Dark matter, black holes and old-fashioned exploitation: transnational corporations and the US economy

Mona Ali*

In advanced economies, foreign direct investment (FDI) is usually a two-way process, involving both inwards and outwards investment, often in the same industries. Why, then, is US FDI so profitable whilst FDI in the USA is conspicuous in its unprofitability? Using sectoral-based data from 1999 to 2005 to investigate this puzzle, I find that US-owned FDI (USDIA) demonstrates far higher returns particularly relative to foreign-owned direct investment in the USA (FDIUS) but also compared to all US-based industries (NIPA). FDIUS is the worst performing of all three portfolios, exhibiting the poorest and most volatile returns for the period examined. These results hold for both the aggregate non-financial data as well as for the ‘narrow measured value added’. For the period tested, US inwards FDI isn’t employment generating whereas US direct investment abroad produces the fastest gains in labour productivity, output, employment, investment expenditures and tax revenues. Whilst it is debatable that ‘dark matter’ or intangible proprietary assets drive superior relative returns to USDIA, labour exploitation appears to play a role. Increases in labour productivity coupled with declining wage shares for all three portfolios (especially pronounced for USDIA) suggest ‘race to bottom’ outcomes. A burgeoning aspect of this race is cross-border profit-shifting to minimise firms’ global tax burdens. I suspect but am unable to confirm that profits are being shifted overseas—vanishing into the ‘black holes’ of tax havens, transfer pricing and other modes of tax avoidance.

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1. Introduction

As Fig. 1 shows, an increasingly large share of US corporate profits apparently originate overseas.¹ At their peak in 2008, foreign income receipts from abroad amounted

¹ Foreign receipts include profits on US direct investment that aren’t repatriated back to the USA. These overseas profits are reported pre–foreign taxes whereas US corporate profits (which include profits earned by foreign firms in the USA) are reported post–US taxes.

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to almost half of all US corporate profits. (Meanwhile US income payments to foreign residents grew at a much slower pace, reaching only 13% of aggregate US corporate profits in 2008.) Disaggregating the sources of foreign incomes by asset classes, US-owned foreign direct investment (FDI) made up the majority of US foreign income receipts: about 61% in 2012. (In contrast, only one-third of total incomes generated by foreigners on their holdings of US assets were from FDI).

Transnational corporate supply chains are responsible for 80% of world trade (UNCTAD, 2013) and 90% of US trade (Bernard et al., 2009). Along with being the world’s largest exporter of FDI, the USA is also the world’s largest recipient of FDI (UNCTAD, 2013). Multinational corporations (MNCs)—both US- and foreign-owned—are large players in the US economy. They generate half of all US exports and imports (Bernard et al., 2009) and almost three-quarters of all US corporate research and development expenditures (Slaughter, 2010). US MNCs dominate the list of the top 2,000 firms in the global economy. These firms created about one-fifth of total US employment recently (Wessel, 2011; McKinsey Global Institute, 2012). Whilst MNCs

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3 Defined as direct investment receipts divided by income receipts on US-owned assets abroad. Source: US Bureau of Economic Analysis, US International Transactions, Table 1, Lines 13, 14.
4 A larger share of US incomes earned by foreigners is “other private investment income” which reflects foreigners’ desires to purchase US private-sector financial assets. Compositional differences between US foreign assets and US assets held by foreigners are a long-standing feature of the country’s balance of payments (see, for instance, Hymer 1976) reflective of the predominance of the dollar in the world economy.
5 The USA has the world’s largest share of cross-border financial inflows and outflows, including FDDI.
accounted for 40% of US non-financial corporate (NFC) output, they were responsible for all of the increase in NFC labour productivity in the late 1990s (Corrado et al., 2007).

The increasing reliance of US corporations on income earned overseas indicates that it is very profitable for US firms to go overseas. But why it is so advantageous—especially compared to the poor aggregate performance of foreign firms in the USA—remains an unresolved puzzle (Gourinchas and Rey, 2014).

Amongst others, two striking hypotheses in the literature have attempted to answer this question. The first maintains that US FDI is much more profitable than FDI in the USA because of superior intangible assets or ‘dark matter’ (Hausmann and Sturzenegger, 2006). The other claims that the USA is the economic equivalent of a ‘black hole’ where the profits of foreign-owned US establishments mysteriously ‘disappear’ (Gros, 2006A). Whilst these arguments offer important insights into the rates of return differential between these two FDI portfolios, neither is able to marshal enough evidence justifying its claims.

To assess these contesting claims, I conduct an industry-based analysis of the profitability and industrial characteristics of majority-owned non-bank foreign affiliates of US multinationals (USDIA) and foreign-owned non-bank subsidiaries in the US (FDIUS) using Bureau of Economic Analysis (BEA) data. I compare these two direct investment portfolios using non-bank domestic industries (NIPA) as a benchmark.

Whilst this article’s focus is the economic impact of transnational firms from a US perspective, it is worth considering why corporations choose to locate production overseas. In Section 2 I examine theories of FDI and consider how multinational corporate strategies might differentially affect the profitability and industrial dynamics of USDIA versus FDIUS. The data overview and empirical methodology is explained in Section 3. Section 4 compares the profitability of USDIA with FDIUS using NIPA as a benchmark. Here I also examine some theoretical insights and empirical evidence that might help us understand the rate of return differential between USDIA and FDIUS. Section 5 conducts an extensive comparative analysis of the industrial dynamics of the three portfolios. Aside from other hard-to-measure factors, labour exploitation appears to bolster profits particularly for USDIA. Section 6 concludes.

2. FDI and transnational corporate strategy

In his influential 1960 dissertation that elaborated or foreshadowed many concepts that became central to modern trade theory, Stephen Hymer argued that the key feature distinguishing FDI from portfolio investment was the control of a foreign affiliate by its parent company (Hymer, 1976). Integral to corporate control was the ability to extract excess profits from overseas: ‘the motivation for investment is not the higher interest rate abroad but the profits that are derived from controlling the foreign enterprise’ (Hymer, 1976, p. 26). Hence FDI—he was probably referring to cross-border mergers and acquisitions that constitute the bulk of world FDI (UNCTAD, 2000)—involved the ‘removal of conflict between enterprises in different countries’ (Hymer, 1976, p. 25). Underlying Hymer’s hypothesis was the notion that a firm engaging in FDI was oligopolistic. Maintaining ownership stake of its foreign operations would ensure that

7 Defined as a US-based business with 50% or more foreign ownership (FDIUS) or a foreign business with 50% or more US resident ownership (USDIA).
the rents to its proprietary assets would accrue back to the firm itself (Hymer, 1976). Yet another major reason driving FDI, noted Hymer, was that firm-specific advantages could be further exploited by going overseas.

Vernon (1970)—author of the influential product life cycle theory of FDI—articulated a refinement of many Hymerian ideas. Like Hymer, who critiqued the idea that FDI was driven by cross-border interest rate differentials, Vernon (1970) discounted the neoclassical framework that sought to explain the motivation for FDI in factor-price differentials. Instead Vernon emphasised that the ‘competitive advantage’ of multinational enterprises was based on ‘non-classical factors’ such as proprietary or intangible assets and ‘physical and organizational scale’ (Vernon, 1970). Graham (1978) argued that the factor endowment hypothesis could not plausibly account for cross-investment (investment in similar industries). Such FDI that was biased towards particular industries (Graham, 1978) was common in advanced economies and involved goods produced with similar factor intensities (Cantwell, 1994).

This early literature on the geographic spread of multinationals emphasised the role of imperfect competition, innovation, economies of scale and uncertainty (Vernon, 1966). FDI was about the ‘pursuit and protection’ (Vernon, 1970) of markets and raw materials albeit—given the market power of the large firms engaging in FDI—‘without strict regard for least cost considerations’ (Vernon, 1970). In his ‘oligopolistic reaction’ thesis, Knickerbocker (1973) elaborated on strategic rivalry as the motivation for two-way FDI—a point that had been noted earlier by both Hymer (1976) and Vernon (1970). Knickerbocker (1973) emphasised how competition for market share between oligopolistic firms made for the ‘bunching up’ of USDI and FDIUS in similar industries (Ietto-Gillies, 2012; also see Buckley and Mucchielli, 1997). Graham (1978) was one of the earliest to note that European direct investment in the USA may be defensive in nature.

With its emphasis on control and strategic behaviour, this early international business literature offers a richer theory of the firm than that in the Coase-Williamson tradition (see Williamson, 2002). Embedded in the latter perspective is a conceptualisation of the firm as a minimiser of transactions costs (Pik and Theodore, 2007) and/or as a ‘bundle of assets’ in the property rights approach. Influenced by the Heckscher-Ohlin-Stolpher-Samuelson tradition—with its focus on ‘seamlessly map[ping] the movement of relative factor and output prices’ (Heintz, 2006)—the standard trade and investment literature offers remarkably little analysis of transnational corporate strategy beyond efficiency or profit-maximisation considerations. Much of this mainstream literature examines how multinational firms set firm boundaries (see Feenstra, 2004; Antràs and Yeaple, 2014) from the ‘make or buy’ binary that heavily relies on efficiency considerations (Holmstrom and Roberts, 1998). These models do not capture the multi-faceted characteristics of corporate strategy (Vernon, 1966; Galbraith, 1967; Ietto-Gillies, 2012). There are a number of lacunae in the transactions cost literature, including the scarce attention paid to the role of organizational knowledge which, Holmstrom and Roberts (1998) argue, is one of the leading causes of cross-border FDI mergers. Holmstrom and Roberts (1998) themselves favour abandoning transaction costs for more fully developed property rights (PR) models.8

Borrowing from the industrial organisation literature, Cowling and Sugden (1998) define the firm as a nexus of strategic decision making. For them, power and control,
rather than efficiency or asset ownership, are at the heart of the modern firm (Cowling and Sugden, 1998). Their separation of ownership from control implies that an MNC’s subcontracting relations firmly lie within the ambit of the firm itself.

Given the internationalisation and complexity—vertically integrated processes operating alongside vertically disintegrated production—of transnational supply chains, Sugden and Cowling offer a compelling definition of the modern transnational firm. Unfortunately, given the lack of data on off-shore outsourcing in the BEA multinational accounts, this study doesn’t capture the impact of production subcontracting by US multinationals to third parties in foreign countries (or vice versa, for foreign multinationals in the USA). This is a shortcoming since FDI and arm’s-length international production may often be complements and examining FDI alone may not capture the extent of a firm’s transnational activities (see Cantwell, 1994).

2.1 Transnationality as competitive advantage

For Hymer, foreignness was a ‘stigma’ (Hymer, 1976, p. 35) or liability (Mataloni, 2011). Firms that went overseas faced exposure to exchange rate volatility and possibly even the threat of expropriation by hostile governments (Hymer, 1976). Whilst Hymer’s work predated neoliberal policies—where restrictions on FDI have been drastically reduced in part through free trade and investment treaties (UNCTAD, 2000)—the emphasis on the costs of moving production overseas continues in the standard textbook treatment. Take, for example, Krugman et al’s proximity-concentration trade-off framework: here, the benefits of being located close to foreign markets are weighed against the costs of relocating production overseas with little discussion on the multiple dimensions of transnational corporate strategy (Krugman et al., 2012). As Ietto-Gillies (2012) notes, the tension between agglomeration effects—the external and internal economies of scale that arise from spacial concentration—and the rapid growth in FDI remains unexplained in Krugman (Ietto-Gillies, 2012).

In his eclectic OLI framework, Dunning emphasised the advantages—ownership, locational and internalisation—that accrued to firms over markets when large oligopolistic firms went overseas (Dunning, 1977, 1980). Ietto-Gillies (2012) argues that instead of considering international relocation as a disadvantage, operating across borders bestows strategic advantages on corporations. Transnationality per se gives firms a competitive edge: this may be with regards to taking advantage of differences in national regulations (from corporate tax rates to variations in labour and environmental...
standards), factor costs differentials and also third-party suppliers. Operating transnationally allows firms to engage in international labour arbitrage, risk diversification, tax minimisation, knowledge acquisition and organisational restructuring (Cantwell, 1989; Roach, 2004; Corrado et al., 2007; Ietto-Gillies, 2012). With regards to labour, in particular, a globally dispersed workforce is less powerful as a collective bargaining unit—an advantage often exploited by the owners and managers of transnational corporations (Ietto-Gillies, 2012). The expanding scale and scope of these oligopolistic enterprises only magnifies the advantages of transnationality in a positive feedback loop.

2.2 Transnational firm strategy: USDIA versus FDIUS

In certain aspects, transnational firms are ruthlessly efficient. In following sections, I discuss the ‘race to the bottom’ in terms of labour practices as well as tax evasion (OECD, 2013; Kleinbard, 2014). However the complexity of firm strategy means that various strategies—not just profit maximisation—may drive oligopolistic firms to locate in particular locations overseas (Ietto-Gillies, 2012). Thus the corporate strategies motivating FDIUS may be quite different from those driving USDIA.

In 2009 almost 80% of all USDIA output and 90% of newly established or acquired USDIA output was located in high-income countries (Slaughter, 2010). Over the past decade, however, as MNCs have increasingly off-shored production to developing countries, the high-income countries’ share of total USDIA output has fallen by almost 10% (Barefoot and Mataloni, 2011). Although the BEA doesn’t publish disaggregated greenfield (new) and brownfield (mergers and acquisition) investment data, FDI in the USA mostly involves the cross-border transfer of ownership rather than the creation of new productive capacity (Ietto-Gillies, 2012). In 2005, for instance, mergers and acquisitions (M&As) by foreign residents in the USA amounted to $79.2 billion, whereas only $7.6 billion of new foreign investment expenditures were on new plants (BEA, 2006).

How might differences in transnational corporate strategy differentially affect the profitability and industrial characteristics of FDIUS and USDIA? In the short-run, M&As might not generate greater profits and may result in job-cutting rather than employment growth (Ietto-Gillies, 2012). Greenfield investment is more likely to have positive employment effects—particularly in non-OECD countries where production is relatively labour-intensive. The incentive for FDI in developing countries, relevant to a small but fast-growing portion of USDIA, is often to exploit resource-cost differentials (Buckley and Mucchielli, 1997, p. 21). Meanwhile servicing high-income countries such as the USA may be motivated by the desire to access a new market as well as its highly productive workforce and infra-structure (Ietto-Gillies, 2012). Such FDI may be driven by ‘defensive’ considerations such as establishing firm presence and gaining market share (Buckley and Mucchielli, 1997). For foreign firms, operating

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11 These official estimates include off-shore banking centers where value-added is artificially inflated (Smith, 2012).
12 For the specific period studied, the growth in US-owned foreign affiliates output for middle-income giants such as China and Brazil was in double digits so that USDIA located in high-income countries in 2006 fell by 6 percentage points from its level in 1999 (Mataloni, 2008).
13 Often but not always sequentially first through exports and then through direct investment (see Vernon, 1966; Dunning, 1977; Cantwell, 1994)
on US soil may also be motivated by the desire to face the challenges of an intensely competitive environment that might burnish their global reputation (Hymer, 1976; Vernon, 1970; Buckley and Mucchielli, 1997).

3. Data and methodology: an overview

In a study on the competitiveness of US multinational firms, McKinsey Global Institute notes that whilst much of the literature on international competition has focussed on macroeconomic econometric assessments, these “‘top-down’ studies have often proved inconclusive’ (McKinsey Global Institute, 2012). To understand the dynamics of international competition, the study’s authors argue that a ‘bottom-up’ or sector-based approach is important. Hymer (1976), Ocampo (2005), and Wade (2012) also highlight the usefulness of ‘meso-economic’ perspectives. Alfaro and Charlton (2007) write that the ‘activities of multinational corporations (MNCs) are best measured by the firm-level data’ (also see Kucera and Principi, 2014). Unfortunately—the USA is an exception—disaggregated FDI data are not widely available for many countries (Mosley and Uno, 2007).

The data on US multinationals are based on annual surveys conducted by the BEA. These are mandatory and confidential surveys14 as mandated by the International Investment and Trade in Services Survey Act (Mataloni, 1995).15 Unlike the BEA’s international transactions data—based on aggregated FDI flows and stocks data—its multinational surveys are primarily concerned with the financial and operating expenses of firms. The estimation of value-added in these surveys is conceptually consistent with the National Income and Product Accounts (NIPA) measures of gross output and its sub-components (Corrado et al., 2007). This allows for adequate comparison between multinational and domestic firms16 (Corrado et al., 2007). The disaggregated GDP data is only available in current dollars. Hence I scale absolute numbers, such as gross investment expenditures, with output for that year, both in current dollars. This ratio cancels the price vectors and becomes a price-adjusted variable. All profit rates are price-adjusted real rates of return (see Shaikh, 2008).

My analysis focusses on majority-owned affiliates: between 1994 and 2004, they accounted for approximately 85% of the employment of all US multinational foreign affiliates (Yorgason, 2007). Majority-stake holding indicates that the ownership, control, long-term interests, strategy and management of the foreign affiliates are ‘unambiguously under US control’ (Yorgason, 2007) for USDAI and, for FDIUS, under foreign control (Mataloni, 2011).

14 Survey respondents were asked to follow Financial Accounting Standards Board Statement No. 52 (FASB 52), that is, a yearly average exchange rate for income statement items and to use a year-end exchange rate for balance sheet items such as capital stock. See http://www.bea.gov/international/pdf/usdia_2004f/Text%20sections/methodology.pdf.
15 The BEA exempts foreign firms operating in the USA that have less than $10 million in assets, sales or net income (or losses) from the mandatory reporting of all their data (BEA, 2002). Exempted firms accounted for only 0.2% of total affiliate assets and 0.4% of all affiliate sales (BEA, 2002, M-8). USDA data used to exempt affiliates making less than $7 million in assets, sales, net income (or loss) but since 1999 have included all affiliates to omit this ‘downwards bias’.
16 There are small methodological differences between the MNC accounts and the domestic (NIPAs) data. The MNC industry accounts are aggregated on a consolidated business enterprise or aggregated company level rather than establishment or plant basis. The domestic industry accounts (NIPA), however, are tabulated on an establishment basis. On a consolidated enterprise basis, all of a company’s various activities, such as finance, will be assigned to a primary industry (Corrado et al., 2007). On an establishment basis, different activities are assigned to different industries. For example, the finance arm of a domestic US retail conglomerate will go under finance rather than retail (Mataloni, 1995).
The three portfolios studied are somewhat overlapping: first, the parent companies of USDIA are included in the NIPA sample. These parent companies contributed about a quarter of all domestic private-sector output (Slaughter, 2010). Parents’ corporate strategies influence their subsidiaries (USDIA). Second, FDIUS is wholly part of NIPA: aggregate FDIUS output is about 5% of total NIPA output. In terms of comparative size, USDIA is about 8% larger compared with aggregate NIPA output. There is also some overlap in the USDIA and FDIUS data: the latter includes firms incorporated abroad but ultimately owned by US owners (Feenstra et al., 2010). Moreover, when foreign affiliates in the USA set up subsidiaries that supply parts directly to the US affiliate, the US-based foreign affiliate receiving supplies from a foreign subsidiary is designated as a US parent company (Corrado et al., 2007; Feenstra et al., 2010). These US parents that are also majority-owned foreign affiliates (FDIUS) only amount to 11% of the aggregate USDIA output (Corrado et al., 2007; also see Mataloni, 2002).

Sectoral-based studies of profitability, productivity and growth dynamics (Shaikh and Tonak, 1994; Basu and Foley, 2013) are often sensitive to what constitutes an ‘economically meaningful group of sectors and sub-sectors’ (Corrado et al., 2007). Certain industries are prone to mis-measurements in their capital stock, output and various components of output such as gross operating surplus (Shaikh, 2008). In finance, insurance, and real estate (FIRE), for example, output is imputed from incomes rather than directly estimated through market transactions (Foley, 2011). Real estate, in particular, is problematic. First, the BEA treats owner-occupied houses as if they generate ‘rents’ to owners (Shaikh, 2008). Second, owner-occupied housing—a component of real estate—is relatively shielded from global competition. Corrado et al. (2007), for example, justify excluding real estate ‘in order to focus more directly on multinational corporations’. Whilst Shaikh (2008) estimates and subtracts these fictitious ‘owner-occupied rents’ from total rents accrued in real estate, like Corrado et al. (2007) and McKinsey Global Institute (2012), I simply exclude this sector altogether. Following Foley’s (2011) “narrow measured value added” measure of GDP, which excludes industries where value-added is imprecisely approximated through incomes, in one iteration of profit measures I exclude FIRE; information, professional, scientific and technical services; management of non-bank companies and enterprises; administration, support and waste management; health care and social assistance; and miscellaneous services (see Online Appendix 3 for details).

My calculations rely on data from 1999 to 2005. One reason for focussing on this period is because the BEA supplanted its classification system from the older 1987 SIC codes to the NAICS-based ISI codes in 1997 for FDIUS and 1999 for USDIA. As Corrado et al. (2007) note, the industrial classification of both surveys varies, making consistent time-series analysis difficult. This is why trend analysis at the four-digit industry level is not possible for earlier years. Yet another complication thwarting longer-term analysis is that the domestic industry-based data (NIPA) are no longer

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17 But also additional sectors such professional and business services.

18 Information does have independently generated value-added but is treated differently in the NIPAs compared with the direct investment portfolios (Corrado et al., 2007).

19 For the empirical comparisons of industrial characteristics I excluded two sub-sectors in chemicals (‘soaps’ and ‘other chemicals’) from USDIA and FDIUS. These are sub-sectors for which data were not uniformly available. Whilst I did not exclude food, beverage and tobacco (these two industries are split into two in FDIUS and USDIA but merged into one in NIPA) because of differences in industry concurrence they are not shown in the various charts. However, these industries are captured at both the manufacturing and aggregate level.
solely derived on an expenditures basis. Instead the industry expenditures data is now
‘balanced’ with the incomes measure of GDP. Unlike the NIPA data, USDIA and
FDIUUS data do not balance incomes with expenditures. Strictly then, the BEA mul-
tinational financial and operating data is comparable with the NIPA value-added data
(at the 4-digit level) only through 2006 prior to NIPA’s GDP-by-industry expendi-

Recent years have witnessed a ‘slow deterioration’ (Feenstra et al., 2010) in FDI
coverage because of budget cuts and changes in data collection (Mataloni, 2011). In
2009 the IMF Balance of Payments Instruction manual—universally used by national
statistical agencies—re-defined FDI with a ‘purely legal definition of ownership’.
Henceforth the movement of intangible and financial assets overseas (often for tax
avoidance purposes) is treated as a movement in actual production itself (Feenstra
et al., 2010). No longer does FDI need to show evidence of physical production in
a country: thus ‘the fictions of corporate accounting are given precedence over the
facts of production censuses and surveys’ (Feenstra et al., 2010). This redefinition
of FDI in 2009 is yet another reason for focussing on earlier data. Details regarding
BEA data sources are in Online Appendix 1. Each of the following sections—the
next on profits and the following on industrial characteristics—contains methodol-
ogy specific to it.

4. Asymmetric returns to US FDI

4.1 Measuring profitability: a sensitivity analysis

Profits are key for understanding not only the health of balance sheets but also the
dynamics of competition, economic growth, and stability (Wolff, 2003; Mohun, 2009;
Shaikh, 2004). I calculate the returns to US direct investment abroad (USDIA) relative
to FDI in the USA (FDIUS) using domestic US production (NIPA) as a bench-
mark for different measures of profitability at the four-digit level.

As a robustness test, I measure both the pre– and the post–income tax average rates
of return. Because the NIPAs no longer publish gross capital stocks, one can only cal-
culate net profits, which is the net operating surplus (subtracting current capital con-
sumption allowances from the current gross operating surplus) divided by the lagged
net capital stock.\(^\text{20}\) I also calculate the volatility of returns measured by the standard
deviations and coefficients of variation. Note that oscillations in the rate of return are
a rudimentary measure and don’t capture risk in its various aspects. Online Appendix
2 explains the profit rate calculations in detail.

In the first iteration of the profit rates (see Table A1 in Online Appendix 4) I only
exclude FIRE and management.\(^\text{21}\) I find that USDIA consistently—across both the
pre- and post-tax rates of return for both the weighted ‘all industry’ as well as ‘aggre-
gate manufacturing’ averages—out-performs NIPA and especially FDIUS. FDIUS
exhibits the lowest returns and is also the riskiest of the three portfolios. USDIA dem-
onstrates far higher returns relative to NIPA for both the aggregate—with the absolute

\(^{20}\) Land is included in the capital stock of the direct investment portfolios but not in the NIPA capital
stock (for good reason—it was over-valued in the period leading up to the 2008 financial crisis), so I sub-
tracted it from the direct investment capital stocks.

\(^{21}\) USDIA finance exhibits negative profit rates despite its well-established profitability pre-2008. This
suggests that profits may be artificially reduced in this sector (Foley, 2011).
differences between the profit rates of the two portfolios ranging from 16% pre-tax to 10% post-tax—and the manufacturing—ranging from 12% pre-tax to 10% post-tax—rates of return.

On aggregate, higher returns coexist with relatively greater volatility for USDIA compared to NIPA. However, comparing USDIA against FDIUS, the former portfolio is not only much more profitable compared with the latter but also less risky, as measured by the volatility of the profit rates. This holds true for both the non-FIRE private sector and manufacturing aggregates. In terms of the performance of NIPA relative to FDIUS, NIPA is slightly more profitable—between 2% pre-tax and 3% post-tax—compared to FDIUS for the aggregate average returns but also less volatile, once again violating the risk-return trade-off. For the average rates of returns on manufacturing, NIPA is slightly more profitable—by 5% comparing average excess returns—than FDIUS.

Next I test the comparative profit rates employing Foley’s (2011) narrow measured value added or NVMA (see Online Appendix 3). Incorporating these sectoral exclusions leaves us with 52% of the original (i.e. non-FIRE) output of NIPA, 84% of FDIUS’s original output and 86% of USDIA’s original output (manufacturing aggregates do not change). Rounding up profit rates to whole numbers, the comparative results (for aggregate NVMA sectors and manufacturing) do not change in my second approximation of the profit rates (see Table A1 in Online Appendix 4). In the third approximation, building on the NVMA, I exclude these additional sectors in manufacturing: petroleum and coal, computers and electronics, and food, beverages and tobacco. These industries are outliers in terms of their profitability and excluding them reduces the return differential to USDIA. Extraordinary profits to USDIA in these industries are likely due to the very large market concentration of US MNCs—for instance, the US firm Altria’s market share is 50% of the US cigarette market. Differential rents to these firms arise, in part, from intangibles such as brand equity. Petroleum is additionally problematic: it has large negative profit rates because of inordinately huge depreciation allowances—67% of value added—in the FDIUS portfolio. Even if we exclude these highly profitable sectors from the aggregate NVMA sample, USDIA continues to produce the greatest returns in relation to NIPA and FDIUS (see Table A2 in Online Appendix 4). In short, the profit rankings of the three portfolios are robust across different iterations.

4.2 Theorizing excess returns to US FDI

What explains the remarkable success of US MNCs overseas compared to the lacklustre performance of foreign firms in the USA? Hausmann and Sturzenegger (2006), amongst others, have argued that US investments abroad are relatively richer in intangible assets: this explains their superior income-generating capacity. Milberg (2006) also claims that US ownership and control over intangible proprietary assets in global supply chains influence their excess returns. Using R&D expenses (scaled by gross fixed assets) as proxies for ‘dark matter’ or firm-specific assets, it is plausible that differences in proprietary technology or intellectual property may contribute to the relatively greater returns to USDIA compared to FDIUS. On average, from 1999 to 2005, USDIA is more than twice as

Transnational corporations and the US economy

R&D-intensive than FDIUS (see Figure 2). However, to rely on relatively higher R&D expenditures as clear evidence of USDIA’s superior ‘dark matter’ is problematic. For one, foreign firms in the USA may choose to locate their R&D expenditures in their home countries rather than in the USA. Furthermore, intangibles such as human capital, brand equity and reputation may be inadequately captured by this proxy.

In the next section I examine other industrial characteristics that may also contribute to USDIA’s superior performance. Despite the bias in the FDIUS data that excludes affiliates with less than $10 million in assets, sales and net income from mandatory reporting of their financial and operating data (BEA, 2002), on an industry basis, USDIA is larger relative to FDIUS. Larger industries may enjoy greater profits from economies of scale and market capture. USDIA’s profitability may also be influenced by the ability of US MNCs to secure preferential treatment or ‘concessions’ from host countries. These may take the form of tax holidays in special economic zones in host countries negotiated through bilateral trade and investment treaties.

In a study for the New York Fed, Higgins et al. (2007) link the higher profitability of USDIA to its greater efficiency—measured as faster output growth—and better corporate governance relative to foreign firms. But their study lacks adequate empirical evidence stymying any firm conclusion. Higgins et al. also hypothesise that the relatively greater competitive pressure faced by foreign firms in the USA and possible ‘differences in tax treatment’ result in lower profit margins for FDIUS (Higgins et al., 2007). Gourinchas and Rey (2014) suggest that tax asymmetries with regard to FDI might be driving relatively low returns to FDIUS.

Fig. 2. Research and development expenses (as a share of gross fixed assets)
4.3 Asymmetric tax burden?

With regards to tax evasion, FDIUS profits may be artificially lowered through capital consumption allowances or other modes of ‘aggressive tax planning’ (OECD, 2013) such as transfer pricing (Gros, 2006A) or depreciation allowances. Disaggregating depreciation allowances as a share of output for all three series, they are amongst the highest for real estate: 20% for NIPA, almost 30% for FDIUS and more than one-third of output for USDIA. Profits in this sector are partially accounting fiction: this is why I excluded it in the various iterations of the rates of return. However depreciation rates scaled by output are fairly similar for USDIA and FDIUS—around 11% for USDIA and 14% for FDIUS—in this first approximation that includes the FIRE sectors.

Transfer pricing allows MNCs to manipulate prices charged for goods and services exchanged within the firm internationally. For instance, firms may reduce (increase) intra-firm prices in low (high) tax zones so that profits appear larger (smaller), minimising their global tax liabilities. Gros discounts that transfer pricing is driving the low returns to FDIUS because these would have been reflected in annual declines of at least 10% in the US terms of trade (Gros, 2006A). Corrado et al. (2007)—citing Mataloni (2000)—does not think that there is systemic bias in the MNC value-added data because of transfer pricing.23

A more plausible hypothesis explaining its low returns is that FDIUS is overwhelmingly acquired through M&As. Such acquisition strategies often artificially lower post-merger profits through amortisation of goodwill effects and other strategies (Gros, 2006B). The period covered by this study (1999–2005) is a time of accelerated intra-firm trade (Corrado et al., 2007) and cross-border M&A activity (Gaughan, 2010) that may influence both transfer pricing and amortisation effects.

Ultimately it is difficult to prove if FDIUS is more adept at tax evasion compared to USDIA: as Higgins et al. (2007) note, ‘differences in tax treatment may induce foreign firms to attribute profits on operations in the United States to the home country or a third country . . . [but they may also] induce US firms to attribute profits on US operations to activity abroad’. Citing Laster and McCauley (1994), the authors note that studies investigating a comparatively lower tax burden for FDIUS compared to USDIA produce inconclusive evidence for the most part (Higgins et al., 2007). Why should US firms overseas be any less successful at tax-minimisation than foreign firms in the USA? Post-1997, changes in tax rules have allowed US parent companies to more easily shift tax obligations to their subsidiaries located in low-tax countries (Grubert, 2012; Kleinbard, 2014). The current ‘tsunami’ (Kleinbard, 2014) of US firms engaging in corporate inversions—whereby firms reduce their global tax bill by declaring their corporate headquarters overseas when merging with a smaller foreign rival—suggests the accelerated use of tax avoidance strategies by USDIA (Sorkin, 2014).

Despite the lack of clear evidence regarding asymmetric profit shifting for tax purposes, it is clear that taxation is an important consideration in determining multinational location (Desai et al., 2006; Gros, 2006B; Corrado et al., 2007; Clausing, 2011; Grubert, 2012; OECD, 2013). Modes of tax evasion have become increasingly complex and include strategies such as extracting royalties and management fees—thereby

23 That said, examining Tables A1 and A2 (Online Appendix 4), I find that the differences between the pre- and post-income tax rate of return are less for NIPA compared with the other two portfolios. This suggests that domestic firms may be engaging in transfer pricing, which artificially impacts the pre-tax gross operating surplus.
Transnational corporations and the US economy

stripping income from subsidiaries in high-tax zones—and relocating intangible assets to special-purpose entities that generate little employment or production but hold assets or debt in tax havens (OECD, 2013).

Given the confidentiality of firm data, it is difficult for tax authorities and statisticians to figure out which modes of ‘aggressive tax planning’ (OECD, 2013) are at work. Companies with more extensive transnational networks can take greater advantage of aggressive tax planning (Grubert, 2012; OECD, 2013). In short, whilst an MNC’s global profits are correct give or take some profit leakages, a firm’s reported profits in a given country may be vastly skewed because of cross-border profit shifting.

In light of these difficulties, Fuest and Riedel (2010) and the OECD (2013) suggest that comparisons within industries might help identify corporate profit shifting. I examine the effective corporate tax burden—defined as corporate income taxes as a share of pre-tax income—for non-financial firms in the three portfolios (see Figure 3). This chart compares total US corporate taxes24 on both domestic and foreign income against foreign income taxes paid by the two direct investment portfolios (Yorgason, 2009).

I find that in relation to the two FDI portfolios, NIPA’s aggregate corporate tax burden is around 5% of value-added from 2002 to 200525 compared with nearly 20% for USDIA and 18% percent for FDIUS. Several domestic (NIPA) sectors—such as agriculture and real estate—have very low effective tax rates. There are also

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24 One of the consequences of multinational taxation avoidance is a striking divergence between actual taxes paid compared to the expected tax burden based on the statutory tax rate. For instance, whilst the USA has one of the highest statutory corporate tax rates (35%) in all OECD countries, it has the fourth lowest actual corporate taxes paid in the developed world (Whichard, 2003; Kocieniewski, 2011A,B).

25 FDIUS tax data were not available prior to 2002.
some sectors, for instance, FDIUS’s mining and USDIA’s administration, that have negative effective taxes. For manufacturing, USDIA and NIPA tax burdens are about the same—around 15%—whilst corporate taxes are the highest for FDIUS. Although it is difficult to confirm the extent of profit shifting, the asymmetrically low tax burden (and a priori, poor aggregate profitability) for domestic non-financial production (NIPA) suggests that cross-border tax avoidance is at work.

5. Comparative industrial dynamics

Profits may involve some degree of fiction depending on the looseness of accounting for depreciation and other modes of tax evasion. To more fully understand what is driving the rate of return differential between USDIA and FDIUS, one would also need to assess performance in other ways. Are other industry characteristics—26—for instance, the growth rates of output and labour productivity—consistent with the superior profitability of USDIA relative to FDIUS and NIPA? The following analysis focusses on all industry as well as manufacturing aggregates—given the large share of manufacturing in the FDI portfolios and the importance of manufacturing to aggregate economic growth and employment (see Basu and Foley, 2013).

5.1 Sectoral composition

Relative to NIPA, the two direct investment portfolios (FDIUS and USDIA) are more similar in terms of their industrial composition. Manufacturing is the largest two-digit sector for both inwards and outwards US direct investment, constituting about half of aggregate output for both direct investment portfolios.27 USDIA manufacturing is about 23% of NIPA’s manufacturing output, whilst FDIUS manufacturing is about 15% compared with NIPA. Meanwhile, domestic (NIPA) manufacturing is only about 16% of total domestic output. Whilst the BEA data doesn’t split FDI into horizontal (market seeking) or vertical (efficiency seeking) investment, typically manufacturing is considered vertical, employing factor-cost differentials (Kucera and Principi, 2014; Mosley and Uno, 2007) whereas FDI in business and professional services tends to be horizontal (Kucera and Principi, 2014). The sectoral share of finance and insurance is the same for FDIUS and NIPA (5% of output) and very similar to USDIA (4% of output).

There are certain sectors in which there is a big compositional divergence between USDIA and FDIUS such as mining (10% of output for USDIA and less than 5% for NIPA and FDIUS) and real estate (15% of NIPA output and much less for the others). On the whole, however, the industrial composition of the direct investment portfolios is fairly similar: contemporary evidence of Knickerbocker (1973) and others’ claims (Vernon, 1970; Hymer, 1976; Graham, 1978) that strategic rivalry between oligopolistic firms makes for cross-border FDI in similar industries in advanced economies.

5.2 Decomposing output

Next I decompose (pre-income tax) output into its three components: the profit share, the indirect business tax share and the wage share. Ceteris paribus, the higher its profit

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26 Here I only exclude banks and the mismeasured soap and other chemicals.
27 The differences in output between NIPA and the two FDI portfolios are most pronounced in ‘other industries’, in which NIPA is much bulkier.
Transnational corporations and the US economy

share, the greater is the profitability of a particular portfolio relative to the others. For the original sample—excluding FIRE and management where profit rates are negative—I find that USDIA has the highest profit share (40% of value-added) of the three portfolios. NIPA has a higher profit share (30% of output) relative to FDIUS (27%). Comparing net indirect business taxes across the three portfolios, we find the highest for USDIA (20% of output). Indirect business taxes are the lowest for NIPA (8% of gross product). The indirect tax burden is twice as less for FDIUS (10%) compared with FDIUS’s corporate tax burden (18%, Section 4.3). This may indicate the use of transfer pricing by FDIUS since indirect business taxes affect prices, and hence profits, on imports.

Despite a greater taxation burden both for corporate as well as indirect business taxes, USDIA is able to capture the highest profit share largely because it has the lowest wage share. The aggregate wage share of FDIUS (62% of output) is higher than NIPA (53%) and more than 20 percentage points higher than USDIA (41%). Whilst only about one-third of USDIA is located in non-OECD countries, increasingly the lower value-added components of global supply chains have moved overseas resulting in lower unit labour costs for USDIA. Comparing the wage share of manufacturing value-added across the three series, we see again that it is notably lower for USDIA relative to NIPA and FDIUS.

The growth in the profit share is most pronounced for USDIA (4%) and slightly lower for NIPA (1%) compared to FDIUS (2%). Wage shares are falling across most industries for all three portfolios: by 3% for USDIA and around 1% for FDIUS and NIPA (see Figure 4). Disaggregated as it is on an industry rather than country basis, this study cannot substantiate whether wage shares for USDIA are declining more in non-OECD countries compared to advanced economies (where the bulk of USDIA is located). But the fact that USDIA wage-shares are declining faster compared to domestic-based production (FDIUS and NIPA) suggests that for US firms, in particular, transnationality lends itself to asymmetric capital-labour dynamics.

5.3 Output, investment and employment dynamics

In general, higher profitability spurs greater output growth: not surprisingly, for the period examined (1999–2005), USDIA’s relative growth in aggregate output is 4% faster compared to NIPA on aggregate and 3% faster compared to FDIUS. For the ‘narrow’ measured value-added (manufacturing figures in parentheses), the growth rate is 9% (6%) for USDIA, 6% (2%) for FDIUS and 4% (1%) for NIPA. Despite FDIUS’s relatively lower aggregate profitability compared to NIPA, it experienced a slightly faster aggregate growth rate: about 1% more (2% more for manufacturing where FDIUS is more profitable than NIPA). The fact that FDIUS experienced slightly faster growth in output and profit shares (see Section 5.2) compared to NIPA despite its lowest profitability suggests that foreign firms in the USA may be shifting profits overseas.

The growth rate of new capital expenditures is about the same—around 4% for both NIPA and USDIA—whilst it is a bit smaller at 3% for FDIUS. FDIUS’s relatively lowest increase in new capital expenditures is likely due to the predominance of brown-field investment in this portfolio. Domestic capital expenditures in manufacturing actually fell (more sharply for NIPA than FDIUS), consistent with the worst relative performance of NIPA manufacturing whilst USDIA manufacturing investment grew by 6%.
USDIA enjoys the highest relative profitability, growth in output, investment and the highest growth in employment growth: 3% from 1999 to 2005. Employment increased by only 1% for both NIPA and FDIUS. Manufacturing jobs declined at about the same rate, around 3%, for domestic production (FDIUS and NIPA) driven by technological innovation and off-shoring. Using the narrow measure of output, the growth rate of employment turned negative for US-based production. USDIA manufacturing employment growth was close to stagnant; it wasn’t negative likely because USDIA manufacturing isn’t as capital-intensive compared to US-based manufacturing.

Next I compare the employment elasticity of output. In my first approximation—including all sectors except for FIRE and non-bank management—I find that the employment elasticity of aggregate output is declining for all portfolios whilst it is increasing for USDIA manufacturing. Using the more narrowly defined measure of output, it appears that unlike US-based businesses (FDIUS and NIPA), US multinational subsidiaries did generate employment as they expanded production overseas. These results are consistent with the evidence that between 2000 and 2005 US-based MNCs cut 2 million jobs at home whilst adding jobs overseas28 (Mandel, 2008; Wessel, 2011).

5.4 Labour exploitation

Lacking cross-sample information on ‘hours worked’, I measure labour productivity as pre-tax output divided by the number of employees. I find that aggregate differences

in the levels of labour productivity are fairly small. However there are substantial differences in labour productivity across the three portfolios in the extractive and highly capital-intensive industries such as mining, utilities and petroleum.\textsuperscript{29}

Using the broad measure of productivity that includes these highly capital-intensive sectors, FDIUS exhibits slightly higher levels of labour productivity compared with USDIA whilst NIPA exhibits the lowest levels. Doms and Jenson (1998) and Corrado \textit{et al.} (2007) amongst others have noted that productivity levels are higher for transnational corporations compared to uninational companies; this study confirms that.

However aggregate measures of labour productivity maybe misleading. For one, output in the FIRE sectors is mis-measured: for instance, off-shore tax havens have amongst the highest levels of national productivity because of their disproportionately large financial sector GDP (Smith, 2012). Attentive to Kaldor’s critique of the measurement of productivity in much of the tertiary sector (Basu and Foley, 2013), I also calculate the narrow measure of labour productivity excluding sectors where output is poorly measured (the NMVA). I find that on aggregate, productivity levels are once again the highest for FDIUS ($98 per worker). USDIA continues to have higher aggregate levels of labour productivity ($92) relative to NIPA ($78) despite relatively lower labour costs for the former contrary to the low wages–low productivity correlation (Krugman \textit{et al.}, 2012). However, for manufacturing, labour productivity is the lowest for USDIA ($79) relative to NIPA ($89) and FDIUS ($101) probably because of the relatively greater capital-intensity of US based manufacturing (FDIUS and NIPA).\textsuperscript{30} For all three portfolios, declining wage shares imply rising labour productivity. I find that the growth in the narrowly measured labour productivity is about the same, around 6%, for the direct investment portfolios (USDIA and FDIUS) whilst it is a bit lower, around 4%, for NIPA. Manufacturing productivity growth is about the same for all three portfolios, around 5%.

5.5 Decomposing growth

The growth in output (using the NMVA) may be decomposed into the growth in labour productivity and the growth in employment. As Table 1 shows, for all three portfolios, labour productivity is the key determinant of the growth in output. These pronounced labour productivity effects are especially magnified for US-based production (FDIUS and NIPA) where declining employment is more than compensated by a more than 100% contribution of labour productivity growth to increases in output. Overseas, however, almost one-third of the growth in USDIA is attributable to increases in employment.

The evidence on labour productivity and employment dynamics is consistent with Basu and Foley (2013), who argue that globalisation has promoted Marx-biased technical change. I find increases in labour productivity (especially for USDIA and FDIUS) commensurate with declining wage shares of output (particularly for USDIA), indicating that labour is under increasing duress. For the period examined, USDIA exhibits the lowest wage shares in output, the fastest decline in wage shares and the fastest growth in aggregate labour productivity compared with the other two portfolios. Given their relatively higher costs, for US-based firms (FDIUS and NIPA), too, a response to

\textsuperscript{29} Petroleum is an outlier for all three portfolios, particularly USDIA, where labour productivity in this sector is extraordinarily high.

\textsuperscript{30} My labour productivity rankings for FDIUS and NIPA are consistent with Howenstine and Zeile (1994).
increasing international competitiveness entails increasing productivity through investment and/or reducing the cost of labour—the evidence presented here suggests that both strategies appear to be at work.

### 6. Conclusion

The sectoral-based evidence of the superior performance of US MNCs located overseas compared with both domestic firms and especially foreign MNCs in the USA is consistent with both the dark matter thesis as well as Gros’s (2006) claim that the profits of foreign-owned firms disappear into a ‘black hole’ in the USA.

No doubt, asymmetric returns to USDIA relative to NIPA and FDIUS are rooted *inter alia* in proprietary assets including intangibles; the power of US transnational firms over foreign and domestic competitors, governments, suppliers; and possibly greater tax avoidance as well. As Kleinbard notes, ‘US multinational firms have established themselves as world leaders in global tax avoidance strategies’ (Kleinbard, 2014). However the influence of these factors on profitability is difficult to estimate. Easier to identify is how asymmetric capital-labour dynamics drive USDIA’s remarkable profitability. The rising insecurity of workers—especially those employed by US MNC overseas subsidiaries—is reflected in across-the-board increases in labour productivity (especially for USDIA and FDIUS) alongside declining wage shares (more than double for USDIA compared to that of US-based production). Given that FDIUS is overwhelmingly brown-field, I suspect that profits are artificially suppressed through amortisation of goodwill post-mergers or shifted overseas to low-tax zones through transfer pricing and other tax-avoidance schemes. My analysis confirms that for US firms especially, transnationality bestows a competitive advantage.

This study also highlights the dissonance between the success of US multinationals abroad and domestic economic outcomes. Slaughter argues that ‘the global engagement of US multinationals has long supported American jobs and economic growth’ and “the ability of US multinationals to stem domestic job losses and return to hiring American workers depends on the health, vitality and competitiveness of their worldwide operations’ (Slaughter, 2010). However my empirical analysis confirms the contrary view: that we are witnessing the ‘decoupling of US multinationals from the US economy’ (Mandel, 2008; also see Sullivan, 2011). For the period tested (1999–2005), US-based output (regardless of domestic or foreign ownership) did not generate gains in employment, whilst USDIA produced the greatest profits and the fastest growth in output, employment, investment and tax revenues in host countries. The results presented here are consistent with Harrison and McMillan (2006), who find that employment in the USA has been hurt by US FDI.

### Table 1. Decomposing growth (2000–2005) (%)

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<th></th>
<th>USDIA</th>
<th>FDIUS</th>
<th>NIPA</th>
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<tr>
<td>Contribution of labour productivity growth</td>
<td>70</td>
<td>104</td>
<td>102</td>
</tr>
<tr>
<td>Contribution of employment growth</td>
<td>27</td>
<td>-3</td>
<td>-2</td>
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Transnational corporations and the US economy

The industrial dynamics mapped here suggest the intensification of international competition and its transmission—in complex, uneven ways—by modern multinationals. The ‘race to the bottom’ is no longer just about old-fashioned labour exploitation but also about cross-border tax minimisation.

In the absence of substantive measures to boost manufacturing employment coupled with an astonishingly low effective tax rate for US-based firms, the structural implications for US economic growth and income distribution appear bleak. Ironically, whilst it is becoming even more crucial to study transnational firms, the re-definition of FDI—which erodes Hymer’s crucial distinction between portfolio (passive) and direct (involving control) investment—implies that long-run analyses will become even more challenging.

Supplementary material

Supplementary material may be found online at the OUP Journals website.

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