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Apple Business Model Financialization across the Pacific

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Apple Business Model

Financialization across the Pacific¹

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ABSTRACT¹ *This paper argues that thirty years ago, favourable cost conditions built productive power in Asia, whereas now US financial power drives and benefits from favourable conditions in China as well as the USA. It considers the changing business models within the complexities of a globalised and financialized world since the 1970s and combines the literatures on financialization and on global supply chains to present an alternative view of the dual pressures and its outcomes. It then adds a temporal dimension through the use of macro evidence on cost ratios and labour share of value added in low wage Asia to compare new entrants into the industrial world order since the 1970s. A third section presents a case study which deconstruct Apple Inc.'s financial success and its trans-Pacific relations with its handset supplier Foxconn International Holdings (FIH). The paper concludes by observing that the rise of the post national corporate player changes the alignment between large corporate interests and the US economy where Apple hoards its cash surplus and the success for the stockholders does not align with the broader needs of the US economy and society.*

KEYWORDS: Apple Inc., Business Model, Financialization, Foxconn, Globalisation, iPhone, Value Added.

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Apple Business Model Financialization across the Pacific

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“There are two types of companies: those that work hard to charge customers more, and those that work hard to charge customers less. Both approaches can work. We are firmly in the second camp.”

Jeff Bezos, letter to customers Amazon Website, 28/9/11

The quotation above is by Amazon CEO Jeff Bezos on the day when Amazon launched the Kindle Fire as a low cost competitor to Apple’s iPad. The implication is that the two products represented competing company business models with different implications for the consumer: according to Bezos, Amazon represents cost reduction and Apple represents cost recovery. Older strategy texts, like those of Porter from the 1980s, assumed that supply chains would reflect the generic strategies and positioning of lead firms, so that cost leaders like Amazon would have very different supply chains to a value-adding differentiator like Apple. But we now live in a different world whose complications are nicely illustrated by Amazon and Apple. Both firms have business models which in financial terms lever multiple revenue streams from hardware devices and software products while in organisational terms they both cross sectors, chains and national boundaries and interestingly share an infrastructure of componentry and assembly. Hon Hai’s Chinese based subsidiaries such as Foxconn are the assemblers of choice for Apple, Amazon and all the other Western firms producing hand held smart devices at various price points from nearly generic componentry.

This paper represents a preliminary attempt to engage with some of the changing business model complexities of this new globalised, financialized world created since the 1970s. This new world is explored in two ways: first, discursively, by bringing together the two distinct literatures on financialization and on global supply chains; and second, empirically by presenting some macro evidence on cost ratios and labour share of value added in low wage Asia before then adding a case study of Apple Inc. and its relation to its supplier Foxconn International Holdings (FIH). The article which presents this argument is organised in a relatively straightforward way into four successive sections: the first two cover literatures and the evidence on macro aggregates and the second two provide illustrative case study material on the problems of a handset assembler FIH before turning to deconstruct Apple’s success. But the argument about Asian low wage manufacturing and its relation to Western firms is a complex one. The future of our world is now uncertain because of rolling financial crisis, but, if

we look back before 2007, then the new post 1970s world was always an experiment and work in progress with a changing logic. By bringing the literatures together and laying out new empirics, we bring out the differences between then and now because the entrance of the Japanese in the 1970s and the Koreans in the 1980s into the world trading sphere is in many important ways different from the entrance of the Chinese in the 2000s.

This paper relates these differences to trans-Pacific differences in the relation between them and us, or more exactly between Asian low wage manufacturers and giant US corporations whose organisation and strategising has been changed by the pressures of financialization and the possibility of long transnational chains. When the Japanese sold cars in the United States in the 1970s and 1980s, the contest was a productionist one between compact nationally enclosed supply chains in Japan and Detroit with lower wages sustaining Japanese advantage so that firms like Toyota could reinvest profits and grow market share as they built their own brands. The position in the 2000s is complicated by financialization and long trans-Pacific supply chains where power is often wielded by US firms which act as proxies for the stock market and boost profits by multiple tactics which include control of design, consumer marketing and the use of contract power to take profits at the expense of margins in their Chinese suppliers. Our one case study, of Foxconn International Holdings and Apple Inc. can be no more than suggestive about these power relations and their impact on Chinese ratios. But, if repeated elsewhere in key sections of Chinese manufacturing, the implication is that Chinese firms will find it more difficult to become national champions and move up the hierarchy from low wage entrant to high image brand as Japanese firms like Sony and Toyota did in the 1980s or Korean firms like Samsung and Hyundai have done in the 2000s.

Thus, this is a paper about the intersect between shareholder value pressures in the USA and new forms of supply chain organisation which may result in different outcomes for successive generations of Asian entrants and established players. The hypothesis is that thirty years ago, favourable cost ratios built productive power in Asia, whereas now US financial power can drive ratios in China as well as the USA. In the macro aggregate, as we will demonstrate in section two, the Chinese have a larger ratio advantage arising from low wages than the Japanese enjoyed in the previous generation. But Chinese advance in key sectors can be impeded by financialized Western firms who control final markets and capture the profits of Chinese assemblers. This observation also raises *cui bono* issues about the how the rise of the post national corporate player changes the alignment between large corporate interests and the US economy. In an earlier generation, 'what was good for GM in Detroit was good for America' but now Apple's success from California is mostly good for the stock price in a sterile way because (like other insecure tech giants) Apple hoards cash and does little for US economy and society because its products add to the US payments deficit and the company does not employ well paid blue collar workers in the US.

1. Two literatures: financialization and the supply chain

If the world has become more complicated and interconnected, fragmented and balkanised, academic literatures have proliferated as groups of specialists discuss esoteric objects. One of the benefits of such specialisation is the rapid development of specialist knowledges. Thus the financialization literature is no more than ten years old if we date it from an *Economy and Society* special issue (Williams, 2000). But a voluminous literature now encompasses a broad range of themes and issues which describe and explain the growing influence of finance in our economy and on our individual lives. There are important differences within the financialization literature with respect to causes and outcomes at different economic levels. The question of causes has been well covered in academic debate, particularly within neo-Marxist publications (Arrighi and Silver, 1999; Arrighi 2003; Blackburn, 2008; Gowan, 2009; Lapavistas 2009; Sweezy, 1994). This paper takes a different tack and focus exclusively on results and outcomes, where we aim to develop our previous arguments about the mutable and contingent logic of financialization (Froud *et al.*, 2006). In this paper we are going to move beyond our previous arguments about conjunctural variability and instead look more closely at the effects of financialization on supply chains in a globalised world.

Put another way, our aim is to bring together two hitherto separate literatures because little has been written about supply chains from a financialization perspective. Most investigative studies of the results of financialization have focused on three main levels.

- There is a rich literature on the effects of financialization at a macro level. One group of authors has focused on the changing sources of accumulation, as in a context of declining returns from productive investment and overaccumulation, capital shifts from production to financial assets in search of superior returns (Krippner, 2005; but also Arrighi and Silver, 1999; Sweezy, 1994). Others focus on the impact of financialization on national institutional behaviour, most explicitly in a series of French studies which outline how the imperatives for shareholder value change corporate priorities and governance structures in a way that undermines domestic social compromises (Aglietta and Reberioux, 2005; Morin, 2000 and 2006).
- There is then another literature about the effects of financialization at firm level. The focus here is on the role of senior American corporate managers in accommodating shareholder value pressures, steering their firms from a strategy of reinvestment from retained earnings to one where labour costs are controlled and investment sacrificed to meet short-termist capital market demands for dividends and share price appreciation (Lazonick and O'Sullivan, 2000; Stockhammer, 2004; Crotty, 2007).
- A third set of literatures concentrate on the effects of financialization on the individual or 'the self', which takes either neo-Marxist (Martin, 2002) or a Foucauldian (Langley 2007 and 2008) form. The emphasis here is on how financialization becomes embedded in the everyday

practices of individuals, where perceptions about responsibility and risk-taking both influence behaviour, with deeply uncertain outcomes.

There is relatively little literature about the effects of financialization on supply chains, in particular about the specific issue of what happens when financialized Western firms meet non-financialized Asian assemblers and manufacturers. Although there is some academic work on clusters of firms, or sectors, (e.g. Leaver and Montalban 2010), there is relatively little research on how financialized pressures work through global supply chains, bar a few notable exceptions where we would highlight three interesting studies:

- The earliest example we could find was Gibbon's (2002) work on the sourcing decision of UK clothes retailers in the 1990s. He argues that UK retailers employed a retailerist strategy of 'milking cash cows' by laying on floor space to meet the return on capital employed (ROCE) expectations of the stock market, which in turn required a supply chain that could guarantee both volume and diversity.
- From a different perspective, Newman (2009) focuses less on stock market pressures and more on the growth of derivatives markets and how they have reshaped the coffee supply chain. He argues that speculative price fluctuations in the futures markets for coffee beans drive volatility back into the spot market for coffee, to the advantage of large, diversified commodity trading companies who deal in both spot and derivatives markets.
- Milberg (2008) meanwhile tries to reconcile Gereffi and Korzeniewicz's (1994) arguments about global commodity chains with Williams (2000) arguments about financialization to explain how lead companies in the US used offshoring (often to China) to lower input costs, increase scale economies and boost profitability without raising prices in final markets. This allowed lead firms to placate shareholders who benefitted from increased dividends and share buyback strategies; and, incidentally, increased the financialization of the American economy as new capital inflows from subcontractor economies like China indirectly provided the funds for many US non-financial firms to diversify into financial activities.

These three studies provide interesting argument and evidence about how financialization works through a supply chain, and this paper seeks to make a further contribution to this under-investigated area. Our contribution is distinctive because it is framed by our approach to financialization and its articulation in economy and society.

We doubt the functionalist accounts which presume financialization is a hostile, alien force which imposes itself on the national settlement, firm or individual with predictable and consistent outcomes. Some authors avoid determinism by arguing that financialized pressures are resistible. Lazonick and O'Sullivan (2000), Duménil and Lévy (2004), Boyer (2005), and Fligstein and Shin (2007) all differently argue that shareholder value is not some all-encompassing, inescapable force, but a rhetoric which elite managers choose to engage with and articulate for personal gain. Likewise others acknowledge financialization's contingent

expression: for example O'Sullivan's (2007) work on French capitalism emphasises how Anglo-American investors tolerated (and facilitated) the growth-oriented strategies of French PDGs. Yet despite such qualifications, there remains a sense at least that financialization is a unitary force to which actors accede and institutions yield, and where the limit to its 'pure' expression is the level of individual or institutional resistance it meets.

Our approach to financialization has been different in two respects. Certainly we would agree with the above authors that financialization is resistable, reversible and contingent, that agency matters and so accommodation is an important part of the story. However we would go further and argue that financial market sentiment and demands are framed by narratives as in the stock market story about a firm, its opportunities and achievements within its sector and over time. Arguably this trend has become more pronounced as analysts' valuations shifted from numbers-based arcana like the 'Quick Ratio' to more qualitative judgements about management and strategy over the last 20 years (Golding, 2002; Jackson, 2011). The result is that stock market demands are often inconsistent and rarely applied universally. This was certainly the case for new technology stocks during the dotcom boom, when the narrative about falling costs of information meant the stock market dropped any demand for profits and looked instead at potential growth measured by website clicks and sales increases (without evidence of profitability) (Feng *et al.*, 2001).

Because 'what the market wants' is as much a moveable discursive construct as a set of fixed financial targets, stock market expectations meet counter-narratives from corporate management and other relevant actors. Thus outcomes, in terms of share price or corporate reputation are part of an on-going negotiation which can recalibrate market perceptions and alter firm behaviour. As we have argued (Froud *et al.*, 2006). GE's "value destruction" through its low and declining ROCE was ignored by a stock market impressed by sustained quarterly earnings increases which corroborated a corporate narrative about reinvention through initiatives such as Six Sigma under the leadership of Jack Welch. From this perspective the job of corporate management in a context of financialization is to deliver both a convincing narrative of achievement and intent, and a supporting set of financial numbers, so that strategy can become a co-authored text. (Froud *et al.*, 2006). Producing the corroborating numbers (or a convincing narrative) is never easy, particularly when product markets are competitive, hence financialization involves setting corporate management on an often quixotic quest for value (however defined) which has complex outcomes.

Financialized Western firms have responded to difficulty in many ways, which include the offshoring of assembly and component production to low wage Asian economies and shipping back to high income markets. Such trans-Pacific chains were early achieved in garments and footwear but not in more complex products like cars where there was and is still a competition between assembly plants and supply infrastructure which in Europe or North America were nationally or regionally based and serving their home markets; Japanese transplants in the USA

did not displace large scale import from Japan. But, the rise of offshoring by Western firms in many other activities raises the interesting question about how financialized corporations use corporate power within a long supply chain.

The theme of power within a supply chain is the key concern of Gereffi and Korzeniewicz (1994) who emphasise the differences between buyer-driven and producer-driven Global Commodity Chains (GCCs) where lead firms play a dominant role in setting up decentralised networks or integrated chains respectively, with each having different input/output characteristics and different spatial organisation. Their emphasis on corporate power is valuable, but if financialized pressures present heterogeneously, their typology of networks and chains almost certainly over simplifies complex outcomes in terms of firm strategy and network structure. By the late 2000s, the issues need to be framed rather differently. We would avoid the assumption that behaviour is driven by a lead firm with a singular identity, defined by its position or activity function in the chain. We would also avoid discussion of the supply chain within a productionist paradigm where profits are earned in a technical or logistical way that doesn't account for shareholder value pressures. Above all we would want to explore empirically how the financial expectations of the stock market shape firm strategy, especially when strategy is multi-dimensional and the firm has several sources of financial advantage. In the case of Apple Inc., cost control and risk transfer works through low cost Asian assembly and crowd sourcing of the software apps, while heavy investment in branding and marketing of iPod, iPhone and iPad backs up a 'seduce and capture' retailing of affordable novelties which locks customers into utilities like iTunes software that impose high switching costs.

At the same time, an over preoccupation with illustrative case histories is one of the great weaknesses both of orthodox strategy and of the commodity chain literature. So we will begin in the next section by presenting some macro data about cost structures in world manufacturing since the 1970s. This provides an overview of the successive entrance of new Asian low wage producers with China in the late 1990s and early 2000s flowing on from Japan or Korea in earlier decades.

2. Macro ratios: Asian entrants with low wages

In considering the macro empirics about labour costs in manufacturing, we should start by going back nearly twenty years and recognising the academic misunderstandings about the sources of Asian competitive advantage and the strong assumptions we made about the logic of competition. Much of the confusion can be traced to Womack *et al.*'s (1990) influential book, *The Machine that Changed the World*, which attributed the success of Japanese car making to their ability to organise production in ways which delivered superior physical productivity, As Coffey and Thornley (2006) have recently argued, Womack *et al.*'s argument rested on a misreading of their own physical data of assembly plant productivity and, as we

argued at the time (Williams *et al.*, 1992), they ignored financial data on wages. When the Japanese moved beyond their protected home market, their international advantage in cars was based on producing in a low wage supply chain in Japan and then selling into high income markets, especially the USA, where prices were set by the requirements of high wage Detroit. More broadly, we then argued (Froud *et al.*, 1998) that low Asian wage costs plus free trade threatened to produce a crisis of cost recovery for manufacturing in Europe and North America because then logic of the macro numbers was the rise and rise of Asian producers.

In some of this work from the 1990s, we did consider the evidence about Korea. But time and events now open up a different, longer-term perspective on the advantages of low wages from the early 1970s to the end of the 2000s. The available data now allow us to consider the cost adjustments of the established Western producers, the longer-term trajectory of Japanese manufacturing in the twenty years since the end of the Hesei boom and the maybe game changing entry of the Chinese in the 2000s. As we will argue below, in this longer-term perspective, the story is more nuanced. The empirics below suggest a moderation of national cost competition between the established players as European and North American cost ratios adjust downwards and Japanese advantage is eroded by rising wages and exchange rates. But, from a macro perspective, the story of new entrants does seem to be replayed again and again: Chinese manufacturing has a competitive entrance advantage arising from low wages and low labour share just like the Koreans and Japanese a generation before.

In making the long-run comparison, we return to social accounting through a value added framework which was used in our earlier work (Williams *et al.*, 1995; Feng *et al.*, 2001) as the basis for a stakeholder analysis of claims on corporate revenues. For the purposes of this paper, the key ratios we will focus on are value added (VA) and labour's share of value added (LSVA) because value added is the lump from which all internal stakeholders are paid (in-house labour, capital investment, depreciation charges and return to investors), whilst labour's share of the VA fund is normally the most sizeable stakeholder claim in any manufacturing or assembly firm. The calculation requires an understanding of some basic accounting relations and a recognition that the calculation is complicated by national differences on what companies have to disclose: for example, some US companies, depending on State jurisdiction are not required to disclose their direct internal labour costs, whilst most UK companies do not release a direct figure for external purchases:

- Sales (S) or total revenue is the top line in the profit and loss account.
- Value added (VA) is calculated from company accounts or 10k's and can be worked out either by adding or subtracting key financial categories:
 - i. Using subtraction: $VA = \text{Sales (S) minus external purchases (P) (including contract labour) } \underline{or}$

- ii. Using addition: $VA = \text{Labour costs including social charges (L)} + \text{cash surplus (C)}$ (calculated as depreciation and amortisation + interest paid + profit retained & distributed).
- Cash Surplus (C) is the lump of income that is left when external purchases and internal labour costs have been subtracted. Or in more simple terms: $C = \text{Sales (S)} - \text{Purchases (P)} - \text{Labour Costs (L)}$.

Within this frame, we can construct a stakeholder analysis because the wages of workers, the reinvestments of management, and distributions to shareholders or other owners all represent competing claims on the same limited VA fund. Thus value added analysis can be used to analyse stakeholder conflict between the claims of workers and other priorities, in railways, the NHS and manufacturing (e.g. Shaoul 1999). More recently it has been developed to show how and why it is difficult for firms to deliver what the stock market wants, when the creation of shareholder value through distribution is (partly) constrained by the size of the value added fund (Froud *et al.*, 2006; Haslam and Gleadle, 2010).

Within this frame, a high labour share of value added (LSVA) is a constraint and burden for firms or sectors and a low labour share is an opportunity or advantage for firms. In Western manufacturing organisations, cost recovery is achieved by maintaining LSVA ratio at the historic norm of around 70%, which allows employers to pay wages which attract and retain semi-skilled labour and also generate a modest surplus which covers other stakeholder claims. Above the 70% threshold, firms cannot easily generate cash surpluses for reinvestment and distribution; and in those situations where the threshold is breached, firms experience pressure to restructure. In high income, high wage Western economies, LSVA above 70% therefore acts as a **firm constraint**, with management pressured by investors and coerced by dwindling retained earnings to downsize labour or bargain wage freezes or cuts. By way of contrast, an LSVA under 50% represents a **firm opportunity**. This is because the larger cash surplus provides significant opportunities for process and product renewal, for aggressive pricing or expensive marketing to gain share and for rewarding shareholders through dividends or buybacks.

From this point of view, the entrance of low wage/low share (Asian) competitors, specifically Japan after the 1970s, was profoundly disruptive of earlier assumptions about the form and nature of international competition. From the end of World War Two to the beginning of the 1970s, it was widely assumed that manufacturing competition would intensify between the high wage nations. In classic 1950s reports, the OECD and the Anglo-American Council on Productivity in the 1950s emphasised the importance of meeting the challenge of US productivity success. While a new management literature in the 1960s made a connection between US success and organisation through the US giant, M-form corporation (Chandler 1962) which Europe should emulate (Channon, 1973). All this was changed by the entrance of (Asian) competitors, especially the Japanese whose low wages and low labour share gave them

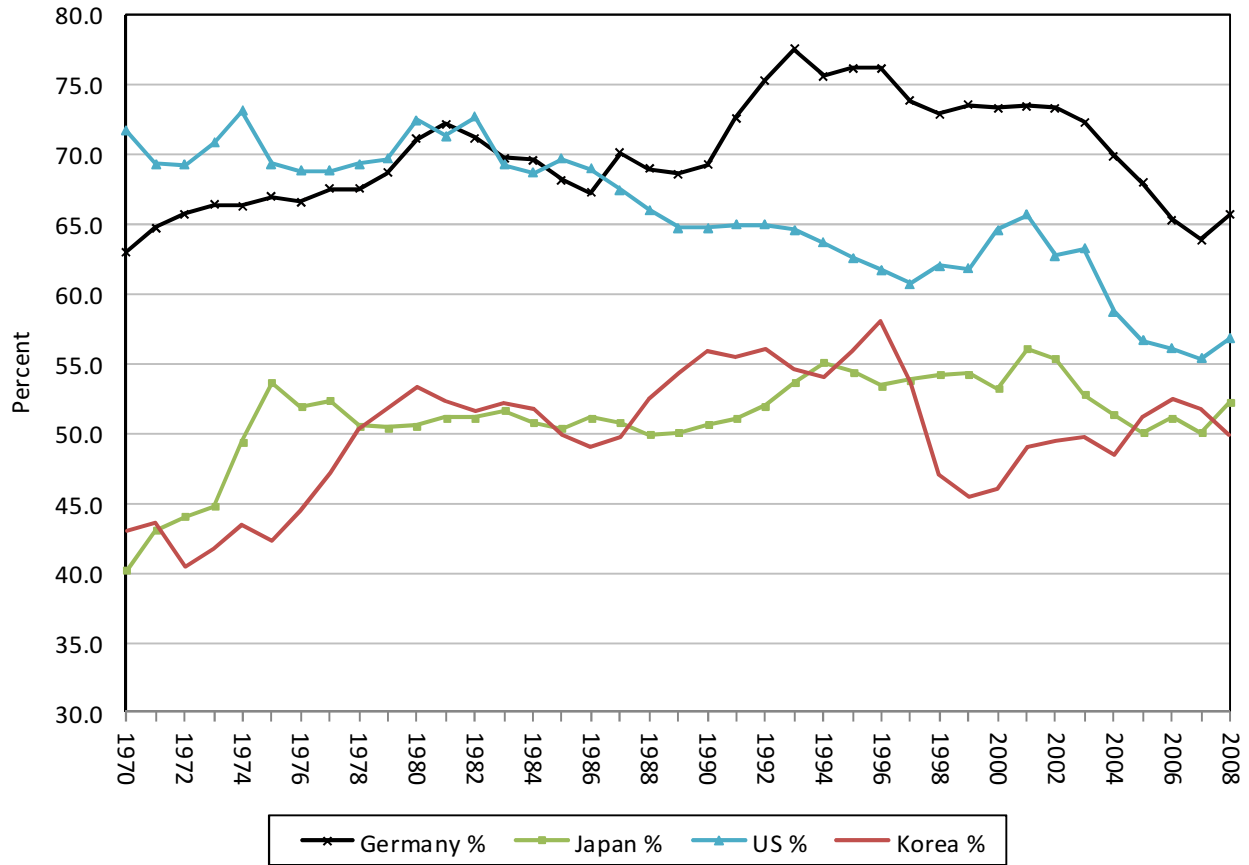
the cash surpluses to invest in dramatic improvement in product and process, heavy investment in marketing and branding, the rapid expansion of distribution networks which may allow a new entrant to become established as a global player very quickly. Firms like Toyota and Sony built their productive power and global brands in cars and electronics while US M-form businesses struggled through endless restructurings. The expansion of Japan's global reach had the opposite momentum as productivity levels were boosted and cost reduced with fully loaded factories working at capacity; while transplant production was an acceptable cost paid for protecting lucrative exports.

A ratios analysis of national manufacturing sectors then tells us much about how and why Japanese and Korean entrant companies became global players so quickly; and this was the story we told in the mid-1990s (Williams, *et al.*, 1995). The time series on LSVA for Germany, Japan, Korea and the USA since 1970 is presented in figure 1. Japan's manufacturing advantage is great in the 1970s and 1980s because their manufacturing sector's LSVA was around 40% compared to the US norm of 70%. Even by the time of the Plaza Accord in 1985 when the US Dollar was deliberately devalued against the Yen, Japanese manufacturing LSVA was around 50% and the US's around 70%, with average employee wages in dollar terms half that of the US (Williams, *et al.*, 1992). From the West's point of view, it was not only Japan but also Korea that posed a threat. Korea's LSVA was 35% in cars or electrical engineering in the 70s and 80s empowered another generation of entrant companies like Hyundai and Samsung in the 1980s. At this same time many European competitors were struggling with a variety of shocks, ranging from oil price rises, recession and high social charges so that German LSVA exceeds 75 % for most of the 1990s.

But of course, the time series carries on after the mid-90s and, figure 1 presents the time series for four national manufacturing sectors up to 2008. From this we can see that the story in the first half of the 40 year period about new entrants and sustained difference in national manufacturing ratios is very different from the second half story of the past twenty years about muted competition and convergence in national ratios in the past twenty years as the Japanese ratio increases and (equally significant) the US and even the German ratios decline. After the Plaza Accord, the Japanese encountered a series of inter-related problems which made them look increasingly Western: rising exchange rates which made their exports more expensive in dollar terms, labour shortages pushed up real wages and shareholder value pressures emerged for some corporations, particularly those like Sony that had raised capital in the US markets via American Depositary Receipts. As a result, Japanese LSVA also rises, with some cyclical variation towards plateau of 55%; and, equally interestingly, the Koreans have a cyclicity problem and can only get their ratio towards or below 50% at the top of the economic cycle. As for the US and the Germans, the curves show that their ratios are coming down to meet the Japanese coming up in the opposite direction. In the long run view, the US manufacturing LSVA has been declining unsteadily from a 70% level since the early 1980s and reached 55% in 2007;

the German decline started later but there is a full 10 point difference between the 75% level of the early 1990s and the 65% level of the early 2000s.

Fig. 1: Labour's share of value added 1970-2008.



Source: OECD.Stat Extract.

There is much interest and some ambiguity in this story of ratio convergence amongst established manufacturing producers. The main indisputable point of interest is that the ratio convergence eroded any Japanese advantage in terms of cash surplus. The consequences at firm level for the Japanese are very clear. Firms like Toyota and Sony, which had once reached effortlessly up and across national markets, began their long descent into average producers of nondescript products for older, conservative customers (just like GM 25 years before); Toyota's product recalls symbolised its failure to control quality while Sony's meagre profits demonstrated its inability to generate surplus.

The causes and consequences of US and German success in controlling labour's share were much more ambiguous. The long decline of LSVA in the USA indicated that Reaganite reforms and new competition could squeeze blue collar wages. But, at firm level, there are subtler developments which limit labour's share in Germany as much in the USA. Firms like car assemblers become adept at finding new revenue streams from credit and finance, while choosing indirect competition by focusing on sectors like light trucks in the USA (Froud *et al.*,

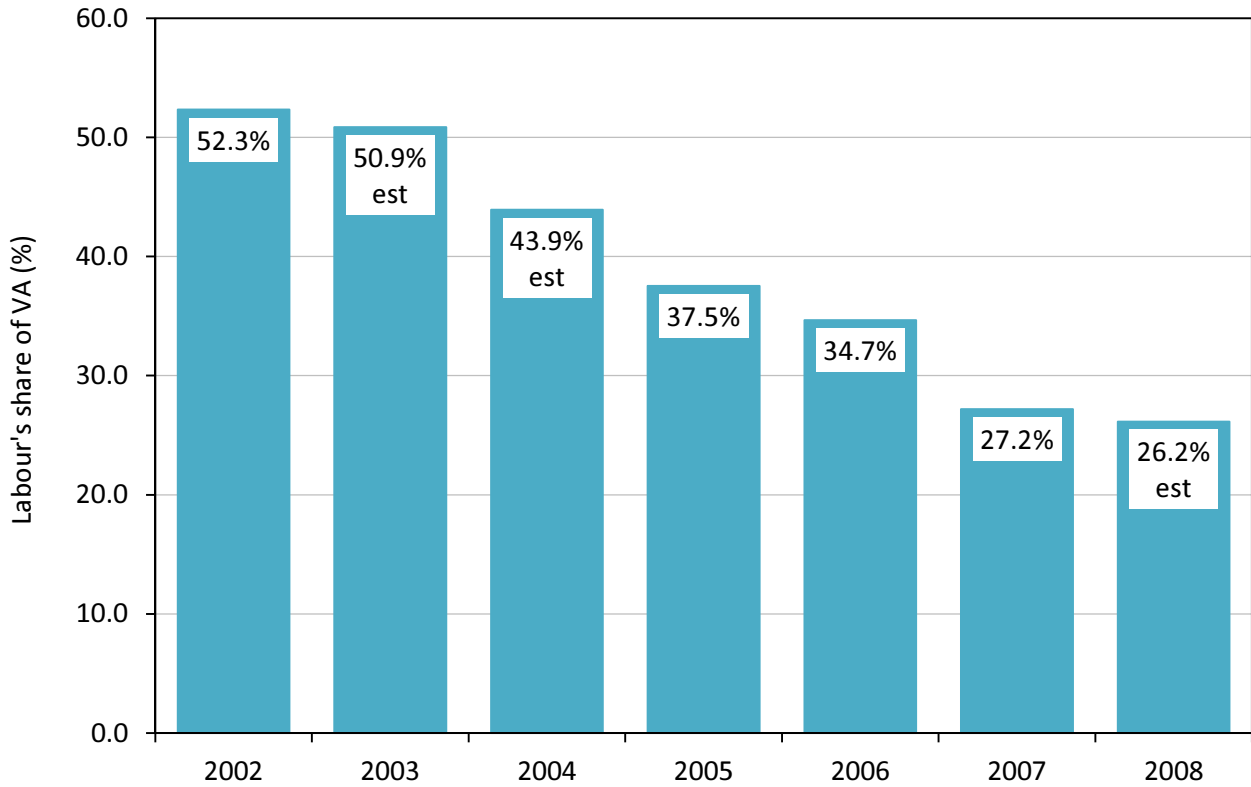
2006). The companies also increasingly incorporated sourced components from low wage production areas or actually shifted production overseas to again get the benefits of cheap labour. Above all, in all the high income countries, the national portfolio of manufacturing activity was being shuffled as unprofitable, competitively exposed sectors declined and what remained could not grow fast enough to stabilise employment. The result in the UK case was financial success through productive retreat because manufacturing LSVA was not a problem but there was no sustained growth in manufacturing output over the 40 years from the early 1970s while manufacturing employment in the UK fell from 7 million in 1979 to 2.7 million in 2008 (Froud *et al.*, 2011).

But, on the long view, the story of Japanese manufacturing over 40 years is one of incomplete and aborted revolution because ratios built corporate power in the 1980s but that power could not be consolidated by Japanese firms because their LSVA ratio went up, their cash surplus went down and the balance of advantage changed. That result offered very little respite for the national manufacturing sectors of the West, if new entrants like the Koreans were already following on behind and if the Chinese or Indians, with their much larger populations were to be next into the manufacturing game. Thus, in the early 2000s, some commentators argued that the entrance of China and India would open a new and much more threatening phase of low wage competition. Kaplinsky (2001) argued that China and India would fundamentally alter the competitive dynamics and the geography of the global economy because a smallish country like Japan had managed to capture 40% of the US car market in 25 years, despite rising real wages as its labour market tightened. In the case of China, such adjustment was distant because the pool of cheap labour and the reserve army of poor agricultural workers were much larger.

Fast forward a decade and, if we make a ratio analysis, Chinese manufacturing is performing in a way which is consistent with Kaplinsky's scenario. Given the limits of Chinese statistical sources, it is not easy to produce a robust time series of LSVA in the national manufacturing sector. Figure 2 provides estimates for seven recent years based on imputing estimates of wages and hours worked which apply to large establishments (not small workshops) and cover the more developed areas. The results are, in our view, reliable within an error margin of 5-10% for the sub sector which they cover and the trends are accurately captured. On this basis, China represents a repetition of low wage entry but in more extreme form. The Chinese manufacturing LSVA ratios are currently at an extraordinarily low level of 27.2% in 2007 and an estimated 26.2% in 2008 and are considerably lower than the 40-45% ratio of the Japanese or Koreans in the 1970s and 1980s (see figure 1). And this low share is the result of an unprecedented recent rapid expansion. The series shows China's LSVA has fallen from a ratio of 52.3% in 2002 to 26.2% in 2008, despite rising real labour costs per employee. As table 1 shows, China's average hourly wage in manufacturing more than doubles from \$0.72 per hour in 2002 to \$1.81 per hour in 2008. But the same exhibit demonstrates that, with numbers employed running steadily around 100 million + or - 10 million, the lump of VA produced by

Chinese manufacturing more than trebles. Numbers employed actually fall as value added doubles in three years from 2005. VA per employee in Chinese manufacturing rises from a nominal 32,772m Yuán in 2002 to 143,506m Yuán by 2008.

Fig. 2: Chinese manufacturing's labour share of value added 2002-2008.



Note: Data refers to large urban units and 2003, 2004 and 2008 are authors' estimates.

Sources: National Bureau of Statistics, Beijing and Monthly Labor Review, Bureau of Labor, Washington.

These calculations raise questions about the stability and the consequences of this trajectory. Low labour share is not so much an attribute of Chinese manufacturing as a corollary of a trajectory of expansion; and, if expansion were interrupted by faltering demand or exchange rate appreciation, the result might be much more severe than a descent into the average levels. Certainly, the high wage West is clearly unable to compete with such impressive ratios, and the results include not only large scale import of goods from and exports of jobs to China plus Chinese cash reserves that, until recently, were recycled back into dollar denominated assets so as to prevent the appreciation of the Yuán-US\$ exchange rate, which would erode China's competitive advantage (Milberg, 2008). The question to be answered is whether China in the 2000s will repeat the experience of Japan, moving from low wage manufacturing to competition with other global brands in final markets? From the ratios, we might expect to see Chinese firms like Huawei or Geely to follow on rapidly from the Koreans, albeit at a faster rate because of the even lower labour costs. But as we shall see in the next section, Western corporate power may now seek to prevent Chinese firms moving up the escalator.

Table 1: Chinese manufacturing employment, labour costs, value added and hourly wage rates 2002-2008

	Annual labour cost per employee	Employed	Value added	Value added per employee	Average hourly rate	CNY/\$ exchange rate	Average hourly rate in US\$
	Yuán	Mill.	Yuán mill.	Yuán	Yuán	Yuán per US\$	\$
2002	17,152	100.68	3,299,475	32,772	5.96	8.2770	0.72
2003	20,829	102.54	4,199,023	40,950	7.23	8.2770	0.87
2004	22,668	106.19	5,480,510	51,610	7.87	8.2770	0.95
2005	24,506	110.59	7,218,699	65,274	8.51	8.2770	1.03
2006	28,030	112.63	9,107,573	80,863	9.73	8.2770	1.18
2007	32,519	97.91	11,704,840	119,547	11.29	8.2770	1.36
2008	37,533	99.01	14,208,551	143,506	13.03	8.2770	1.57

Notes: Based on large urban units and includes authors' estimations.

Sources: National Bureau of Statistics, Beijing, and Monthly Labor Review, Bureau of Labor, Washington.

3. The difficulties of Foxconn International Holdings

If we shift from macro aggregates to company cases, it is much more difficult to be optimistic about Chinese manufacturing prospects for upward mobility towards competing on brand with established Western firms. The resources of generally favourable national ratios in manufacture are an advantage that can be negated in key sectors by Western firms which aim to relegate their Chinese partners to permanent junior assembler status by leaving them with nothing to invest in or no investment funds. This can be done in two ways. The first option is illustrated by the Sino-foreign joint ventures in car assembly (like SAIC) which hold more than 75% of the Chinese domestic car market and make almost no exports. Here, the dominant Western partner retains the intellectual property and know how in product and process, so that the Chinese subordinate may make profits but has no easy pathway to upward mobility through own account strategic investment in, for example, power train manufacture. The second option is illustrated by electronics assemblers like Foxconn International Holdings (FIH) which can derive little benefit from assembling premium products like smart phones for sale in Western export markets. The instrument of subordination here is the contract with the dominant Western partner which ensures the assembler makes little profit so that the Chinese

subordinate again has no easy pathway to upward mobility because, just as in a failing Western firm, reinvestment funds are limited and defensive restructuring takes priority.

The story of the development of Sino-foreign joint ventures in car assembly has been told in Eric Thun's (2006) book, so we will concentrate on the case of Foxconn International Holdings (FIH) in electronics assembly which usefully provides a purer illustration of the logic of financialization. FIH is the assembler of choice for hand held smart devices; its customers include Apple Inc. and other Western companies including Amazon, Nokia and Motorola so that five large Western companies account for more than 90% of sales. As background, FIH is a subsidiary of Taiwan's Hon Hai, which is the world's largest contract assembler, employing over 1 million people in total. FIH is domiciled in the Cayman Islands and listed on the Hong Kong stock exchange. It is Hon Hai's principal handset manufacturer and assembler, with the vast majority of their 126,000 workforce located in China, and with most of those in the Guangdong Province. FIH is a separate company from Foxconn which manufacture computers and consumer electronics and Foxconn Technology who are a light metal and thermal manufacturer and assembler. The key point here is that FIH are in a different power relation to the Japanese firms of the 1970s and 1980s whose supply chain was principally nationally based. Chinese firms like FIH generally assume a subcontractor role for a large US brand, so the supply chain is trans-Pacific not national, and their position within that chain is a subordinate one to that of lead US firms like Apple.

Chinese manufacturing has a generally low LSVA ratio and FIH is engaged in production for export in a fast-growing and innovative market segment where skills are required for production for export, so it is not unreasonable to expect the company to post impressive profits. But, if we turn to FIH's report and accounts, the Chairman's statement in the most recent FIH annual report reads as though this was a mature US or Japanese company under pressure to restructure:

“Several factors challenged our business in 2010 and disappointing financial results have created a deep sense of urgency for the management team and across the Company. We have taken drastic measures to better cope with market dynamics and barring any extraordinary event, I believe we are well positioned to return to profitability in 2011”.
(FIH Annual Report, Chairman's Statement, p.4)

Such a downbeat assessment came off the back of five profit warnings issued by the company between August 2008 and June 2010, and a share prices which fell from a high of 27.55HK\$ in October 2006 to just 5.78HK\$ by the start of 2011.

All this is not what we would expect from traditional ways of understanding market power. Porter (1980, 1985) emphasised the importance of corporate size and industry concentration as a key 'force' in understanding the relative profitability of a sector, but he never really had an explanation for how this played out for subcontractors locked into dependent relations. By the

measure of size, new corporate giants like FIH should be well positioned since the parent, Hon Hai is the world's largest electronic component manufacturer and FIH its subsidiary is the world's largest contract handset assembler, competing against a maximum of five other companies that can combine both scale and price that FIH offer. But this is a dependent relationship, with their status as corporate giants secondary to their ability to bargain with Western businesses largely dictating price and insist that the burden of adjustment in the fast moving competition between final products are borne downstream.

The first and most important exhibits are the set of ratios in table 2 and figure 3. In a period in the 2000s when, as we saw in the last section, LSVA was generally falling towards 25% in Chinese manufacturing, FIH's LSVA was increasing from just above 25% towards traditional Western levels of 70%.

Table 2: Foxconn International Holdings financial, productivity and profit performance 2005-2010

	Sales	Value Added	Pre-tax profit	Value added per employee	Pre-tax profit on sales	Employees	Sales to the 5 largest customers	Sales to the Largest customer
	\$mill.	\$mill.	\$mill.	\$	%	No.	%	%
2005	6,365	813	419	13,765	6.6	59,070	n/a	n/a
2006	10,381	1,321	786	11,929	7.6	110,697	94	59
2007	10,732	1,030	356	8,310	3.3	123,917	94	39
2008	9,271	1,188	197	10,971	2.1	108,237	93	43
2009	7,214	878	71	7,398	1.0	118,702	93	29
2010	6,626	799	-176	6,306	-2.7	126,687	91	28

Notes: Data includes a small number of non-PRC subsidiaries.

Source: Foxconn International Holdings (Cayman Islands) annual reports.

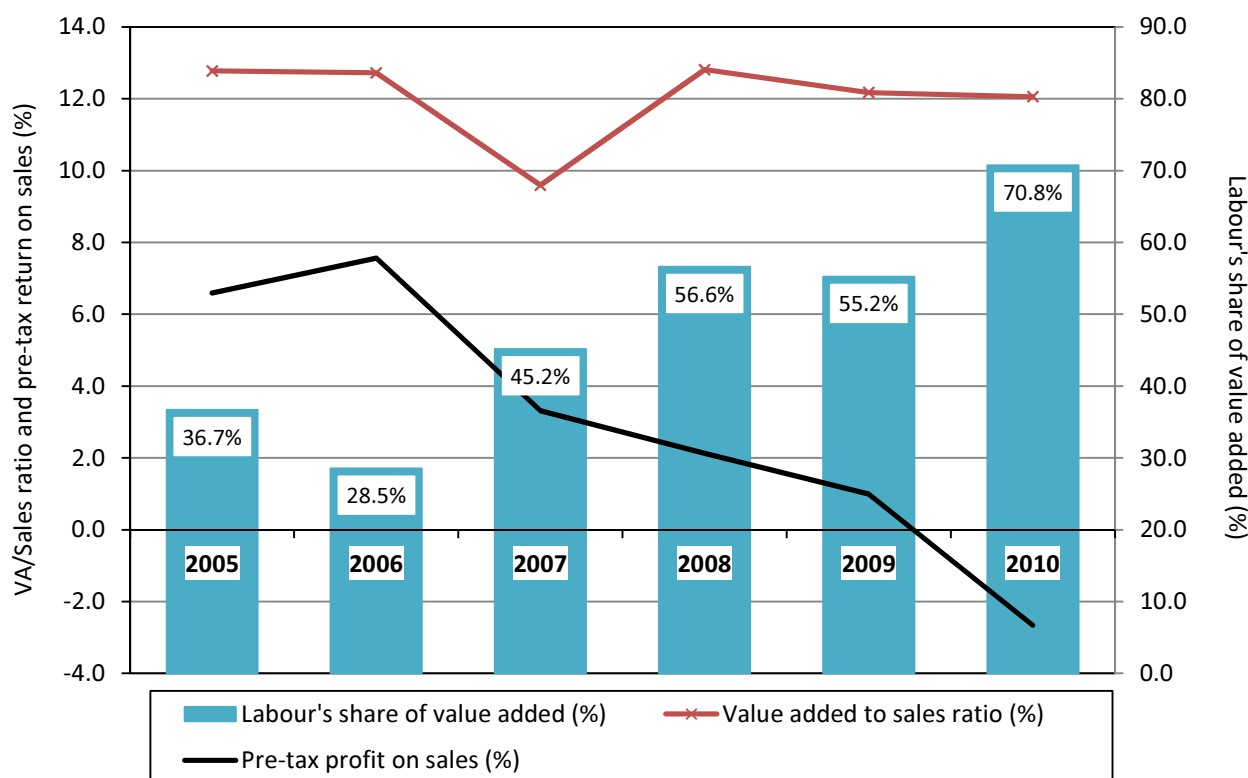
By any measure, the assembler's productivity performance was dire as both sales and value added fell by around one-third after 2006-7 while numbers employed were not reduced. The result is collapsing productivity: in sales per employee terms, FIH's productivity falls from \$107,753 per employee in 2005 to \$52,302 per employee in 2010; and in terms of value added per employee from \$13,765 per employee to \$6,306 per employee over the same period. This halving of productivity relates to sudden shifts in the market and the rise of smart handheld devices which were more sophisticated and time consuming to assemble under contracts which effectively penalised FIH for spending more time on assembling each device. The

changes also meant increased specialisation which forced FIH to abandon non-smartphone production, which lost them a market segment that had been cash generative.

If the Western companies that designed and marketed their devices passed the burden of assembling more complex devices onto FIH, then FIH passed the burden of adjustment onto its workforce in ways which created problems about work intensification, health and safety which became a problem for FIH's highest profile customer Apple. Most of the workforce lived in dormitories in factory towns built entirely by FIH, and which also contained shops, restaurants and other services. The pervasive presence of the factory across all areas of life created the anomic conditions under which suicides proliferated – so that by 2010 this had become a material concern, not just for FIH but also for Apple as it received much negative publicity (FT, 17 July 2010). Responsible health and safety procedures also became difficult to operate in an environment of squeezed margins and intensification. The disastrous results included an explosion in Foxconn's Chengdu plant which killed three workers; while 137 workers at another Apple supplier Wintek were poisoned; and Apple's Chinese sub-contractors were accused of widespread pollution (FT, 8 September 2011).

At the same time as FIH was being pressured on the demand side through unfavourable contracts which increased LSVA, Western firms were also pressuring FIH to pay higher wages. This push came from two sources. First, the negative publicity around the suicides and explosions meant reputational damage for Apple, who subsequently pushed FIH to improve conditions and boost wages without apparently offering any leeway on contract prices to accommodate the rising costs (FT, 8 June 2011). The Chinese state also pressured FIH to increase wages as a response to the global economic slowdown and the shrinkage of end markets in the West because higher wages would help build a home market for their domestically manufactured goods. FIH therefore increased wages by 30% for the majority of workers, and 66% for workers with particularly desirable skills (FT, 27 October 2010).

Fig. 3: Foxconn International Holdings value added to sales ratio, labour’s share of value added and pre-tax return on sales



Source: Foxconn International Holdings (Cayman Islands) annual reports.

They also began to recognise Trade Unions, allowed workers to elect their own officials and accepted some local wage bargaining in their factories (FT, 6 January 2011). This is the background to the profits warnings and the financial crisis of 2010 which pushes FIH to further cost saving strategies, such as moving production inland to provinces like Anhui, Jianxi and Hubei where labour costs are even cheaper (FT, 18 November 2010) or offshoring to Indonesia and Vietnam where wages are now lower than at some Chinese sites (FT, 10 February 2011). They are also trying to substitute capital for labour by investing in automated robots, which will rise from 10,000 to an estimated 300,000 by 2013 (FT, 2 August 2011).

If the contract or joint venture deal is a means of control by Western firms, the Chinese state (central and local) must also take some of the blame because it has never sought a balanced relation between the domestic and export markets. The contrast here is with Japan in the 1970s and 1980s where the development of Japanese manufacturing was geared to two brand-led goals which would provide a secure and steady revenue base for their producers: to provide low cost alternative manufactures to Western export markets, and to produce low-cost goods to stimulate local demand in the domestic market (Williams *et al.*, 1995). China, by comparison, has concentrated on the one goal of developing exports. Until recently, the government has opted for a policy of restraining domestic demand through fears that rising labour costs would both undermine their national competitive advantage and inject

inflationary pressures into the domestic market. For this reason China has kept wages low: wages and salaries as a percentage of GDP fell from 57% in 1983 to just 37% by 2005 through to 2010 – one of the lowest in the capitalist world (FT, 4 June 2010). Whereas Japan always had a domestic demand base for final products, China has instead tended to produce intermediate ‘white label’ goods or components for a variety of brands or retailers in the West, rather than develop branded goods for their domestic market; in autos, the relation is reversed and the *de facto* outcome is import substitution through local assembly. These government policies fitted well with the strategies of Western firms aiming to lever profit from outsourcing production to low wage assemblers or tapping the Chinese domestic market.

But, when all this has been said, there is nothing new about the subordination of suppliers through power relations which is a familiar theme throughout the history of the textile and garment industries. Remember the textile manufacturing “putter out” of the industrial revolution period that, in Marglin’s (1974) classic article, held the business in his head and gained advantage over his subcontractors by operating a political division of labour. Or consider the CMT model (cut, make, trim) traditionally found in the garment industry. The relation between FIH and Apple is much like that between a CMT firm which controls assembly while the lead firm controls design, purchasing, distribution and retail. For the subcontractor this model narrows the scope for productive intervention and squeezes margin because the subcontractor cannot lower the cost of external inputs or bypass the lead firm to reach retail. The onus therefore is on the subcontractor to control internal costs and find internal productivity gains to increase margin or absorb rising costs. The precondition for success is volume and full capacity because lower demand has a dramatic effect on costs and profit and all the risk falls on the subcontractor. FIH faces such a situation: increased wage costs which cannot be passed onto the customer and there are few simple productivity gains that will negate these pressures. The novelty of course is that ‘putters out’ or dress designers do not ordinarily become hugely profitable giant companies like Apple.

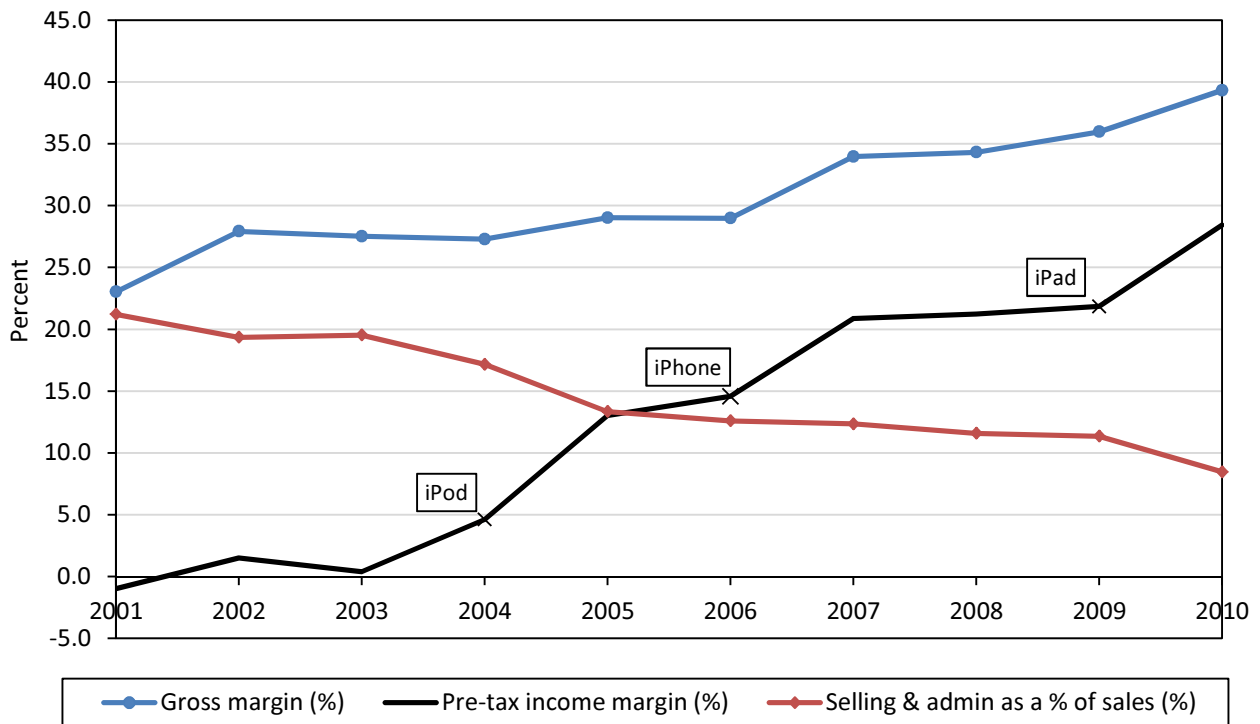
4. Apple’s success?

The relation of supply chain subordination and the (contractually imposed) miseries of Foxconn are nothing new. But, there is something starkly new here because (at the other end of a new Trans-pacific supply chain) is not a ‘putter out’ or dress designer but giant US public companies, of which the largest and most profitable is Apple with a current stock market value of \$343 billion and by mid-2011 it briefly became the world’s most valuable company. This apparent paradox of assembler misery and brand wealth is inherent in Apple’s financialized business model. Apple is not a fundamental innovator but lives precariously through tactical innovation which has anticipated/ created consumer wants for a succession of handheld devices (iPod, iPhone, and iPad) assembled from generic components. These affordable devices command premium prices and sell in huge volume: on our calculation, the iPhone 4 had a gross margin of 72% or \$452 on a selling price of \$630 (Apple 10k). This jackpot business model is inherently

fragile because it is always dependent on the next hit product, and this fragility is countered in several ways by a multi-dimensional business model which involves minimising cost and maximising revenue streams from hardware devices and software products. Some revenue streams are more robust and utility like because customers are locked in, like the owners of the 300 million iPods sold over the past decade who have to download from iTunes. While corporate power is used evenly against assemblers, crowd sourcers, content producers and device retailers so that Apple maximises financial advantage and can build up reserves (of \$76 billion by 2011). Reserves allow adventures like bulk purchases of components such as flash memories (FT, 30 August 2011) and allow cash acquisitions of companies or portfolios of patents (Ong, 2011) whenever circumstances change. If premium prices traditionally meant latitude for partner suppliers in industries like car assembly, Apple operates on a different logic.

At single company level over the decade since 2000, Apple has been hugely successful in delivering what the stock market wants because, almost uniquely, Apple combines high margins with spectacular, sustained revenue growth. Apple's pre-tax profit to sales margin rises from under 5% in the early 2004 to just below 30% by 2010, while revenue grows from \$13,931m in 2005 to \$65,225m in 2010, with operating income rising from \$1,650 to \$18,385. The five-fold increase in sales and eleven-fold increase in operating income was driven by the tactical innovation of iPod, iPhone and iPad because, as figure 4 demonstrates, each new product improves pre-tax income by 5-7½ % percentage points. Apple has been rewarded with the status of stock market star and (like other tech stock stars) does not pay dividends or buy back its shares but instead retains its earnings and hoards cash. Apple Inc. rose from 287th to 1st place in the S&P500 ranking over a 10-year period between 2001 and 2011, overtaking the market capitalization of oil and gas conglomerate Exxon Mobil in August 2011 (Crum, 2011). As of April start, Apple's market capitalization of \$588.95 bn is around 122% more than that of its nearest tech sector rival Microsoft at \$265.15bn.

Fig. 4: Apple Inc.'s margin on sales and selling and admin costs 2001-2010



Source: Apple Inc. 10k.

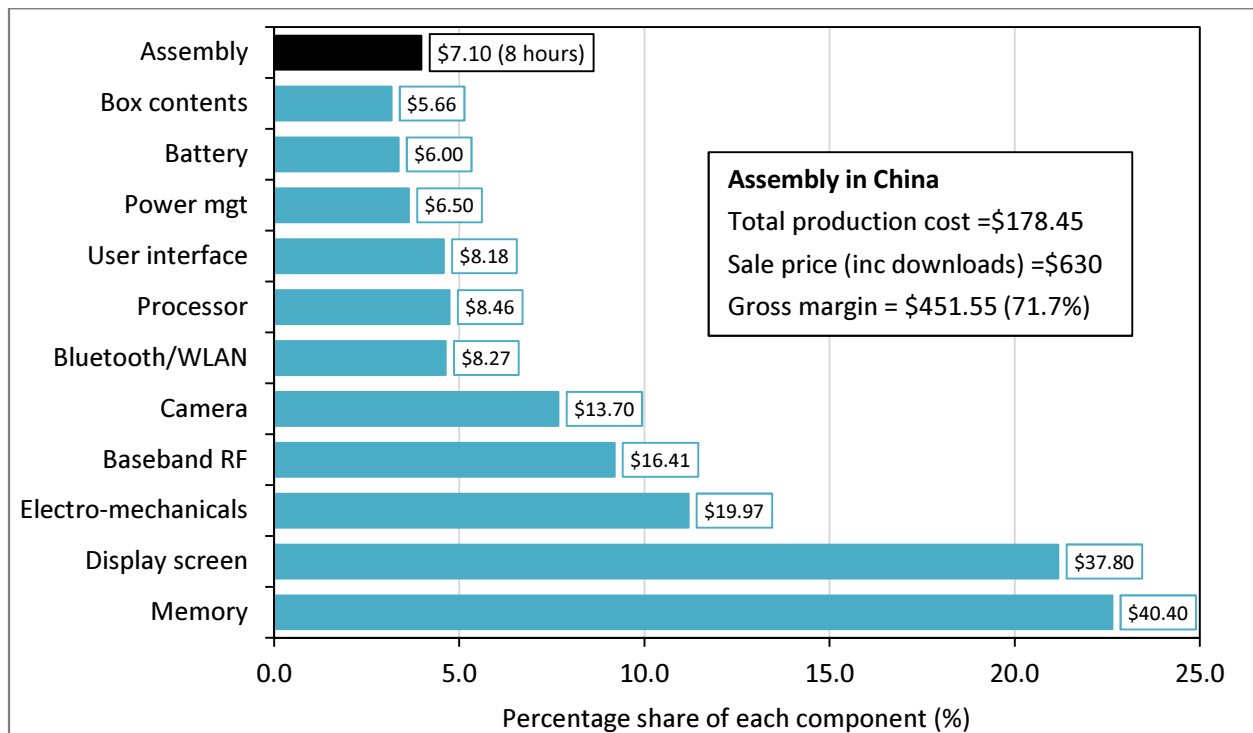
The stock market's verdict is positive about what's in the price and the main concern is with whether and when Apple will stumble going forward and shift the price. Hence the analyst's focus is on Apple's next product announcements like the iPhone5 or iPad3, on Apple's ability to enter new markets like the Smart TV market and on the value of the brand halo (e.g. Morgan Stanley, 2011). From a stakeholder perspective, the verdict on the record so far is much more mixed because Apple has for a decade delighted consumers and shareholders through a financialized business model which is less than pleasing for suppliers like FIH and many others up and down the supply chain. But the verdict on Apple's record has to be much more negative if we take a broader social perspective on distributive outcomes and ask what the trans-Pacific chain implies for the US national economy. Because, put simply, the trans-Pacific chain and the financialized Apple business model imply the large scale import of goods which adds to the US trade deficit and the significant export of US blue collar jobs which the US economy needs. Even the simplest comparisons suggest that Apple is adept at avoiding the social obligation to provide secure, internal, high quality employment of the kind which major US corporates have traditionally delivered. Microsoft the utility software provider directly employs 90,000 globally which is more or less exactly twice the 46,000 employed by Apple whose hardware plus software offering is inherently more labour intensive.

The huge literatures (popular and academic) on Apple offer endlessly repetitive accounts of Apple's brilliant corporate success under Steve Jobs' leadership, sometimes qualified by worries about conditions at FIH and other suppliers. Fairly predictably, there is almost no

political arithmetic on the social costs of the trans-Pacific chain for the US national economy. The honourable exception is the Asian Development Bank Institute article by Xing and Detert (2010) which presents single product calculations that show how the Apple business model increases the US trade deficit and decreases US employment. The product is the iPhone 3G which in 2009 sold 11.3 million units in the US market and 25.7 million units globally. Xing and Detert’s calculate that just one product, the iPhone 3 contributed \$1.9 billion towards the US trade deficit with China; though, when they use assembly value added as the numerator (excluding German, Japanese and US components imported into the PRC for iPhone assembly), the magnitudes are smaller. Their most interesting finding is that Chinese workers add no more than US \$6.5 to each iPhone 3 which is no more than 3.6% of the shipping price of an iPhone. The implication is that the high margin iPhone could be profitably assembled in the United States or any other high wage country and “it is the profit maximization behaviour of Apple rather than competition that pushes Apple to have all iPhones assembled in the PRC” (Xing and Detert, 2010, p.6)

In our view, the problem is more exactly the internalisation of shareholder value pressures, and to illustrate the point we present below a kind of thought experiment about a different Apple (without shareholder value) which was willing to accept lower margins and employ more US blue collar labour. Figures 5 and 6 are based on industry tear down analysis by iSuppli of the Apple iPhone 4G.

Fig. 5: Share of production cost of an Apple 4G iPhone assembled in China

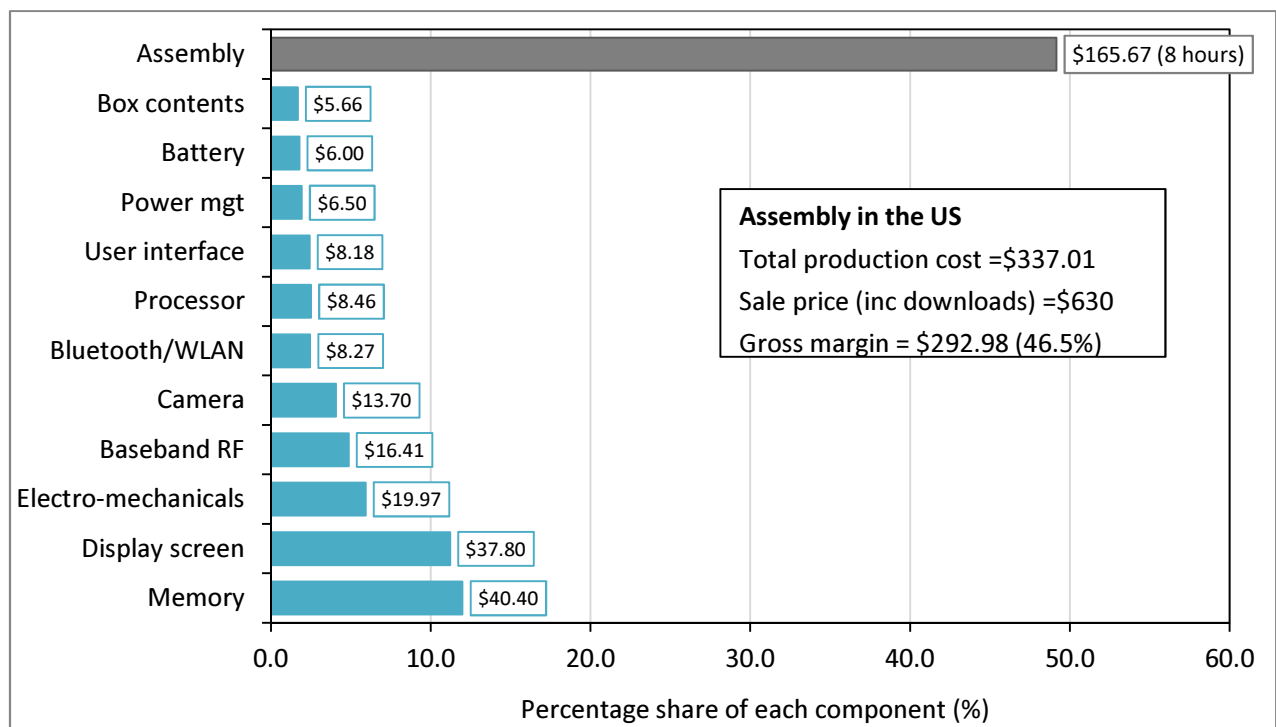


Notes: Excludes software, licensing, royalties.

Sources: iSuppli and Apple Inc. 10k.

The first exhibit details the actual costs of building an iPhone assembled in China. As is apparent, the labour costs are a relatively small part of total costs at \$7.10 (which helps Apple generate a very high gross margin on the product of 71.7% when the handset is priced at \$630 and the production costs are \$178.45 (Apple Inc. 10k and iSuppli <http://www.isuppli.com/Teardowns/News/Pages/New-iPhone-Carriers-171-85-Bill-of-Materials-IHS-iSuppli-Teardown-Reveals.aspx>).

Fig. 6: Share of production cost of an Apple 4G iPhone assembled in the US.



Notes: Excludes software, licensing, royalties.

Sources: iSuppli and Apple Inc. 10k.

From this we can construct some counterfactual costs for building an iPhone assembled in the US with some 8 hours of labour at \$21 per hour which is the average wage in the US electronics industry. Here, there is a hit on the gross margin which falls by \$159 from \$452 to \$293. But Apple's gross margin would still be nearly 50% and there would be gains for the US economy in terms of direct job creation and multiplier effects. US assembly would be worse for Apple shareholders, but more beneficial for the US economy instead of higher corporate profits with few sharing in this outcome.

So how do we understand what's going on at Apple in the context of financialization? This is not downsize and distribute (Lazonick and O'Sullivan, 2000) nor the increased propensity for merger and acquisition activity (Stockhammer 2004; Epstein 2005). The one best way social science models of how to run a financialized firm are irrelevant here. But, Apple can be accommodated within our approach which emphasises the diversity of outcomes, and the

various ways in which plausible narratives and acceptable accounting numbers can convince the community of analysts and institutional investors to buy the stock. In the case of Apple, the precondition for stock market success is an undisclosed business model of cost control through the supply chain and revenue recovery through high switching costs. More fundamentally, Apple should be cause for some fundamental reflection on financialization and its effects. Shareholder value is often understood as an external force working against the productionist corporation with predictable results in terms of employment and investment. But Apple suggests that, in some cases at least, shareholder value can be internalised by key firms who are thereby empowered use their position within a chain to pass on misery to their subcontracted subordinates and incidentally harm their domestic economy's employment base while hindering the development of their Asian subcontractors for no benefit other than the miser's consolation of multi-billion dollar reserves.

4. Conclusion

In this case, the old cliché is justified because more research is definitely needed. The fragmentary evidence on Chinese entrance and trans-Pacific manufacturing chains is complex and contradictory. The macro aggregates suggest that Chinese manufacturing generally has the advantage of a low labour share of value added, like Japan and Korea in an earlier generation. But the case evidence on FIH and Apple suggests that trans-Pacific chains and financialization have changed many things. We should not assume that power is routinely used like this inside other supply chains, but the FIH and Apple case should give pause for thought about distributive outcomes and who benefits from the exercise of corporate power to secure high margins for lead firms. Broadly considered, the lesson of Apple is that point measures of corporate success at one point in a chain are irrelevant if the sector and the domestic national economy are both rendered increasingly unsustainable by the use of power to capture profits at one point in a chain. Certainly, Apple should not be an object of praise and emulation because its business model is not generalizable without harm to the US and limited benefit to China. Financialization means many things but, *inter alia*, it denotes the absence of judgement which celebrates high financial returns at one point in a chain as a brilliant success.

Appendix:

The National Bureau of Statistics of China does publish the data on manufacturing value added but does not publish a measure of the sector's total labour costs. However, the US Bureau of Labour irregularly collects and presents data from scattered Chinese sources and presents them in their publication Monthly Labor Review. This allows us to calculate labour's share of value added using a series of steps: we use data related to the large urban based manufacturing sector and TVE's (Town and Village Enterprises) and then use the total labour cost per employee –our approach is cautious which means that we take the upper band of pay rather than the average of the higher paying urban units and the lower paying TVE's. Each year's total is multiplied by the total number of employees which produces the total labour costs for China's manufacturing sector. We then use each year's total labour costs to divide through with the value added totals from China's National Bureau of Statistics which allows us to present labour's share of value added.

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