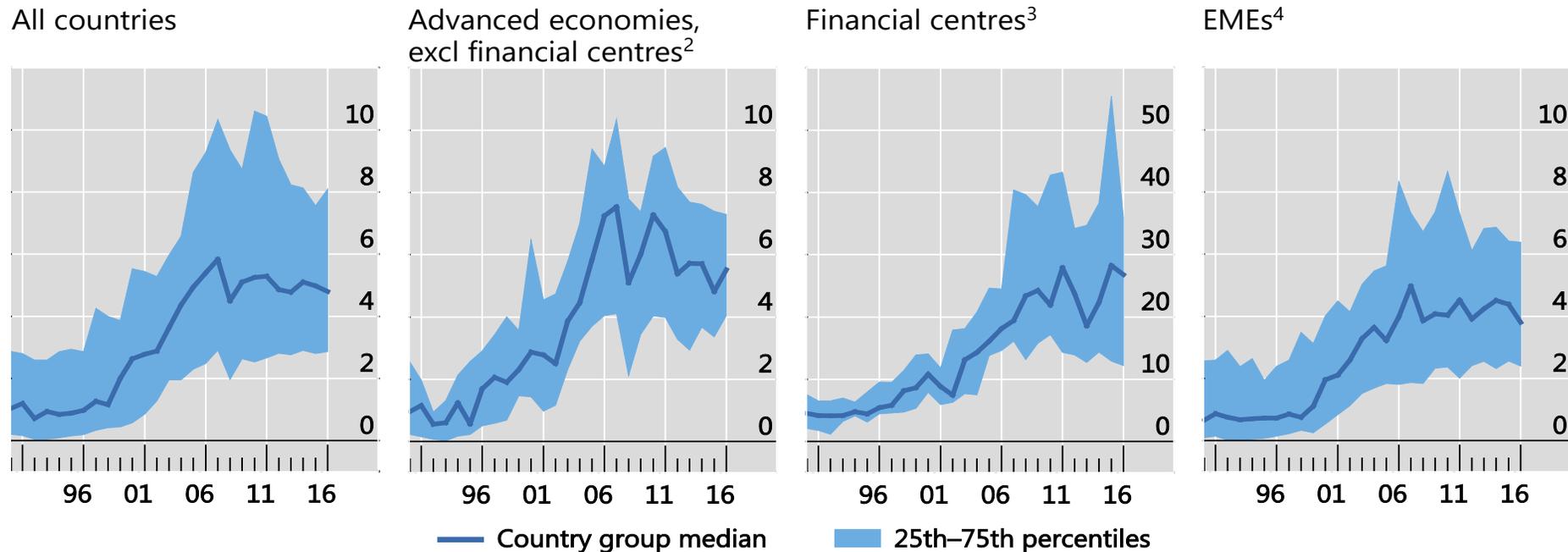


Financialisation of current account II

- Direct investment component of primary income has increased in importance since 1990s – at global level, and across major country groups, particularly for financial centres.

Gross direct investment income flows as a percentage of gross trade flows¹

Graph 1



¹ (Direct investment income, debit + direct investment income, credit) / (exports + imports). ² AT, AU, CA, DE, DK, EE, ES, FI, FO, FR, GR, IS, IT, JP, LT, LV, NO, NZ, PT, SE, SI, SK and US. ³ BE, CH, CY, GB, IE, LU, MT and NL. ⁴ AO, AR, AZ, BD, BG, BR, BY, CL, CN, CO, CR, CZ, DO, DZ, EC, EG, ET, GT, HR, HU, ID, IL, IN, IQ, IR, KE, KR, KW, KZ, LK, MA, MM, MX, MY, NG, OM, PE, PH, PK, PL, RO, RU, SA, SD, TH, TR, UA, UY, VE and



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Sources: Lane and Milesi-Ferretti (2017); IMF, *Balance of Payments Statistics*.

Financialisation of current account III

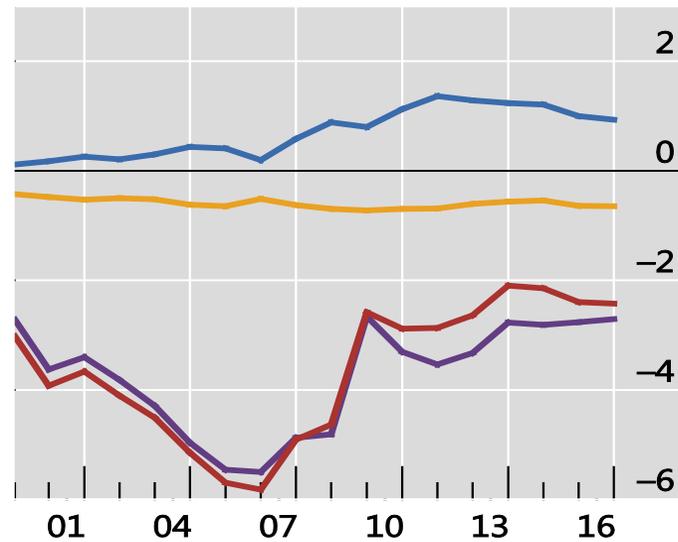
- Relation between primary income component vs trade balance component of current account can vary across countries

Decomposing the evolution of the current account

Selected countries' balance of payments components, as a percentage of GDP

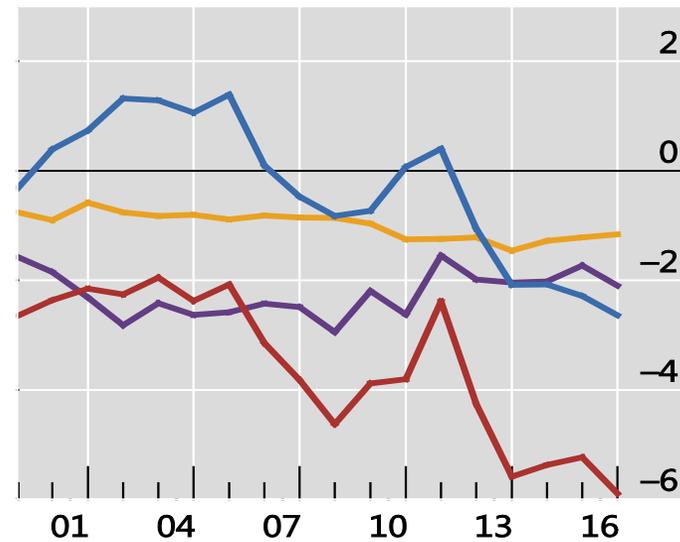
Graph 2

United States



— Current account balance

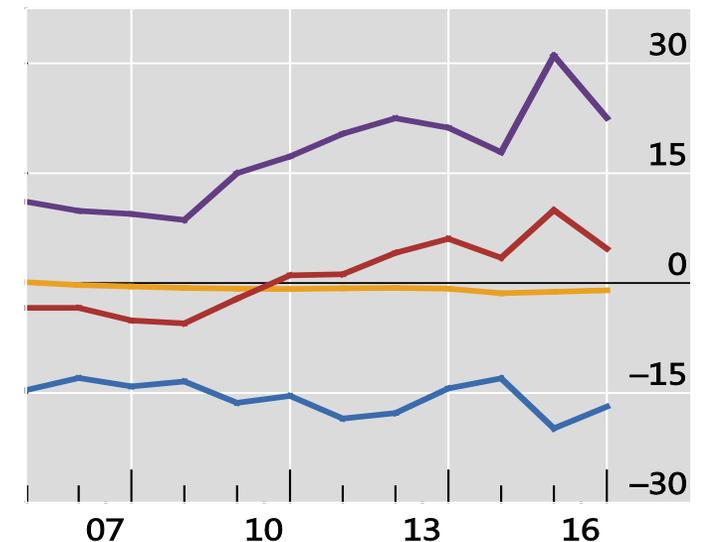
United Kingdom



— Net primary income

— Net secondary income

Ireland



— Trade balance

Sources: IMF, *Balance of Payments Statistics* and *World Economic Outlook*.

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Tracking corporate profits and cash holdings I

- Increased importance of direct investment income (DII) flows suggests global firms' foreign profits warrant attention
- 3 types of corporate profits
 1. Profits of domestically headquartered corporates operating in the home country are recorded as part of both domestic and national income – profits **do not** affect current account
 2. Profits of **domestically headquartered corporates operating abroad** contribute to national income, but are not a part of domestic income – profits recorded as DII-credits and **boost** the current account
 3. Profits of **foreign-owned corporates operating in the home country** contribute to domestic income, but are not a part of national income – profits recorded as DII-debits and have a **negative** impact on the current account



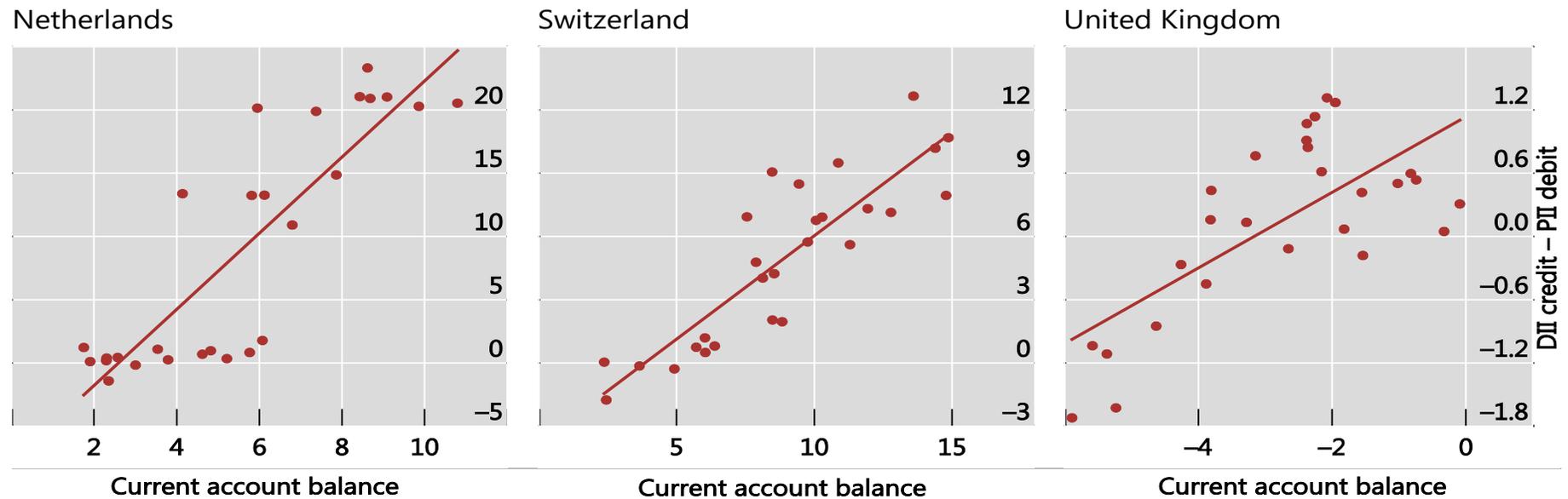
Tracking corporate profits and cash holdings II

- Positive correlation between DII not paid out to shareholders and current account in financial centres

Investment income and current account balances

Annual values 1990–2016, as a percentage of GDP

Graph 3



Notes: (i) DII = direct investment income; PII = portfolio investment income. (ii) 1 Due to data availability constraints, annual values for 1997–2016. 2 Due to data availability constraints, annual values for 1999–2016.

Sources: IMF, Balance of Payments Statistics and World Economic Outlook.



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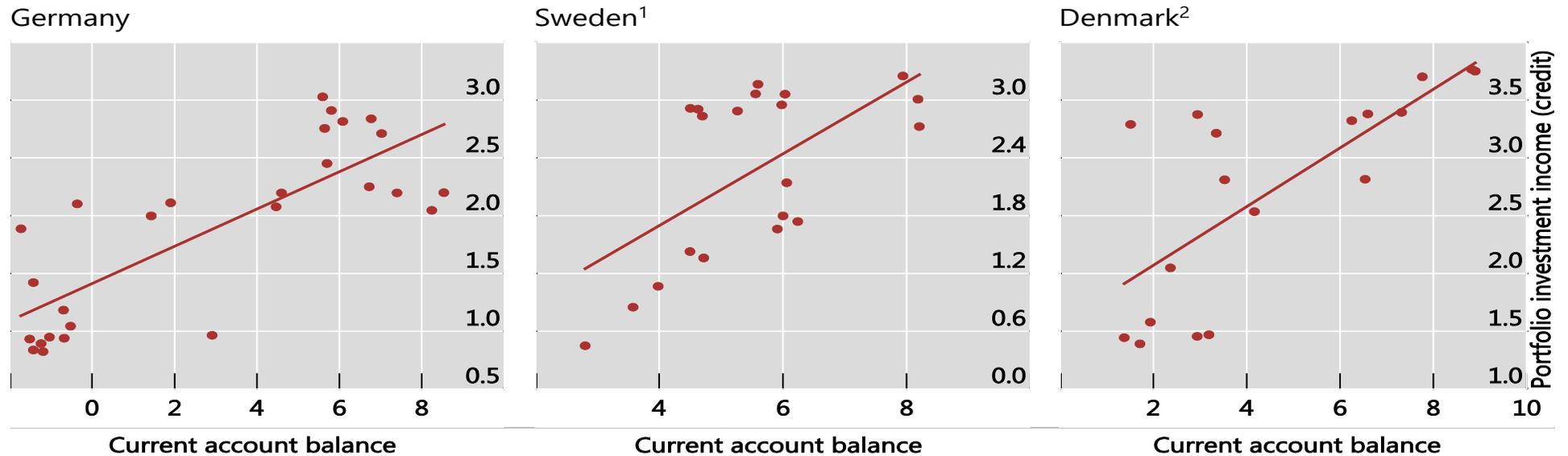
Tracking corporate profits and cash holdings III

- Positive correlation between PII flows (credits) to shareholders and current account in advanced economies

Investment income and current account balances

Annual values 1990–2016, as a percentage of GDP

Graph 3



Notes: (i) DII = direct investment income; PII = portfolio investment income. (ii) 1 Due to data availability constraints, annual values for 1997–2016. 2 Due to data availability constraints, annual values for 1999–2016.

Sources: IMF, Balance of Payments Statistics and World Economic Outlook.



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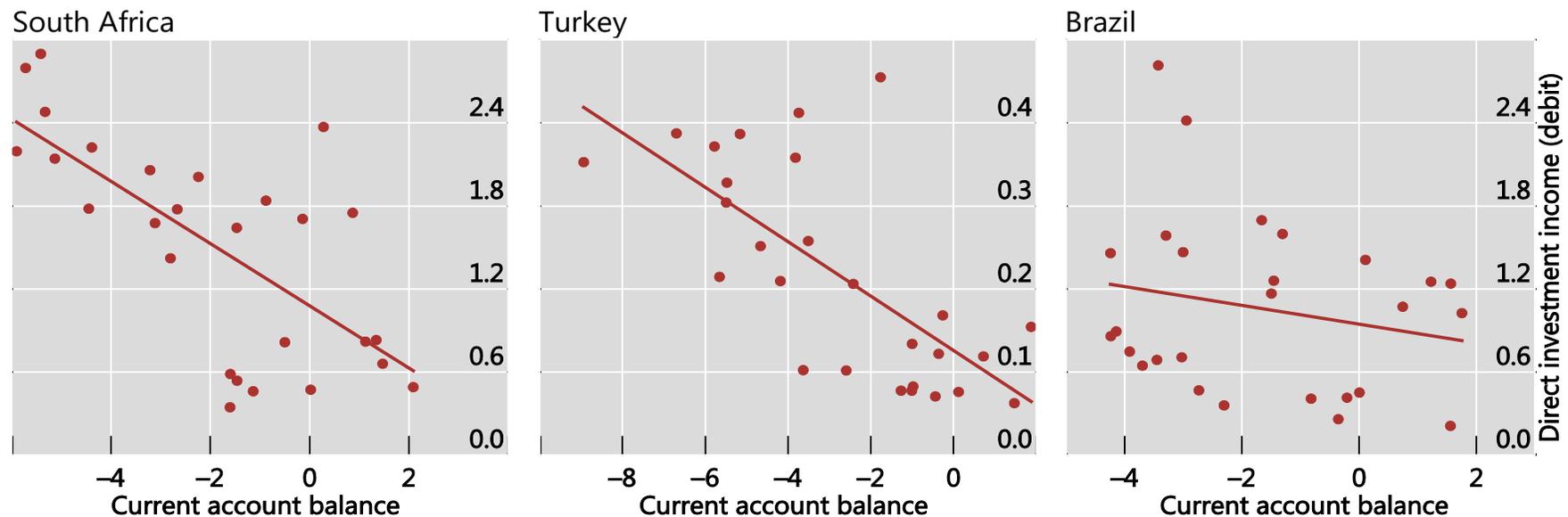
Tracking corporate profits and cash holdings IV

- Negative correlation between DII flows (debits) and current account emerging market economies

Investment income and current account balances

Annual values 1990–2016, as a percentage of GDP

Graph 3



Notes: (i) DII = direct investment income; PII = portfolio investment income. (ii) 1 Due to data availability constraints, annual values for 1997–2016. 2 Due to data availability constraints, annual values for 1999–2016.

Sources: IMF, Balance of Payments Statistics and World Economic Outlook.



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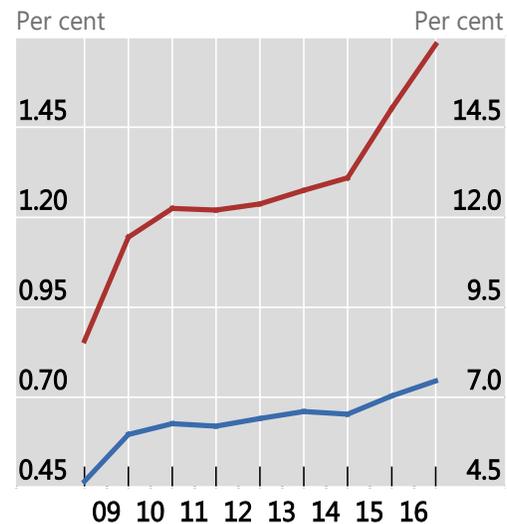
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Tracking corporate profits and cash holdings V

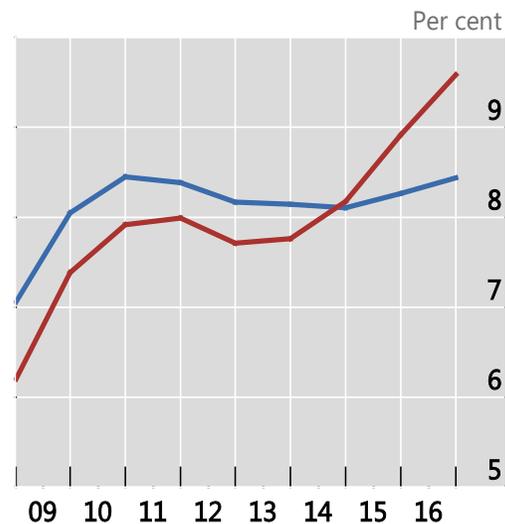
- Increasing non-distributed profits = large cash holdings
- Notion non-financial corporates are exclusively borrowers is outdated - lend to sovereigns and other corporates via bond holdings

Non-financial corporations' cash holdings and deposits

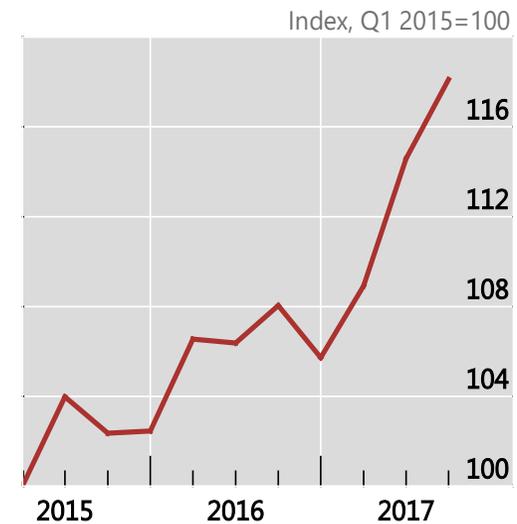
Cash¹ as share of world GDP



Cash¹ as share of total assets



Bank deposits⁴



NFCs:² — Top 100 (lhs)³ — All (rhs)

NFCs:² — Top 100³ — All

¹ Cash and cash equivalents, defined as readily convertible deposits, securities and other instruments having maturities of less than three months at the time of purchase. ² Public non-financial corporations (NFCs). ³ The top 100 public NFCs (ranked according to the US dollar value of their cash holdings as of end-2016) for which data are available from 2007 onward. ⁴ Internationally active banks' deposit liabilities to non-financial corporations for the 22 countries that report an enhanced counterparty sector breakdown (going at least as far back as Q1 2015) to the BIS locational banking statistics.

Sources: IMF, *World Economic Outlook*; Capital IQ; BIS locational banking statistics.



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Conclusions

- Measurement issues imply policymakers should exercise caution when using rules developed for a bygone era
 - Complexity of global firms indicates that additional measures are necessary
- Data initiatives to address these problems include among others
 - Legal Entity Identifier initiative to identify distinct legal entities and link them to the ultimate parent group;
 - BIS consolidated datasets – consolidated banking statistics, G-SIB data hub & international debt securities
 - Ireland's GNI*
 - Foreign affiliate trade statistics (FATS)
- Consolidated account framework to augment national accounting framework
 - Residence-based and the consolidated accounting frameworks should be considered complementary – data relevance depends on the policy/research question

