

Global inter-city networks and commodity chains: any intersections?

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***Abstract** The article proposes five analytic operations that help in generating a larger frame that can encompass at least some foundational aspects of global city analysis and Global Commodity Chains analysis. Given the author's research, the ground from which this task is taken on here is the city. To do this requires going beyond the narrow empirical component that is at the centre of this special issue, namely World City Networks (WCNs). The five analytic propositions range from the problematic of incomplete knowledge for global actors, one shared by actors in the WCN and in the GCC, to that of the locational correlates of command functions, which can be as diverse as functions concentrated in headquarters to functions distributed across the chain of operations. The article concludes by asking what a focus on the city and its messiness adds to what is basically an analysis of the current phase of global capitalism (rather than an urban theory as is often assumed).*

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The editors have asked me to address the conceptual relationship between two particular variants of these two kinds of networks: World City Networks (WCNs) and Global Commodity Chains (GCCs).¹ This is a timely project; indeed it is surprising that after a few early research suggestions (Smith and Timberlake 1995) not much has happened. It is an exciting project and one on the agenda not only of geographers, who have been key researchers in both fields, but also of a much wider social science spectrum. But, it will require some work and, I would argue, some analytical developments and experimentation if we are to go beyond attempts at finding the lowest common denominators. We need to find an analytical triangulation that goes beyond each, inter-city networks and commodity chains.

I promptly confront a dilemma in addressing the editors' request to think about the linking of these two fields. WCN is one, albeit critical, component of a much larger analytical frame: I cannot properly address potential intersections by confining myself

to the WCN analysis. Peter Taylor has insisted that ‘the focus of the GaWC research network on APS firms was launched as “a simple empirical hook in an interesting theoretical area”’ (Taylor 2000: 29).² And it has served us well, producing a continuously growing and diversifying data set, unique in the world and used by many around the world. Neither Taylor’s (2000) work, mine (Sassen 1991), nor Friedmann’s (1986) can be reduced to this specific empirical component. Addressing the agenda put forward by the editors requires working off the complexity of that earlier scholarship, returning to some of the many themes that were central to it and that have been developed richly in diverse scholarships, from anthropology to political theory. These themes are not present in the WCN work because that was not the purpose of this empirical research – indeed, the actual WCN research group is clear in specifying that this is an empirical component of a much larger conceptual frame.

I shall address the matter of substance asked from me by the editors, and in this process discuss the various contributions that the articles in this special issue can make to that larger analytical effort that we need if we are to go beyond mere aggregation and move on to developing a key analytical lens through which the geographies of contemporary globalization are being studied (Brown et al. this issue).

Five propositions towards an analytic lens

I should perhaps start by explicating a core methodological principle that organizes my scholarship: explaining the *x* requires a focus also on the non-*x*. Confining an analysis to description of the *x* that is the object of explanation provides a description, potentially enormously rich and revealing, but falls short of explaining. It also, thereby, falls short of theorizing – and theorizing is a way of seeing what the empirical details do not allow you to see.

Let me use a familiar example to illustrate what I mean: Adam Smith’s ‘invisible hand’ is precisely such a non-*x* that explains how a market economy works; the mere functioning of a market brings about a governing dynamic, but they are not analytically the same. Post-Marshallian neoclassical economics evicted this analytic distance between the actual market and some larger concept positing that the market is more than a price mechanism. Thereby, the model lost explanatory power, setting the stage for the rise of institutional economics and, most recently, behavioural economics, all of which can be seen as aiming to reintroduce analytical distance between the market as price-mechanism and equivalents to the invisible hand. To take an example from my own work, in this case in political theory, when I write about immigrants or citizens, I need to find a non-*x* that allows me to explain who these subjects are. I cannot simply say the citizen is the citizen, and the immigrant is the immigrant – no matter how much empirical detail I have to describe each – and presume that I am explaining. Thus, I use the concept of the rights-bearing subject: both citizens and immigrants are such (and it allows one for instance to recognize that the immigrant is also the carrier of the rights that she has as a citizen of another country). Could it be that when we reduce global city analysis to WCN analysis we

have arrived at some juncture similar to the post-Marshallian moment in economics? From this perspective, the project of connecting to a very different yet cognate field such as commodity chains is a very interesting one. But, it will mean regaining a larger analytical terrain and taking Taylor's warning that WCN analysis is simply an 'empirical hook', one to which neither Taylor's nor my work can be reduced.

I can think of at least five propositions I developed in my global city analysis (Sassen 1991; Sassen 2007) that provide the non-x. This non-x gives us a third analytic stance to that of the WCN and GCC, and thereby might help in articulating these two fields in ways that go beyond mere aggregation or overlap. Inevitably, this is a perspective from the city side rather than the GCC side, as that is what I know, and knowledge and precision are important for this type of effort. Again, these five propositions come straight out of my global city analysis, not to be confused with the much narrower empirical component that is WCN analysis.

Incomplete knowledge

The first concerns the problematic of incomplete knowledge in market economies and its especially acute consequences in a global economy. This is present in both, commodity chains and APS inter-city networks. Firms have always confronted incomplete knowledge in market economies. When such firms go global, this problem becomes acute. From the start of my work on the subject I saw the producer services as an organizational commodity that becomes more and more important the more a firm (or an economic sector) operates in globalized space. This holds for global firms and markets, no matter what the sector – mining, agribusiness, finance, insurance and so on. One question is whether this also holds for Global Commodity Chains, no matter what the sector. In brief, one potential non-x variable articulating these scholarships is that their market actors are subject to incomplete knowledge. The proposition I developed to organize the many different conditions and needs is that the more digitized and the more globalized the operations of a firm, the more acute is its incomplete knowledge problem, and hence the more dependent on APS.³

The city's specificity *vis-à-vis* the incomplete knowledge problem, especially for global actors, is that its diverse networks, information loops, professionals coming from diverse parts of the world, produce a particular type of knowledge capital. I refer to it as urban knowledge capital – which is more than the sum of the knowledges of the professionals and the firms in a city. Analytically, I posit that this is a key element in the economic production function of the global city (Sassen 1991: ch. 6); there is also a political production function (developed in Sassen 1991: part 3; 2008: ch. 6).

This then also explains why global capitalism produced a systemic demand for a growing number of global cities across the world as globalization expanded in the 1990s and onwards. Each of these is a site for the production of urban knowledge capital, in good part specific to each city. Indeed, since the beginning I have argued that this phase of globalization needs and stimulates the specialized differences of cities. Thus, already in the 1980s, I found a division of functions among what were at the time the three strategic global cities for articulating an emergent new phase of

global capitalism.⁴ I argued that the intensifying problem of incomplete knowledge as globalization expands is partly addressed through a systemic demand for more strategic sites (global cities) and multiplying divisions of functions among such sites.

One question I have is whether this might also hold for GCCs, which seem to have diversified and each chain now aggregates more and more specialized steps. The recurrent observation in these papers that GCC and WCN analyses generate different types of knowledge begins to go in this direction, though the WCN frame is too narrow to encompass some of the issues I raise here –it would require focusing on global cities. I do like some of the methodological issues posited by these authors, in that they can generate knowledge that could eventually move on to what I am here referring to as the systemic demand for particular forms of knowledge on the part of global actors – the non-x.

Thus, Vind and Fold (2010: 58) note:

We believe the GCC approach can inform the WCN approach in two respects. The first is the application of commodity-specific lenses. By moving beyond selecting TNCs based on size criteria, industry-specific analyses will give more ‘flesh’ to the global city network by providing insights into the real-life connections and material links between specific cities. The second is the provision of qualitative information on the practices and strategies of firms, including on the role and significance of APS firms for TNCs in other industries.

We need to take the analysis one step further. Let me elaborate. The effort in these papers is to see how the different types of knowledge produced by each approach can potentially inform each other. Researchers gain additional knowledge by using each other’s research findings. The perspective is that of the researcher’s understanding of the process. Indeed, even when mention is made of them, for instance in descriptions of the GPN framework (for example, Henderson et al. 2002: 444), they are not active, working concepts analytically speaking. Whether GCC analysis can benefit from incorporating producer services is yet to be seen, but it does seem a promising possibility for articulating with WCN analysis, and more foundationally, with global city analysis (Brown et al. 2010; Parnreiter 2010).⁵

The further step we need is to understand what these findings about different types of knowledge tell us about the incomplete knowledge problem that actors in respectively WCNs and GCCs confront and seek to solve. Incomplete knowledge is a variable – its specifics will vary for diverse actors in respectively GCCs and WCNs. The comparative data that can be gathered should be put to work to address a larger analytical/theoretical problematic that cuts across CGCs and WCNs so that we can recover where the locations on that variable that they share and those where they diverge.

Producing organizational commodities

The second proposition concerns the production of the organizational commodities I referred to above and how to capture analytically the systemic demand that leads to

their production (Sassen 1991: chapters 4 and 5). By systemic demand I seek to refer to a type of demand that is not merely a market-promoted demand – such as a fashion, or a supply-induced demand as might be the case with some forms of consulting, and such entities as credit-rating agencies which have become partly a sort of rubber-stamp. I refer to a demand that comes out of actual organizational needs, in this case linked to new organizational formats, such as cross-border operations. The articulation of this proposition with the global city is that these cities are production places for such organizational commodities. This is a second key element of the economic production function of the global city.

The input–output models of national economies indicate clearly that firms in all sectors, from mining and agriculture to health and transport, to advanced services, are buying more of these organizational commodities – accounting, legal, insurance, finance and all sorts of new technology-linked specialized services for firms. This holds for firms in local, regional, national and global markets. Thus, the production of these organizational commodities is a variable: at one end they cater to local firms and at the other to global firms. The particularity of the global city is that it is a production place for the most complex version of these organizational commodities. But the larger underlying process is present also at the national level.⁶ This explains why a growing number of small and medium-sized cities marked by more routinized economies also evince some of the patterns we see in global cities: for instance, the growth of a high-income managerial and professional class and the consequent gentrification of central urban space (see Sassen 1991: chapter 9, ‘Economic Restructuring as Class and Spatial Polarization’).

The natural experiment case

A third proposition has to do with the heuristics of the choice of empirical data – in other words, preferring a case that can tell a far larger story than that of its own specifics (that is rather than merely the x). When the social sciences deal with emergent complex real-world processes, a case that can function as a natural experiment is enormously useful. Thus, the choice of APS is meant to function as indicating a far larger tale than the characteristics of that sector *per se*. One can choose a case that approximates an intuitive understanding of that emergent process, or take the counterfactual – the case that is counter-intuitive.

For instance, I used the case of finance as a natural experiment case that is counterintuitive. It is the extreme case of hypermobility and digitization and hence the case most likely not to need a territorial insertion, such as a global city. Such a need somehow seemed far less counterintuitive for the case of transnational corporations selling consumer products and services. Yet, these could also have served as a natural experiment: as I argued extensively, even a TNC selling an elementary consumer product or service needs organizational complexity to handle operations in many different countries; hence, it will also have an embedded demand for organizational commodities. This would have been far easier to demonstrate than the case of finance; it is also the case that the needs of such TNCs are easier to standardize than those of

finance. Finance is caught in multiplying inter-connected markets, continuous innovation in products and all of it at increasing velocities. From my perspective, then, focusing on finance was heuristically more productive because it pushed matters to the limit.

It is not clear to me what the equivalent methodological move might be in the case of GCC analysis, but it would have to be one that is heuristic and shows a larger set of characteristics about the current phase of global capitalism. It must get at non-x elements. In so doing there could be a rich research agenda using both approaches to specify some of the strategic mobilities of this era.

The spatial correlates of centrality

The fourth proposition points to a potentially fruitful articulation of global city analysis, and especially of WCN analysis, with GCC analysis: the specification of the variable locations of the most complex managerial/organizational functions of commodity chains. That is to say, thinking of the locations of these most complex managerial/organizational functions of GCC as a variable: at one extreme the locations are global cities, at the other they are not – they could be suburban office parks. I would posit that at the other extreme from global cities is a format that consists of distributed inputs across the whole chain. That is, the embedded demand for organizational commodities (the producer services of the WCN) is distributed across the chain, providing a sharp contrast to the global city analysis and at the same time situating both extremes in a shared analytic frame – a non-x.

Thus, I read the contribution of the two pieces in this volume (Hesse this issue; Jacobs et al. this issue) focused on material commodity chains from a WCN perspective as potentially contributing to specify this locational variable. The authors do not quite see this. They see their contribution as the focus on material commodity chains in contrast to the non-material contents of APS. Perhaps they have more developed versions of their work but, as presented, there is no non-x in their analysis. Thus, they confine their own understanding of their contribution to what is ultimately a modest empirical addition – though a very nice one!⁷ This confinement then also means that they leave unaddressed what is potentially fruitful analytically: the fact that many commodity chains do not need global cities. In my reading this work would gain analytical strength by understanding how their data specify one of the positions on that locational variable (to repeat, the locational variable of the most complex organizational/managerial functions in commodity chains ... not just any functions).

Thus, Jacobs et al. suggest their finding of a ‘weak relation between commodity flow patterns in ports and APS firm localization in port cities’ is problematic. But, it is not! Seen against a larger analytic space, it is yet another point on the locational variable I propose above, one that adds rather than detracts. Their findings for Hamburg, Rotterdam and Houston specify yet another type of location for complex functions. In my reading what they are finding is that global cities that actually arise from the need to handle the complex functions of ports are different from a city like London, which arises not only from its past port functions, but also from finance and

commerce. I am not an expert on ports but have a keen interest in them, and have by now gathered quite a bit of information, thus allow me this observation: Rotterdam as a centre for producer services (which it also is) is an extended port space; and, in fact, it exports services that have to do with the management of ports. Singapore is probably the major exporter of a knowledge economy about port management – which takes the form of managing ports around the world. In my reading, the authors should be specifying the particularity of the global city function as instantiated in the cases of these three port cities – Rotterdam, Hamburg and Houston. In the larger analytical frame these are a specific location on a variable that goes from one extreme, the global city, to another extreme, distributed embedded complex functions. Somewhere in the middle are complex ports.

I would make a similar comment on the piece about ‘the emerging mega-city region of Munich’ by Lüthi, Thierstein and Goebel. They document how Munich based high-tech firms have their management operations distributed over a broad ‘mega-region’. They see their contribution in terms of the details of the ‘x’. They could situate this contribution against a broader analytic frame, which would allow them to specify yet another position on the locational variable for complex functions I propose above.⁸

By limiting themselves to describing the details of their very interesting x, they miss a chance to make their findings work more analytically, both in the sense of an extended space of centrality and in the sense of marking one point on that larger locational variable discussed earlier.

I should add that in my analysis (Sassen 1991: 122 ff), which the authors seem to have misunderstood or not read, there is a new type of formation that is the extension of a space of centrality into older social geographies, such as the suburb or the metro area. Indeed, I identify at least four territorial correlates for the space of centrality, of which the downtown traditional business centre is but one. I include, for instance, a space of centrality for global finance that has diverse nodes in the suburbs, notably the hedge funds in Connecticut; to see this simply as the hedge funds that moved to the suburbs is imprecise. Just because there was an older social geography does not mean that it cannot accommodate other spaces over time. My proposition is that a given territory can be occupied by several distinct types of spaces.⁹

Parnreiter’s extensive research documents the ways in which global cities are critical nodes in Global Commodity Chains. Access to local knowledge and close contact to clients are both key factors. His analysis is far more comprehensive in terms of the complexities of WCNs in its documenting of how Mexico City is such a critical node in GCCs. With such detailed knowledge, and years of research, Parnreiter could also specify some of the locations for complex corporate functions in each, the GCC and the WCN, where these diverge from each other and where they intersect. The negative – in this case, the absence of similar locations for headquarter functions – can be a plus analytically in that it shows us the extent of variability between GCCs and WCNs, from active intersections to absent intersections.¹⁰

Command functions: the shift from imperial centres to distributed operations

The fifth proposition develops the question of a larger shared analytic frame by specifying the meaning of ‘command’ functions in global city analysis; I would think that the narrower focus of WCN analysis can be seen as providing one of the empirical platforms for this understanding of ‘command’ functions. Parnreiter and Vind and Fold’s research makes a contribution to the specifying of this larger analytic field through a focus on a third analytic point for interpretation that is neither a WCN nor a GCC. They do this by bringing into the analysis respectively, command functions, and labour migration.

Vind and Fold (2010: 61) find that it is important to understand ‘the structure and dynamics of GCCs that constitute the crucial linkages (in terms of material flows) from globalizing cities to world markets’. This requires intensive fieldwork on the linkages, which in turn requires ‘the need to include labour migration patterns and processes from the rural hinterland of globalizing cities’.¹¹ Such detailed analysis also makes visible a spatial dimension that marks a globality that is specific to a region. They posit, convincingly, that a detailed examination along these lines shows ‘how traditional GCC analyses could be realigned and integrated with the WCN approach’. I find this an extension of the analytic field that introduces more urban variables than a mere WCN analysis.¹² What also makes this interesting is that their project was not initially about these types of issues, but they wound up showing that ‘detailed and qualitative accounts of “how HCMC is going global” may supplement and integrate with quantitative indicators of “how global HCMC is”’.

An important specification is the existence of an ‘East-Asian city network for globalizing HCMC’.¹³ I find this very persuasive; it was already evident in the 1980s when Japan had considerable economic and financial influence in several Southeast Asian countries – through banks, construction companies and the foreign development aid office of the Japanese government. It also fits into my long-term argument that the current forms of globalization produce novel geographies of centrality that cut across the old north–south divide, even as many aspects of this old divide remain in place.

Parnreiter (2010) raises the level of complexity in his analysis by introducing the notion of governance when he discusses the position of Mexico City in the geography of governance of commodity chains. ‘The analysis suggests that it is useful to break up global city functions into the management of the world economy and into its command and control.’ Introducing the notion of governance is one way of finding a third analytic point to deal with both. I do think this is critical for making these GCC and global city analysis work together. But I am not clear about how he precisely conceives of ‘command functions’. Thus he writes:

However, as regards influences on value creation and distribution within the ‘Mexican segments’ of Global Commodity Chains, the – still tentative – results indicate that the scope of influence of both local affiliates of TNCs and of local offices of global producer service firms is rather limited, namely to

issues such as taxes or labour laws and unions, where the need for in-depth knowledge of local conditions is required.

In my conception, he is describing how elements of governance get embedded in command functions – a disaggregated distributed, multi-sited networked system, with territorial insertions in each pertinent country, in the shape of both global cities and GCCs. I use command functions to refer to the series of activities that need to be done for global firms to execute their operations without losing sight of the corporation's aims. It is a kind of embedded governance – embedded in the lawyering, the accounting and the investment choices of the firm, often via the APS to which it outsources some of its management functions. From here then my observations about creative accounting and lawyering in the case of some of the more speculative financial services firms; but it is also evident in less speculative firms.

Parnreiter's article raises several foundational questions, and is a more complex analysis than is typical in some of this literature. Its conceptual architecture encompasses a far larger range of variables. In this regard it offers us more complex articulations with GCCs analysis.

In brief, these command functions are not like the command functions of older imperial bureaucracies headquartered in the empire's capital and some of its major colonial centres. Each global city, no matter how minor, contributes a component because each articulates the wealth of a national economy with global circuits, either through 'national' firms or through foreign firms. So, yes, Mexico fulfils 'command' functions. I do think the term command lends itself to this confusion. I use it, true, but always insist that the global city is a space for the production of organizational commodities needed by firms and markets to operate globally and to shift national wealth to global circuits, and that this entails command functions that are distributed across those operations. Here I see an interesting and potentially fruitful point of analytical collaboration with GCC analysis. It is that cross-border operations nowadays require a whole series of organizational capabilities, and they are distributed across the chain in a far more evident way than is the case with WCNs. Here, the category governance assumes substantive meaning and operational meaning, and it intersects with major power logics. Some of these power logics are shared by the actors, in each WCNs and GCCs, and others are not.

What does a focus on cities add?

It seems to me that one critical question is to ask what does a focus on each of the core categories – WCN and GCC – add to the analysis. I also think that to make this a fruitful, productive question, we need to find a broader analytic context – the non-x.

A first point might be to use the city as that broader context, where the non-x are the multiple urban conditions that keep interfering conceptually, we might say, with a narrow, controllable empirical component such as WCN. Having that broader analytic context then allows us to recognize the conceptual potential of all sorts of urban conditions and actors: for instance the by now familiar fact that APS contribute to

gentrification and to a demand for low-wage migrant and minoritized citizen labour. What the equivalent would be for GCCs is not immediately clear to me, though the articles by Parnreiter and by Vind and Fold provide us with some hints.

A second point is situating ‘the city’ analytically in the larger effort that is world city and global city analysis. This can be addressed by using three faulty assertions that recur in most of these articles which point to a foundational misunderstanding as to the role of the city in global city analysis. I am not certain about the origin(s) of these assertions but they are sufficiently elementary that it does not really matter. One is that the WCN excludes most cities. The second is that it focuses on a Western process. The third is that it focuses only on the Global North.

The problem with the first two assertions is that the larger global city and world city analyses are not urban theories: their aim is, rather, to explain a new phase of global capitalism, its strategic spaces and its exclusions.¹⁴ In brief, they seek to capture a system of power. The analysis is not about cities *per se*, it is about novel types of imperial geographies. The contribution they make is to discover and specify that this new imperial geography includes as strategic spaces a variety of cities and inter-city networks. Imperial geographies are rarely inclusive. And in our modern history they are indeed Western – though this is now shifting. Thus to complain that this analysis excludes too many cities and is too Western in focus is misunderstanding what this type of theorization is about. The issue here is not a theory of the city. It is a theory of how the new empire functions.¹⁵

The third assertion is factually incorrect. This holds even for the narrow focus of the WCN, which includes cities from all parts of the world; it includes these not because the researchers decided that it was time to be more inclusive, but because the actual practices and projects that constitute the expanding global corporate economy incorporate more and more cities – or rather particular sectors of those cities.¹⁶ Global firms and markets do not want to operate only in a few cities of the Global North. They want to operate in multiple cities worldwide. This generates what I described earlier as a systemic demand for a growing number of global cities.

In my own work I found that the current global phase has engendered new types of geographies of centrality. These cut across the old North–South divide – even though many aspects of this divide persist. They disaggregate ‘the city’ and cut across the North–South divide via a range of networks. I have long argued that the powerful and rich elites and corporate sectors of a growing number of global south cities (whether in São Paulo or Jakarta, or so many others) are deeply linked with similar centres of the North. And, at the same time, cities that fall out of this new geography of centrality lose ground whether they are in the North or in the South. This is also why these new geographies of centrality cannot be easily grafted onto the core/semiperiphery/periphery geometry even when the core dynamics underlying this geometry are in fact at work in these new geographies of centrality. Perhaps it would be helpful to return to the original concept developed by Karl Polanyi! Many GCCs, on the other hand, correspond more closely to the core/semiperiphery/periphery division – though other formats are also emerging, as Parnreiter and Vind and Fold’s articles indicate.

A focus on cities brings to the fore some of the contradictions of this particular geography of power. The fact that cities are strategic in the new imperial geography allows us to capture in great detail the multiple and variable conditionalities of power. What is straightforward in the GCC analysis is more intermediated in cities. A focus on cities also allows us to capture a changing process. Thus Vind and Fold note that many 'so-called "third-world cities" that are growing on the basis of booming export-oriented industrialization and migration from rural hinterlands and distant regions' constitute their global linkages in a ways that are different from the Western modes that have dominated the global corporate map. A city like Ho Chi Minh City has now gained a foothold in the new geography of centrality. Jakarta, Manila, Bangalore did in the 1990s, each through its own particular economic sectors ... and so on. A very different process that can be captured in the city is the shift to new so-called flexible and deregulated modes of operating. In my research I found that the equivalent of deregulation at the top takes the form of informalization at the bottom of the economic system. There are many more aspects of the current structuration of advanced economies that become concrete and legible in cities pointing to the diverse contingencies and contradictions of this new geography of power.

In brief, a focus on cities rather than just WCNs brings in the messiness and the contradictions of a system of power marked by strong territorial insertions in cities. What would be the equivalent analytic operation for GCCs?

Notes

1. There are now three kindred yet different terms: GCCs, Global Value Chains (GVCs) and Global Production Networks (GPNs). All three are well developed and their differences are specified analytically and empirically (see Coe et al. 2008).
2. Elsewhere Taylor writes that APS firms may be an 'indicator species' of a larger entity (namely the global economy) (Taylor 2005; see also Derudder and Taylor 2005). It seems to me there might also be such a parallel between narrow empirical elements of GCCs and the greater complexity of the GCC work evident in works such as Gereffi and Korzeniewicz (1994) and Gereffi et al. (2005)
3. I should note that for me they have always included a range of engineering and technical services that need to be customized.
4. Basically, I found Tokyo to be an exporter of the raw commodity money to London and New York, and an exporter of massive infrastructure knowhow to Southeast Asia and Australia for rebuilding vast parts of those regions. London functioned as the most strategic entrepôt financial centre and a platform for firms from the entire world (including the USA) seeking to enter Europe. New York was the Silicon Valley for financial innovations, creative accounting and lawyering, plus the invention of all sorts of new APS.
5. Vind and Fold (2010) posit that 'The absence of producer services in GCC analyses is linked to their underdeveloped spatial dimension. Chain-based analyses of cluster upgrading dynamics and their linkages to global firms and markets ... have an obvious spatial dimension, as, more or less by definition, cluster-based firms share the same geographical location. Otherwise, there are typically no references to spatial connections other than company locations within different national territories; the role of (global) cities is not discussed.' See also Brown et al. (2010).
6. The chapter in *The global city* (chapter 5) that focuses on producer services owes a lot to an early geography scholarship that had gone completely unnoticed by the other social

- sciences. I recall first presenting some of my early research in the late 1970s to an audience of economists in New York City: they had never heard of this term; but soon they began to understand the usefulness of the distinction contained in the concept.
7. Hesse's (2010) statement that 'the ability of urban places to act as a spatial fix in an environment of increasing flows is becoming questioned' might indeed be the case, but (a) I still find David Harvey's analysis remains unmatched in this regard, and (b) I am afraid Hesse makes a literal – rather than a theoretical – reading of Harvey's notion of the spatial fix: it is not that flows are the opposite of spatial fix. We cannot interpret spatial fix as a literal description. It is a theoretical term.
 8. Two further comments on this piece. 'Megaregion' is now used to describe a territory that includes multiple metro regions; thus, one would not say, for example, New York's megaregion but the NorthEast Corridor. Besides the designation issue, I was not aware that Munich's surrounding region actually incorporates several cities and their metro areas. If it does, it should not be called Munich's megaregion – even if Munich is the absolutely dominant city.
 9. What would make this more significant as a contribution to the global cities analysis (which, again, covers far more than the WCN analysis) is to understand not simply the details of regional location – that is an old story – but whether those offices in the larger Munich area are actually constituting a space of centrality or whether they are the more routinized activities in the longer chain of activities they describe. Producer services are a variable, as I described earlier – extremely complex and innovative at one end, and fairly routinized at the other, with all kinds of intermediate mixes. Final point, all advanced economies show that the intermediate economy (which includes producer services) is growing and that firms in all economic sectors (though not all firms in those sectors) are buying more of these services. It is not completely clear to me where this Munich case fits on the 'made-in-house versus bought' spectrum (for a development of these issues see Sassen, 2007).
 10. Throughout the scholarship on global cities and world cities there are instances of recognition that the analytic terrain needs to be expanded (for example Rozenblat and Pumain 2007; Samers 2002). And while this is a bit of a challenge, the beginning steps towards such an analytically expanded terrain need not be complicated. Thus Alderson and Beckfield (2006: 902) posit that 'while it could be the producer-services sector that leads the way in binding cities into a global network, it is likely that the industrial sector also constructs connections of control among cities.'
 11. One of the findings is that the foreign-owned electronics companies rely more on female migrant workers than the domestic-owned companies. These migrants are perceived to be more amenable and harder working. This confirms findings of studies made over the last 40 years – let us recall that outsourcing was already happening in the 1960s, especially in garments, electronics and toys. The destinations were different, but some of the patterns, aiming at controlling the workforce were already evident, with foreign-owned firms far more dependent on control techniques and domestic firms more embedded in traditional cultures of male entrenchment. A separate issue is their mention that several interviewees in the electronics study believed the growing labour shortage was caused by former or prospective migrants finding jobs nearer to home. A similar trend is evident in China today; initially the 2007–8 crisis closed firms and forced migrants to return home but today the factories have shortages because the migrants are not coming back as they are finding jobs in the factories that have been opening closer to the traditional migrant sourcing areas in China.
 12. I read in this article a recognition that a third analytic frame is needed. 'We have argued that the World City Network and Global Commodity Chain literatures can inform each other, but that an integrative framework is needed to explore empirically the assumption of the WCN approach that APS firms are the critical agents in connecting (producers in)

- cities' (Vind and Fold 2010: 70). Further, 'an integrative approach also calls for a broader perspective than closer scrutiny of the links between APS and their corporate customers in Global Commodity Chains' (2010: 60).
13. We can extend this Southeast Asian regionality to labour migrations today as well, see for example the research by Gracia Farrer (2007) on migrations link between Tokyo and Shanghai that emerged over the last ten years, and include manual workers as well as professionals.
 14. It is worth noting that all three of us came from non-urban fields. Friedmann came from development studies, Taylor from work on the state, and I from development and migration. We stumbled on the city, so to speak – the strategic role of some cities was a discovery. But this also explains why our approach to the question of the city is not perhaps typical of traditional urbanists, and why our effort is not to make taxonomies or even typologies of cities. It is a different type of intellectual and research project.
 15. Using some of the propositions I developed in 2008, I would posit that the diverse types of mobilities of each WCNs and GCCs require a mix of conditions that aggregate in the form of assemblages. The distinction between physical and non-physical that runs through several of the articles might be better understood as functioning in diverse assemblages, rather than whether they are about the movement of materials or of financial instruments. Think of the international art circuit: it is now well established that the development of the producer services to handle global operations has greatly facilitated the movement of art pieces for museum shows and international art events.
 16. It is important to recover the trajectory, not only across space as in a commodity chain, but also across time. Thus, in the early 1980s the new phase of globalization was emergent. As it proceeds through the 1990s and 2000s, the geography of power expands and includes more and more cities. It is conceptually spurious to say that the WCN literature is now more acceptable because it covers more cities. That is not the point. The point is that we are studying a process, and this process came to include more cities. It is not a question of including as many cities as possible: it is to include those that are part of the geography of power. The study of cities as such is a different project, and there are millions of them.

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