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Contesting the state: discourses of the Asian economic crisis and mediating strategies of electronics firms in Singapore

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Abstract. In the last decade or so, human geographers have paid greater attention to the significance of discourses. We acknowledge the importance of discursive constructions and metaphorical representations of economic space, and extend the argument by examining the practices that may follow from such discourses. With use of empirical data from a firm-level survey and interviews with representatives of electronics firms in Singapore, we focus on contested interpretations of the Asian economic crisis at the firm level: how they might differ from state-driven discourses, and the extent to which state discourses (embodied in ministerial speeches and policy initiatives) were accepted, contested, and negotiated through firm-specific practices. The different counterdiscourses and responses of local and foreign firms are also compared. Results show that discourses at the national (state) scale were challenged and contested by firms within the same national space economy because of such material conditions as firm-specific circumstances, spatial extensiveness of their intrafirm and interfirm networks, and their access to various formal and informal information channels. The sampled firms offerered their own readings of the crisis that often contradicted the effectiveness and usefulness of certain policy responses orchestrated at the national scale. Their abilities to weather the crisis were also differentiated significantly between local and foreign firms. The study therefore highlights the importance of understanding the complex interrelationships between discourses and practices at different spatial scales and their capacity to produce (un)intended geographical outcomes.

1 Introduction

"A rose is a rose is a rose."

Gertrude Stein (1913)

"Our texts are not mirrors which we hold up to the world, reflecting its shapes and structures immediately and without distortion. They are, instead, creatures of our own making, though their making is not entirely of our own choosing."

Gregory and Walford (1989, page 2)

The 1997/98 Asian economic crisis has drawn substantial comments, criticisms, and interpretations from academics, economic and financial analysts, policymakers, and politicians in relation to its nature, causes, impacts, and recommended policies. Some of the most influential discussions have addressed such issues as the high-debt development model, excessive state intervention and overregulation, immature liberalisation of financial markets, crony capitalism, and conspiracy theory (Agénor et al, 1999; Ardnt and Hill, 1999; Corden, 1999; Garnaut, 1998; Henderson, 1999; Hunter et al, 1999; Jackson, 1999). Critical opinions have also been directed at the role of the USA and the International Monetary Fund (IMF) in resolving the crisis (Bhagwati, 2000; Wade, 1998; 2002; Wade and Veneroso, 1998). Taken together, this diverse range of narratives, opinions, comments, criticisms, representations, interpretations, and explanations are defined in this paper as *discourses* of the crisis. We use the term 'discourses' broadly to describe various ways through which meanings are constructed and conveyed (un)intentionally to their recipients. These meanings are often embodied in such representational devices as metaphors and analogies and are transmitted through such communicative materials as texts, speeches, films, and so on. As such,

the acceptance and deployment of crisis discourses have become highly politicised acts because the process reflects the ideological stances of the actors and agencies involved and influences their responses and policy actions. This raises some signifciant questions for geographical research. For example, how do some of the most powerful discourses of the crisis and their associated policy actions shape the *actual* practices of all sorts of actors? Do actors simply accept these discourses uncritically and behave accordingly as if they were universal truths? If not, how do actors contest these discourses through their own understandings and mediating strategies? Put in spatial terms, how do (national) state discourses of the (regional) crisis influence business practices of (local and foreign) firms in particular localities? How do these firms mediate state discourses through their own equally valid counterdiscourses?

In this paper, we argue that the interactive processes of linking discourses and practices and the examination of the multiscalar nature of these relational processes can offer vital insights into how economic and political spaces are constructed, understood, and communicated and how differential networks among various actors (for example, state agencies, local firms, and foreign subsidiaries) affect the negotiation of such processes and relations. We recognise that the practices of these actors are almost always situated within a range of (competing) discursive frames such that there will not be a simple one-to-one correspondence between a particular (crisis) discourse and a particular practice (for example, corporate downsizing). Moreover, the dominant discourses of the crisis certainly overlap, interact with, and, often, build on preexisting discourses in particular localities. Our analytical interest therefore does not rest with uncovering such a direct correspondence between discourses and practices, for such an exercise is futile. Instead, we aim to demonstrate how crisis discourses are contested and negotiated at the level of firms—both local and foreign—and how their own crisis-reading and mediating practices are complex outcomes of a variety of forces at work that clearly go beyond just state-driven crisis discourses and incorporate such material conditions as sectoral specificity, articulation in global production networks, and so on.

Our problematisation of discourses is situated within the context of the recent 'cultural turn' in geography (Barnes, 2001; Barnett, 1998; Jackson, 2002; Thrift, 2000a; Thrift and Olds, 1996; Yeung, 2003; compare with Storper, 2001). Social theorists such as Foucault (1970) had already pointed to the arbitrariness of taxonomic categories and critiqued discursive representations in texts and speeches as early as the 1960s. However, social sciences in general have tended to neglect or dismiss the analytical significance of discourses and such representational devices as metaphors and analogies. Writing is seen as a mechanical process of joining words together in the right order to convey thoughts or objects. In the past decade or so, however, this view of writing and discourses has been widely challenged. Human geographers are now affording much greater attention to the significance of discourses and metaphors in shaping spatial formations (for example, Barnes and Duncan, 1992; Bunnell, 2002; MacLeod and Jones, 1999; O'Neill, 2001; O'Neill and Gibson-Graham, 1999; Schoenberger, 1997; Smith and Katz, 1993; Thrift, 2000b). Far from being merely decorative, for example, metaphors are seen as central to conveying meaning and aiding how we construct and understand social, economic, and political spaces. The discursive strategies employed in texts or speeches are often involved in the creation of the very sociospatial reality they purport to define and describe—as in the globalisation debate (see Kelly, 1999; Yeung, 1998). A substantial corpus of work has been done on the deployment of metaphors in economics (Gramm, 1996; Khalil, 1998; Klamer and Leonard, 1994), politics (Mio, 1996; Thompson, 1996), and human geography (Barnes, 1992; 1996; Barnes and Curry, 1992; Howitt, 1998; Kelly, 1999; 2001).

On the surface, metaphors simply draw comparisons between one thing and another, but, in a more subtle way, they usually imply whole narratives and prescriptions for action. In this sense, metaphors are not only descriptive but also prescriptive. Thompson (1996, page 188) argued that "metaphors do more than simplify complexity for the analyst or decision maker. They clothe the intangible, giving life to abstractions". After the philosopher Rorty's nonfoundational approach, Barnes (1996, page 156) also noted that "we must show that the importance of the metaphor is not in its meaning but in its use".

An examination of metaphorical representations of economic and political space may thus offer critical insights into how economic processes are understood, the ideologies that they seek to propagate, and the resultant policy stances. Fairclough's (1991) analysis of British political speeches on 'enterprise', for example, suggests that discourses are sets of tendencies of a diffused nature in which meanings are constantly being structured and restructured according to shifting strategies of, in his analysis, the Thatcher ministry. Moreover, this discourse is open to multiple interpretations as it is transposed from the domain of political discourse into other domains where it may be contested and show up in divergent forms (Fairclough, 1991, pages 48 – 49). In the case of Singapore, recent work by Kelly (2001) and by Coe and Kelly (2000; 2002) has analysed the metaphors and representational strategies employed by the Singapore state to describe the Asian economic crisis and Singapore's labour force. To Kelly (2001), employing such metaphors that are used to describe the natural environment—'typhoons', 'earthquakes', 'tectonic shifts', and 'turbulence'—to depict the Asian economic crisis is not merely an 'objective' description of economic conditions or events but part of a discursive strategy that constructs a particular understanding of reality, which in turn elicits actions and reactions appropriate to that understanding. He further illuminated

> "how metaphorical renditions of economic processes were constituted within specific discourses of political power in Malaysia and Singapore. It was this discursive context, accessed through strategic metaphors, which made certain interpretations of crisis imaginable, and which made particular policy responses plausible" (Kelly, 2001, page 739).

In the following empirical analysis, we build on Kelly's (2001) work to address not only state-driven discourses of the Asian economic crisis in Singapore but also *practices* of one particular set of economic actors—local and foreign electronics firms—in relation to these discourses and concomitant policy options. Although we recognise a whole range of actors might be involved in the production and consumption of these crisis discourses (for example, trade unions, financial analysts, business associations, consumers, nongovernmental organisations, and so on), we have chosen electronics firms for our specific analytical purposes for two key reasons. First, the electronics industry remains the most significant manufacturing industry in Singapore, contributing 51.8% of total output and 47.8% of value added in Singapore's manufacturing sector in 2000 (DoS, 2001). Because of its deeper integration into the global marketplace, the electronics industry was also one of the most badly affected industries during the crisis (*Business Times Singapore* 7 April 1998). The number of electronic firms in Singapore decreased by 16.5%, from 236 in 1997, to 197 in 2000 (DoS, 2002). Net investment in the industry also experienced a 18.4% dip, from S$3.8 billion in 1997, to S$3.1 billion in 1998 (EDB, 2002a). As such, electronics firms have emerged as one of the most important and targeted 'consumer' groups of crisis discourses and policy responses driven predominantly by the Singapore state. The crisis-mediating practices of these firms are highly illuminating in our understanding

of the (un)intended consequences of these state-driven discourses and policies. They are also more likely to offer alternative discourses to counteract dominant state discourses.

Second, precisely because of this simultaneous local significance and global exposure of the industry, electronics firms in Singapore—both local and foreign—pose an interesting intraindustry comparative case study of how (national) state discourses and policy actions might have a differential impact on the practices of different types of electronics firms. In fact, one may follow the 'global glut' argument (see Radelet and Sachs, 1998) that slowdown in global demand and excess capacity in the electronics industry prior to 1997 contributed to the rapidly deteriorating balance of payments among many export-oriented Asian economies (for example, Thailand and South Korea). Coupled with the heavy dependence of these economies, including Singapore, on the electronics industry, the global glut in the industry might have led to the greater vulnerability of these economies to currency speculation. Under these industry-specific circumstances, we would expect electronics firms that are more attuned to and integrated into the global marketplace to 'consume' and react to state-driven discourse and policy responses differently from their local counterparts in Singapore. The national context may therefore be much more significant and thereby constraining for local firms, whereas foreign firms may take on regional and global perspectives because of the wider spatial scale and extensiveness of their international operations. Taking these electronics firms as our analytical units, we examine how crisis discourses are translated into actual strategic practices from one spatial scale (national) to another (the firm) and how this process of translation is mediated by a host of material conditions that are 'scaled', so to speak. In this sense, we view electronics firms as a site or relational scale for interaction among social, economic, and political forces operating *across* a variety of spatial scales. Although explicitly rejecting the hierarchical conception of spatial scales, we do not privilege any particular spatial scale as the primary reference for our analysis by focusing on the interscalar nature of interaction between discourses and practices (see also Brenner, 1998; 2001; Kelly, 1999; Sheppard, 2002; Swyngedouw, 2000).

This paper is organised into five further sections. In section 2 we briefly review existing literature on the Asian economic crisis and point to a lack of detailed studies of impact and practices at the firm level. In section 3, we develop a firm-specific theoretical framework to analyse the complex interrelationships among discourses, practices, and mediating conditions. In section 4 we analyse state discourses of the crisis and the resultant policy stance in political speeches and printed media. Based on empirical data from our survey and interviews with electronics firms in Singapore, we examine specifically their reactions to state discourses and their own counter-discourses. In section 5 we discuss the responses of these electronics firms to various state policies, their mediating strategies employed in weathering the crisis, and variations in the responses and strategies between local and foreign firms. The concluding section provides a summary of the main findings and theoretical implications for further research.

2 Problematising existing accounts of the crisis

Much has been written on the Asian economic crisis by academics, state agencies, and other institutions. Although a full review of this diverse literature is beyond the scope of this paper, a critical understanding of its discursive and political dimensions and its interpretations is important in enabling a better appreciation of the complex interactions between discursive constructions and material processes of economic change (Kelly et al, 2001). There are broadly two kinds of crisis literature: macrolevel studies and firm-level studies. By macrolevel studies, we refer to research that examines broad

trends and impacts, often using national-level and aggregate data (for example, per capita income, consumer prices, import and export levels, and stock prices). Much of the crisis literature falls into this category and was published rather early in the crisis period, which may account for its general treatment. This is well-exemplified by the proliferation of edited volumes offering a combination of theoretical and policy debates and country-by-country analyses (for example, Agénor et al, 1999; Arndt and Hill, 1999; Hunter et al, 1999; Jackson, 1999; Tran and Harvie, 2000). The causes and interpretations of the crisis were popular and hotly debated topics in such macrolevel analyses. Academics and analysts were generally polarised between those who blamed the crisis on such internal factors as policy errors and bad governance (Garnaut, 1998; Henderson, 1999; Lim, 1997; Montes, 1998) and those who pointed to such external factors as the inherent volatility of and contradictions in the global financial structure (Dickinson and Mullinex, 2001; Portes, 1999; Webber, 2001). Another vocal group saw the culprit in the rather conspiratorial process through which the IMF overstepped its mandate and imposed often ineffective and unnecessary austerity programmes on recipient countries (Bhagwati, 2000; Bullard et al, 1998; Sachs, 1998; Wade, 1998; 2002; Wade and Veneroso, 1998).

Apart from their macroscale of analysis (usually at the global or national level) and the use of aggregate national-level data, another common feature of the above literature is its lack of attention to the impact of the crisis on specific sectors, industries, and people (that is, what happened 'on the ground'). The crisis was significant not only in its theoretical implications and lessons for state and financial governance. Its social, economic, and psychological consequences for people living and doing business in Asia were often overlooked, with the tendency to overvalorise global structures and processes. There was also inadequate attention paid to local negotiations and responses to these events. However, country studies that address local social and political impact have been increasingly evident in recent years, especially on gender and labour issues (Chu and Hill, 2001; Hart-Landsburg and Burkett, 2000; Park, 2001; Seguino, 2000). Microlevel studies on such issues are also becoming increasingly popular (for example, Silvey, 2001; Yasmeen, 2001). The wider crisis literature also tends to focus on such areas as financial markets, policy reactions, and the role and action of the IMF and states, at the expense of individual industrial sectors. Relatively few studies have been done on the impact of the crisis on and the responses of firms and industries (Bartels and Mirza, 2000; Claessens et al, 2000; for some exceptions, see Beaverstock and Doel, 2001; Edgington and Hayter, 2001; Norman, 2000).

Given the impact of the crisis on the Singapore economy, being only its second recession since 1985, firm-level studies on the crisis are surprisingly lacking. This could be because it was among the least affected countries in the region. For example, Dwor-Frécaut et al's (2000) firm-level survey of corporate performance did not include Singapore, focusing instead on the more badly affected countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand). Most work on Singapore in relation to the crisis was very general and descriptive, focusing on macroeconomic indicators and policy responses (Chia, 1999; Ta, 2000; Tan, 2001). Others used the crisis as a background context for arguments about other issues, such as the state's selective approach to the issues of transparency and the media (Rodan, 2000). Analyses of firm-level impacts and responses were limited to short papers such as Soh and Neo's (1999) examination of reduction in spending on information technology (IT) by companies. The most notable of such attempts was that by Poon and Thompson (2001), who employed self-administered surveys to examine the impact of the crisis on foreign firms' investments and activities in Hong Kong and Singapore. Kelly (2001) also examined the ways in which state-inspired metaphorical representations in Malaysia

and Singapore reflect how economic processes are understood within specific political economies and institutional environments. But precisely how such discourses and their associated metaphors were consumed by such economic actors as firms and enterprises has not been addressed. In the context of this empirical lacuna, our paper may make a useful contribution

3 Conceptualising discourses, practices, and mediating conditions

Although acknowledging our conceptual point of departure from Kelly's (2001) recent analysis of crisis discourses in Singapore and Malaysia, we are particularly concerned with examining the practices that may result and/or deviate from such discourses and how they may be negotiated at different spatial scales (for example, the global, national, and firm levels). In figure 1 we link discursive elements of the crisis with material processes at the level of the state and the firm (for example, state-inspired discourses and firms' organisational changes and strategic responses). Although figure 1 appears in a top-down manner because of the two-dimensional nature of textual representation we certainly do not conceive the flows of actions and responses as being one-way. We therefore expect firm behaviour to feed back to state discourses and policy responses (see the explanations below). At the general level in figure 1, the crisis is conceived as producing various narratives and interpretations with regard to its nature, causes, implications, and appropriate policy responses. It is useful to remember that such narratives and interpretations are often situated within preexisting discourses of the national and the global economy (for example, economic 'miracle', development, and globalisation) that might have shaped the strategies and behaviour of firms prior to the Asian economic crisis. The extent to which such preexisting discourses are efficacious depends very much on the hegemonic power of the state or other dominant group of actors (for example, financial markets and international organisations). In some cases, crisis discourses may break away dramatically from precrisis discourses in order to generate new political legitimacy [for example, the precrisis discourses of development compared with the crisis discourses of 'economic colonisation' in Malaysia (see Kelly, 2001)].

In formulating crisis-responding policies for recovery and deciding how to communicate such events and policies to its citizens and constituencies, the state often adopts particular discourses and metaphorical representations in a highly selective manner according to its economic and financial circumstances, party ideologies, and other political concerns. These differential national contexts clearly account for the dramatically different crisis discourses prevailing in Malaysia, Singapore, and South Korea (see Chang, 2000; Kelly, 2001; Haggard and Mo, 2000; Mathews, 1998; Yeung, 2000a). These interpretations are expressed through state discourses and metaphorical representations of the crisis in speeches, press releases, and media reports and are reflected in particular policy actions. In some instances, the state may actively engage a variety of economic actors—particularly firms—to discuss the kind of discourses and policy options available *before* committing to a particular set of discourses and policies in public. The formation of a national competitiveness committee in Singapore in early 1998 comprising representatives from various industries, financial markets, academic institutions, and labour organisations (MTI, 1998) was clearly an attempt by the state to broaden its discursive appeal and to enhance the political legitimacy and economic effectiveness of subsequent policy responses. As illustrated in figure 1, this example underscores the two-way flows of knowledge and understanding of the crisis between the national state and local and foreign firms. The solid arrows show the relatively more powerful influence of state discourses and policy responses on the behaviour of firms; the broken arrows indicate the reversed role, however minor, of these firms in the construction of state discourses and policy responses.

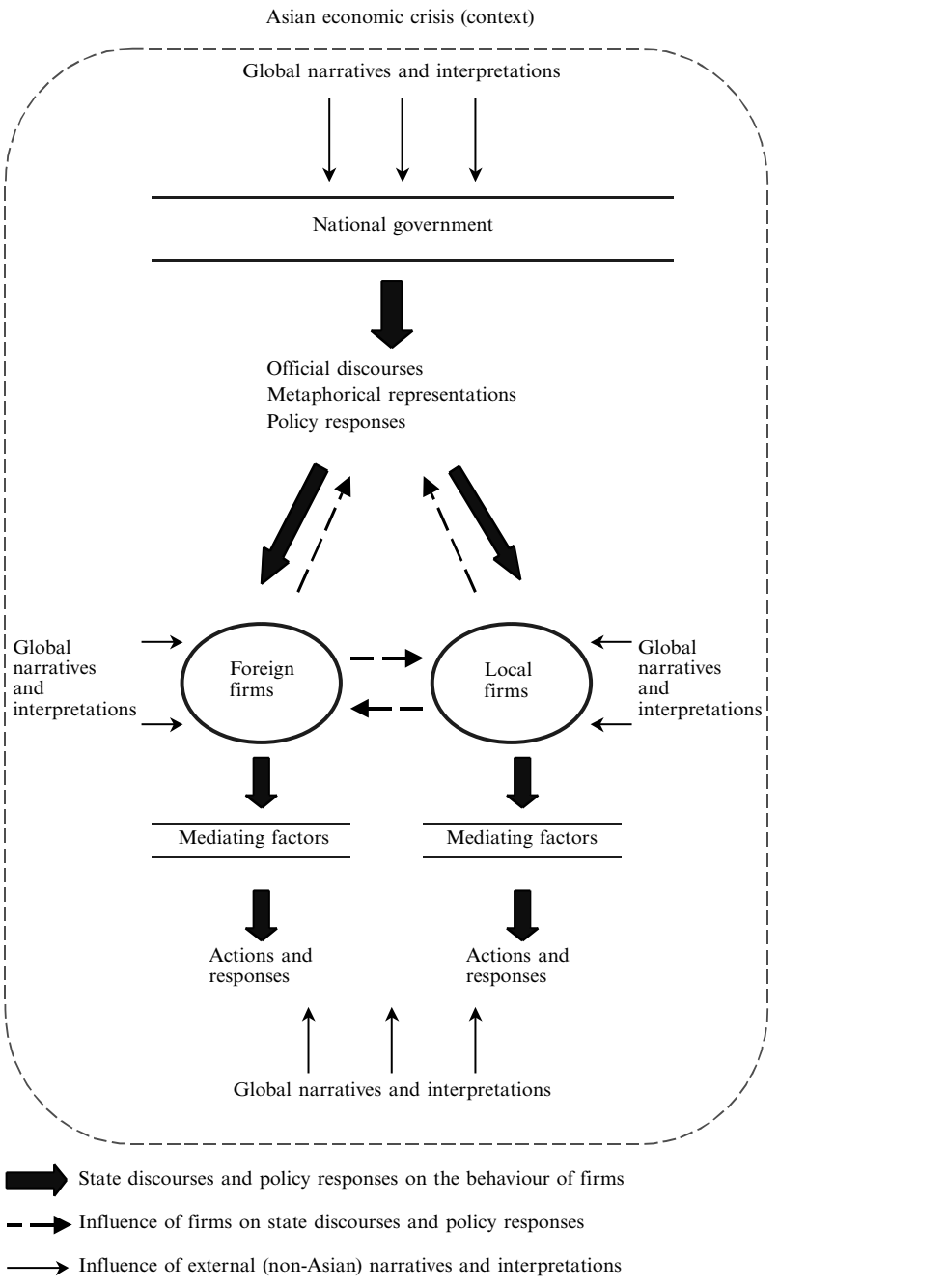

Figure 1. A firm-specific theoretical framework of crisis discourses and practices.

More specifically at the firm level, state discourses and policy responses have definite impacts both directly and indirectly on the perspectives and operations of firms. Policies such as a reduction in state taxes and industrial property rental had a direct impact on the cost of business operations during the crisis. Indirectly, state discourses may affect the overall economic climate and outlook among citizens and investors—local and foreign—that in turn influence business decisions. Firms may respond in response to such

discourses and concur with the need for certain state-sanctioned policies by adjusting their operations and investments accordingly. Firms may also have differing views on the crisis and may contest such discourses as a result of industry-specific or firm-specific differences. Nationality may be a factor in influencing business decisions and outlook, as revealed by the different operational and employment changes taken by Asian, North American, and European investment banks (Beaverstock and Doel, 2001). As most non-Japanese Asian firms tend to limit their production networks to the Asian region because of their inability to compete in advanced markets and because of their familiarity with the region (see Dicken and Yeung, 1999), they are likely to face greater adverse impacts than are their non-Asian counterparts in North America and Western Europe.

The differential positions of different firms in global production chains and networks are likely to impinge on their varying capacity to follow and/or resist state-imposed discourses and policies. Generally, foreign firms are expected to benefit from the wider geographical reach of their global production networks and sources of finance such that they have more options in their business strategies and investment decisions (Dicken, 1998; Dicken et al, 2001; Henderson et al, 2002). Their linkages with operations in other countries or regions that are not affected by the crisis may allow them to cross-subsidise and weather the crisis much better than their local counterparts in the host Asian economies. Their unfettered access to global financial markets through their parent companies—often publicly listed—in North America and Western Europe also implies that these foreign firms in Asia are less constrained by the financial austerity measures introduced by host nation-states. These foreign firms are also better able to contest crisis discourses embedded within specific national contexts. A critical factor that may differentiate the interpretations and responses of local and foreign firms vis-à-vis the crisis may be the diverse nature and extensiveness of their integration into global production networks and global financial markets.

Another important point to note on figure 1 is that business decisions and perspectives are based on information repertoires that do not necessarily flow in a top-down and linear manner. Firms not only interact with state discourses and policies but also are embedded in the wider international business context, whether as suppliers to global corporations or as foreign subsidiaries. These international business firms, mostly foreign, can thus directly access different discourses of the crisis through foreign media, consultant reports, or linkages with parent companies. Here, non-Asian financial communities based in such global cities as New York and London may exert a powerful influence on how these firms interpret state-driven discourses and negotiate their policy responses. Clark and Wojcik (2001), for example, found that senior analysts for *The Financial Times* and, by inference, the City of London were particularly pessimistic about the crisis over a longer period of time than was the case in Wall Street—an indication of quite different interpretations of the crisis even within the 'twin centres' of global capitalism. In figure 1, such non-Asian influences are denoted by the *direct* flows of narratives and interpretations of the crisis to some local and foreign firms. These flows are not mediated through state discourses and metaphorical representations. The strategic behaviour of different types of firms (foreign and local) may also interact such that over time there is a kind of 'institutional isomorphism' (DiMaggio and Powell, 1983) in their responses to state discourses and material circumstances. In the following empirical sections, we focus on two specific themes: (1) the linking of state discourses to counterdiscourses by firms and their mediating practices, and (2) the unpacking of the multiscalar dimensions of the crisis as reflected in how different firms negotiate representations of the crisis and their operational responses.

4 Representing the Asian economic crisis: state discourses and counterdiscourses

4.1 A snapshot of the crisis

Most accounts of the crisis trace its inception to July 1997 when the Thai government halted its defence of the Thai baht and allowed it to fluctuate against the US dollar. The 'managed float' soon proved unmanageable and the baht's fall triggered a regional currency and equity cascade. The magnitude and volatility of the crisis dealt a sharp blow to fragile and often overextended banking systems and devastated manufacturing establishments dependent on cheap capital and foreign inputs for production. During the first year of the crisis, the currencies of the five most affected countries depreciated by 35% to 80% (see table 1). Psychologically, the crisis also shook the confidence of foreign investors and domestic entrepreneurs and forced businesses to rethink their investment and production strategies in Asia (Bartels and Mirza, 2000; Jackson, 1999). Poverty levels increased even in high-income countries such as South Korea, and suicide rates were on the rise (*The Straits Times* 24 March 1998). In the political sphere, states in the region found their legitimacy challenged by groups and individuals who were previously willing to tolerate cronyism and familism as long as the states delivered the economic goods. With remarkable and often unexpected speed, various political regimes either were overturned or experienced turbulent changes in leadership (for example, Indonesia, South Korea, the Philippines, and Japan).

Table 1. Impact of the Asian economic crisis on exchange rates and gross national product (GNP) (source: Jackson, 1999, page 2).

Country	Exchange rates (to US $)			GNP (US $ billion)		
	June 1997	July 1998	1997/98[a]	June 1997	July 1998	1997/98[a]
Thailand (baht)	24.5	41	−67	170	102	−40
Indonesia (rupiah)	2380	14 150	−495	205	34	−83
Philippines (peso)	26.3	42	−60	75	47	−37
Malaysia (ringgit)	2.5	4.1	−64	90	55	−39
Korea (won)	850	1 290	−51	430	283	−34

[a] Percentage change.

In comparison, Singapore was among those less affected by the crisis (Chia, 1999; Henderson, 1999); but, despite its macroeconomic fundamentals, it did not escape from the 'contagion effects' because of its open economy and close trade linkages with its Asian neighbours. Although the Singapore dollar was not directly subjected to speculative attacks, the crisis in confidence and 'herd behaviour' of investors led to its depreciation against the US dollar (while rising sharply against other Asian currencies). Falling asset prices in the property and stock markets also adversely affected consumer and investment spending. Financial institutions were faced with an increasing number of nonperforming loans and the corporate sector was faced with tight liquidity. As the regional hub of Southeast Asia, the crisis affected Singapore's exports of goods and services, aggravated by a slowdown in the global electronics industry. Thus weak incomes, tight bank liquidity, weak market sentiments, wage restraints, retrenchments, and a strong currency diverting demand to neighbouring countries culminated in an economic slowdown. To maintain investor confidence and strong country credit ratings, the state in Singapore reiterated its continued reliance on market forces, allowing free capital flows and foreign investments and remaining firmly plugged into the global economy. Tax rebates and public expenditure on infrastructure

Table 2. Singapore's policy responses to the Asian economic crisis (sources: Kelly, 2001, page 733; *Business Times, Singapore* various issues; MITA, various issues; *The Straits Times* various issues).

Fiscal
Budget increases development expenditure by 25%
'Fiscal restraint in noncrucial areas'
Two off-budget packages totalling US $10 billion
Financial
Savings from the Central Provident Fund (CPF)[a] can now be invested in approved private fund management assets
The financial sector is liberalised to encourage entry of foreign players
Labour
Wage cuts (5% – 8%) are enforced and bonuses are withheld in the public sector to encourage cost cutting in industry
Emphasis is placed on attracting foreign talent in knowledge-intensive sectors
A 30% increase in spending on education and training is made, with a special focus on retraining midcareer and retrenched workers
Corporate
Operating costs are cut through a 50% reduction in employers' contribution to workers' CPF accounts (from 20% to 10%)
Corporate taxes, power, telecommunications, port, and land-rent charges for businesses are reduced
Takeovers and restructuring take place among government-linked companies to improve global competitiveness
Other
Continued emphasis is placed on an international orientation and the diversification of overseas investments and markets
High-technology and high-growth sectors (for example, engineering, the chemical industry, the life sciences, logistics, communications, and the media) are nurtured.

[a] The CPF is a compulsory national savings scheme in which the employer and employee each contribute 20% of the monthly salary. Before retirement, these funds can be used only for prescribed purposes, such as medical expenses, payment for public housing, and children's tertiary education, and in approved investment schemes.

were increased to stimulate domestic demand. It also sought to ensure international competitiveness by reducing wages and rental costs, promoting education and training, and encouraging new investments and continued liberalisation of the financial sector. In table 2 we provide a summary of Singapore's policy responses to the crisis. Such policy initiatives were generally well received by the international community. In fact, the Hong-Kong-based Political and Economic Risk Consultancy ranked Singapore first among eleven Asian economies in terms of its policy responses to the crisis (*The Straits Times* 23 March 1998). Hong Kong and Taiwan occupied second and third places, respectively.

4.2 Unpacking state discourses and metaphorical representations

As we have noted above, the vital role of metaphors in representing economic and political spaces render them useful starting points in examining connections between economic process, state policies, political legitimacy, and responses at the firm level. In the Singapore context, the crisis has been discursively constructed by the state, through speeches, press releases, and media reports, in particular ways. But in order to understand and appreciate underlying reasons for particular actions taken by the state and the reactions and responses of firms to such policies some background information on Singapore's political economy is necessary. The rise of the developmental state in Singapore is influenced, to a certain extent, by immediate postindependence experience

and subsequent political development. The ascent of the People's Action Party (PAP) to power and its enduring power in politics and government since independence in 1965 has given birth to a developmental state in Singapore, with national economic development having become the primordial goal of the PAP government for the past thirty or more years. Singapore's political elites sought to achieve political legitimacy through economic prosperity and embarked on a trajectory of export-oriented industrialisation and economic development, focusing on labour-intensive industries (Huff, 1994; Low, 1998; Rodan; 1989; Yeung, 2002). Even before independence, the leadership in Singapore always felt a profound sense of vulnerability because of Singapore's limited size and geopolitical setting amongst much larger and ethnically different countries. This sense of vulnerability increased after 1965, and the notion of (real and perceived) external threats, whether political, economic, or social, became vital in the construction and maintenance of political legitimacy in Singapore (Chua, 1995; Khong, 1995; Tremewan, 1994).

Another attribute of Singapore's developmental state is the close alliance of the PAP and the state bureaucracy. Since the first general election for a fully elected legislative assembly in Singapore in 1959, the PAP has not lost to any single opposition party, thus ensuring a continuous domination of party ideology and preoccupation with economic development. There has been a virtual monopoly of political power by the PAP in Singapore since Singapore's independence and this creates a stable (albeit authoritarian) political environment and a significant space for closer party–state alliance (Hamilton-Hart, 2000; Hill and Lian, 1995). To a certain extent, the PAP has become the state and has a significant role in 'guiding' developmental policies. The state bureaucracy, on the other hand, services the general interests of Singapore exceptionally well by formulating development policies that enable the proliferation of foreign firms and state-owned enterprises. Although the state takes credit for past successes, the constant potential threat of future insecurity serves to justify a powerful and unchallenged elite, including state ownership of the local media. In fact, the last general election in 2001 saw the first increase in PAP's share of votes after a downward trend over the past four general elections. The fact that this coincided with a global economic downturn partly reflects the Singapore electorate's acceptance of and faith in the party's technocratic management.

As Kelly (2001, pages 734–735) has clearly pointed out in his lucid analysis of ministerial speeches during the Asian economic crisis, the discourses of external threats, vulnerability, and 'there-is-no-alternative' (TINA) in justifying policies and decisions surfaced again in the late 1990s. Metaphors of natural disasters tended to dominate the speeches of several ministers in their discourses of the crisis, especially that of the 'typhoon' and the 'earthquake'. Both metaphors conveyed a sense that events of the crisis were sudden, unpredictable, and caused by exogenous factors, although adequate defences before such events could have minimised damage. The metaphors of weather and typhoon thus presented the crisis as an uncontrollable force that tested unsound structures as it swept across Asia. According to Prime Minister Goh Chok Tong:

> "The financial typhoon that swept through the region has left behind a trail of destruction far greater than anyone had imagined. It has severely damaged economies, inflicted untold suffering on millions of people, and brought about political change in some countries ... . Though the typhoon seems to have abated, few people are predicting an early recovery for the region yet. My own view is that it is best to prepare for a second typhoon. I think there is a 1 in 5 chance that it will come" (C T Goh, 1998).

This discursive strategy aimed to shift any possible political blame away from the responsibility of the PAP state to the unpredictable 'external' global economy. Should its economic policies work, credits would be accrued to the national state. The crisis was discursively represented as similar to 'acts of God' and therefore a disembodied force. If this 'natural' and 'external' crisis could be contained by the state's efforts, the political elites would gain all the credit, otherwise, the state could not be expected to be accountable for such an externally imposed disaster. According to Deputy Prime Minister Lee Hsien Loong:

> "Given our close trade and investment links with the region, Singapore could hardly be untouched by the typhoon. Our exports lost competitiveness, because our neighbours' currencies depreciated sharply against the Singapore dollar. Retrenchment shot up. Tourism and commerce were badly hit .... But Singapore has been less badly hit than our neighbours, because our economic fundamentals were sound" (H L Lee, 1999).

Interestingly, this discursive strategy surfaced again during the 2001 economic recession in that the 'contagious' and 'external' nature of economic downturns was once again emphasised:

> "remember the common saying that when the US sneezes, others catch the cold. This is what is happening to many economies right now. They have caught the cold because they are dependent on the US market. Yes, Singapore has caught the cold too. And once you have caught it, there is no quick cure. You can take vitamin C, drink herbal soup and keep yourself warm, but the cold will still have to run its course. You just have to hope that your body immune system is strong enough, and the cold will not develop into something worse, like pneumonia" (C T Goh, 25 August 2001).

The speeches highlight the importance of a strong state as a requirement for recovery. Tangible achievements in the past were used to justify the necessity of a strong state, as the people were asked to:

> "Have faith in the Government's leadership in tackling the challenges created by the regional crisis. We understand the nature and extent of the problems faced by businessmen and workers. Our response is a calculated, measured one because our economy is not in a perilous state" (C T Goh, 17 July 1998, cited in Kelly, 2001, page 738).

Such assertions helped to justify the implementation of unpopular policies such as the cut in employers' contributions to the Central Provident Fund (CPF). The establishment of the CPF Board in Singapore was intended to provide long-term security to its members and to initiate a compulsory national saving scheme to finance national development plans. From an initial rate of contribution at 5% of gross monthly salaries, the CPF rates rose steadily over time, to 25% just before the 1985 recession, and they have subsequently decreased to about 15%–20%. The recent CPF cut thus affects the majority of Singaporean workers who use these compulsory savings to pay mortgages on public and private housing (see table 2). Its disproportionate impact (greater for lower income households) also has considerable social implications.

4.3 Counterdiscourses among local and foreign firms

How did local and foreign firms in Singapore digest these state-driven discourses and policy responses? Did these firms offer any counterdiscourses or alternative interpretations of the causes of the crisis and the role of the state in its (mis)management? Our empirical material originates from a postal survey of and personal interviews with representatives from electronics firms in Singapore. We mailed self-administered questionnaires to 300 electronics firms in Singapore in early 2002 and received 54 valid responses. We gathered the sample randomly from the 'electronics manufacturers' and 'supporting industries'

listings in the *Singapore Electronics Industry Directory 2001/2002*, compiled by the Economic Development Board of Singapore (EDB, 2002b). The questionnaires were addressed to company directors, general managers, heads of operations, and such personnel who would be in a decisionmaking capacity and likely to know the company's experience in weathering the crisis. Among the respondents, foreign firms tend to be publicly listed, have large annual sales and fixed assets, and employ a larger workforce, whereas local firms tend to be private or family run, have a smaller sales revenue and fixed assets, and employ fewer people. This reflects the bifurcated segmentation of Singapore's electronics industry into global firms and local suppliers (see Mathews, 1999; Perry and Tan, 1998). To complement the postal survey, we conducted semistructured interviews with top executives from four foreign and eight local firms to unravel the complexity and dynamics of ongoing processes that are difficult to record in statistical data (Hughes, 1999; Schoenberger, 1991; Yeung, 2003). Where possible, we used a tape recorder to capture the richness of data. These were then transcribed and verbatim quotes are used in the following analysis.

In table 3, we present our survey data on the extent to which responding firms recognised state discourses of the crisis and offered their own counterdiscourses. Although these categories were presented to the respondents in our survey questionnaires, they by no means limited the choice and selections of our respondents. In fact, some respondents offered their own explanations under the 'other' category. About 76% of local and foreign firms ($n = 41$) identified the state's discourse of the crisis as an externally driven event—an indication of the clarity and focus of state discourses and their effective transmission through state-owned local media and other channels of formal and informal dialogues. Although there is no statistically significant difference

Table 3. Recognition of state discourses of the Asian economic crisis by local and foreign firms in Singapore (source: authors' survey).

	Local firms ($N = 36$)		Foreign firms ($N = 18$)		All firms ($N = 54$)	
	frequency	%	frequency	%	frequency	%
Responding firms' recognition of state discourses of the crisis						
Crisis was caused by factors external to Singapore	25	69.4	16	88.9	41	75.9
Uncontrollable events caused the crisis	10	27.8	1	5.6	11	20.4
Singapore is a helpless victim	1	2.8	0	0	1	1.9
Other	0	0	1	5.6	1	1.9
$p < 0.111$, $\chi^2 = 6.007$						
Degrees of freedom = 3						
Responding firms' counterdiscourses of the crisis						
Weak economic and financial fundamentals are the cause of the crisis	17	47.2	12	66.7	29	53.7
None	7	19.4	5	27.8	12	22.2
Government mismanagement caused the crisis	6	16.7	1	5.6	7	13.0
Other explanations exist for the crisis	4	11.1	0	0	4	7.4
Cronyism caused the crisis	1	2.8	0	0	1	1.9
Conspiracy caused the crisis	1	2.8	0	0	1	1.9
$p < 0.373$, $\chi^2 = 5.363$						
Degrees of freedom = 5						

between the responses of local and foreign firms (perhaps because of the relatively small sample size), more local firms recognised 'uncontrollable events' as the cause of the crisis compared with foreign firms. This finding hints at local firms' lower capacity to cope with such events compared with larger foreign firms, as revealed in in-depth interviews, analysed in the next section. When asked about alternative explanations of the crisis, however, many responding firms ($n = 29$ or 53.7%) surprisingly indicated 'weak economic and financial fundamentals' as a more appropriate explanation than those presented in state discourses. The four respondents (7.4%) who indicated 'other' explanations also mentioned precrisis structural problems and economic conditions as contributing to the crisis. Interview data reveal that although most firms agreed with state discourses that the crisis was largely a result of external causes and that Singapore was victimised to a certain extent, many respondents argued that more could have been done *before* the crisis to cushion its impact on firms and industries. This finding significantly contradicts the discursive strategy employed by the state to avoid political responsibility, as described in section 4.2. Given their direct exposure to global business cycles in the industry, electronics firms clearly had their own views on and explanations for the crisis that did not always correspond to state discourses.

These counterdiscourses of the crisis afforded by electronics firms are most evident in the interview data through which top executives shared their views, rationales, and experience. In general, these counterdiscourses tend to fall into four main categories: the crisis was caused by (1) being unprepared; (2) the profligacy of the early 1990s; (3) over concentration and dependence on the electronics industry; and (4) over-reliance on attracting foreign companies and the neglect of local firms. In the first view of 'being unprepared', many interviewees saw economic crises as a fact of business life—part and parcel of cyclical events—that firms must be prepared for through contingency plans. Although this view did not constitute an alternative explanation as to what *caused* the crisis itself, its proponents attributed difficulties faced by firms during the crisis to firm-specific factors and management issues:

> "We need to have contingencies. We know that economic crises are cyclic[al]. It happens all the time. It is a *fact* that we have to live with. ... If you are in the electronics industry you have to be prepared for it. You have to budget crises also into your annual budget. You cannot exclude it. Some companies behave as if it will never happen" (local electronics firm 1, emphasis in original).

Interestingly, metaphors of natural disasters were brought up during the interviews. However, their usage in state discourses was contested by interviewees, who saw natural disasters as sudden events that could not be predicted whereas economic crises were seen as 'predictable' to some extent because of their cyclical nature:

> "A flood or something like that ... [is] unpredictable. That is a crisis. Predictable things are not crises after a while. The first time you experience it, it is a crisis. But economic crises are not crises as such, because we know it's going to happen. We know that downturn comes like this. Then we have to make provisions to keep some things so that we can come out of it stronger" (local electronics firm 1).

This particular understanding of the crisis by a local electronics firm obviously challenges the state's discursive strategy of using metaphors of natural disasters to represent the crisis.

Second, some interviewees viewed the crisis as a result of excesses in spending and capacity building in the industrial sector. For example, answers to 'other' alternative discourses included 'negative results of excesses in manufacturing, finance, investment'. Whereas the previous perspective attributed negative impacts of the crisis to firm-specific problems, this view related the crisis to mistakes made by the electronics industry at large, in terms of overly optimistic forecasts, imprudent spending, and the

build up of excessive stocks and capacity during the 'good years' of the early 1990s. An interviewee from a foreign electronics firm related how as:

> "New models keep coming up and very bullish forecasts . ... so we keep building up and customers chase after us—'Hey, I want to see your expansion plan, to match my forecast this year'... Everybody shows 40 percent growth rate. Then I've got to show mine, I've got to match. Then I have to buy new equipment, new floor space, new manufacturing base overseas . ... All of a sudden the bubble just collapsed . ... I think we all knew that [a crisis] would be coming. But because the party mood was so good, nobody was willing to spoil the party" (foreign electronics firm 1).

The general buoyant mood thus led to profligate spending and investments that later proved to be unsustainable. In this way, the crisis could be seen as the product of problems originating from an industry-wide malaise. This view was supported by another interviewee (local electronics firm 8) who partly attributed her company's relatively good performance during the crisis to the prudent and 'conservative' style of the managing director.

In the third and fourth views the crisis was attributed to wider structural problems in the Singapore economy *before* the crisis (see table 3). The electronics sector was one of the hardest hit during the crisis, and Singapore's narrow focus on that industry was offered as an explanation for its negative experience during the crisis. Many interviewees pointed out that, although electronics is actually a very broad category, ranging from automotive, to chemicals, to aerospace, the electronics industry in Singapore indeed focuses only on a few selected sectors—consumer electronics (Brown, 1998; Perry and Tan, 1998), hard disk drives (HDDs) (McKendrick et al, 2000), semiconductors (Henderson, 1989; Mathews, 1999; Scott, 1987), and, recently, wafer fabrication. This narrow focus became more critical when the industry failed to move up the skills ladder and the value chain before firms relocated their labour-intensive activities to cheaper neighbouring countries. A foreign electronics firm contended that, although the Singapore state has done well in looking ahead and obtaining first-mover advantage in industrial development, it has taken too long to diversify further:

> "At that time they brought in all the electronics industries to do labour-intensive work. But they didn't move fast enough, not quick enough. At the end of the day, labour cost went up, everybody moves overseas and we are stuck" (foreign electronics firm 3).

This finding again challenges the state discourses of the crisis as an externally driven and unpredictable event, for, if the state had diversified Singapore's manufacturing base through its industrial policies, then the crisis should have had less direct impact on the Singapore economy. Although the state has adopted the correct strategy in moving into high-value-added and high-technology activities, the execution of those strategies was seen as being too slow for business managers, who were perhaps better acquainted with the necessity of quick decisive actions in competitive and volatile business environments. The quality of research and development (R&D) activities in Singapore, which are being actively promoted, was also deemed to be not up to par at the moment (see also Phillips and Yeung, 2003). Singapore is thus stuck in the middle, with electronics moving out, with inadequately qualified labour for technology-intensive and knowledge-intensive activities, and the biotechnology sector waiting to take off. Some interviewees were in fact rather pessimistic about the future of Singapore's electronics industry:

> "I think that they [the state] are afraid to lose manufacturing industries, and they *will* lose manufacturing industries to neighbouring countries and to China . ... Singapore has become too dependent on electronics ... that was a decision from the past and now you are gambling on biotechnology, but that takes time. So the best thing you can do now is to buy time for the electronics industry" (foreign electronics firm 2, emphasis in original).

The last view that the state has spent too much in courting and keeping foreign firms in Singapore at the expense of nurturing a strong local base of small and medium-sized enterprises (SMEs) is certainly not new, as the problem was well recognised in two official reports during the 1990s (MoF, 1993; MTI, 1998). During tough times such as the crisis, this bitter complaint resurfaced as an explanation for Singapore's poor performance. The contention is that if there had been a strong base of local companies prior to 1997, Singapore would have been less dependent on foreign investments, and the economy would have been stronger and less subject to external forces such as decisions by foreign firms to divest. This was a rather emotional topic for some, and discussions tended to be quite passionate among representatives of the SMEs interviewed. For example, the overdependence on foreign firms was seen by some as increasing the vulnerability of local suppliers to the 'unethical' practices of some foreign firms.

5 Contesting the crisis and its discourses: mediating strategies of firms

To assess the extent to which firms have responded to crisis-specific policies legitimised and implemented by the state, we asked our respondents to evaluate the impact on and usefulness of several major policy initiatives to their companies and the electronics industry in general. The survey data illustrated in figures 2 and 3 point to the relatively more important role of reduced corporate taxes, rental, and utilities for the sampled firms and the electronics industry as a whole. Despite controversy highlighted in media reports, the cut in employers' contributions to the

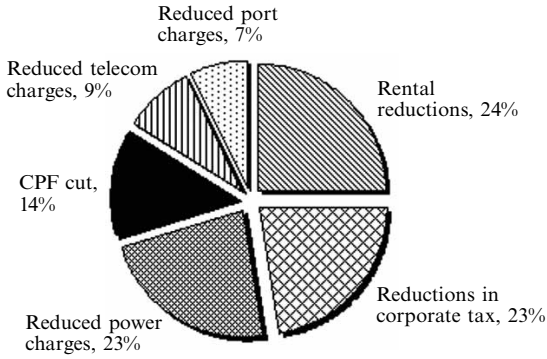

Figure 2. Percentage distribution of perceived impact of state policies on firms' operating costs (source: authors' survey). Note: the total responses are based on respondents selecting 'very large' as their perception of the impact of these policies.

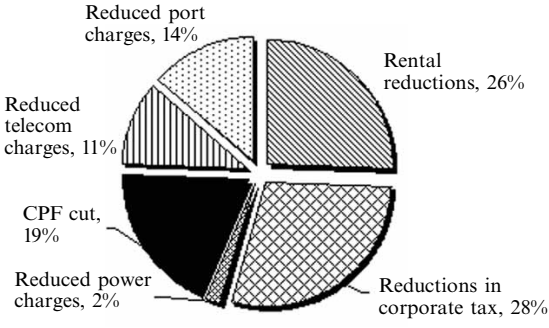

Figure 3. Percentage distribution of perceived usefulness of state policies to the electronics industry (source: authors' survey). Note: see figure 2.

Table 4. Perceived impact of rental reductions on company operations and the electronics industry in Singapore (source: authors' survey).

	Local firms ($N = 36$)		Foreign firms ($N = 18$)		All firms ($N = 54$)	
	frequency	%	frequency	%	frequency	%
Perceived impact on firms						
Very large	11	30.6	0	0	11	20.4
Large	8	22.2	8	44.4	16	29.6
Little	11	30.6	7	38.9	18	33.3
None	4	11.1	2	11.1	6	11.1
Not applicable	2	5.6	1	5.6	3	5.6
$p < 0.101$, $\chi^2 = 7.750$						
Degrees of freedom = 4						
Perceived impact on the industry						
Very useful	20	57.1	4	22.2	24	45.3
Useful	9	25.7	6	33.3	15	28.3
Quite useful	5	14.3	4	22.2	9	17.0
Not useful	1	2.9	4	22.2	5	9.4
$p < 0.373$, $\chi^2 = 5.363$						
Degrees of freedom = 3						

CPF was, surprisingly, deemed by our interviewees as being relatively less important and useful to their firms' operations. There is no statistically significant variation between local and foreign firms' assessment of policy impacts, except for rental reduction, which local firms indicated as being more important to the firms and to industry (table 4). The high rental cost in Singapore (pointed out by almost all interviewees) was felt more strongly by local firms, which tend to be small in terms of sales revenue, assets, and labour force, and rental occupies a relatively larger proportion of their overheads. More generally, the feeling among top executives was that, although its policies were useful, as 'every little bit helps', the state could have done more:

> "it's what *degree* of reduction. If the government just reduce five percent, I don't think you will see much impact. I think five percent—to me—it's very little. And then corporate tax.... They are very careful, the government. It helps, but it could be better, you know" (local electronics firm 7, emphasis added).

> "The government painted a nice picture with a series of packages and policies, but it's like 'an apple hanging in the sky'... Mentally, people feel better. But the effect for SMEs is not that great" (local electronics firm 3).

Interview results also indicate that reductions in corporate tax and rental, in particular, were seen as being the most useful but also the most inadequately implemented.

Although the off-budget packages listed in table 2 were presented as generous and signs of the state's commitment to businesses, their effectiveness and appropriateness were contested at the firm level, where they were seen as either insignificant or biased towards large (foreign) firms. First, this point was clearly raised during interview discussions on the CFP cut. Generally, we expect the impact of the CPF cut to be greater for firms that employ a large workforce (that is, foreign firms). This was confirmed by the survey results, presented in table 5 (see over). During in-depth interviews, foreign firms tended to see larger cost savings, whereas local firms viewed it as an insignificant proportion of their operating costs:

Table 5. Perceived impact of the cut in Central Provident Fund contributions[a] on firms with different numbers of employees (source: authors' survey).

	$\leqslant 50$ employees ($N = 22$)		51 – 200 employees ($N = 19$)		>200 employees ($N = 13$)		All firms ($N = 54$)	
	frequency	%	frequency	%	frequency	%	frequency	%
Very large	2	9.1	2	10.5	2	15.4	6	11.1
Large	7	31.8	9	47.4	9	69.2	25	46.3
Little	10	45.5	7	36.8	2	15.4	19	35.2
None	3	13.6	0	0	0	0	3	5.6
Not applicable	0	0	1	5.3	0	0	1	1.9

$p < 0.196$, $\chi^2 = 11.107$
Degrees of freedom = 8

[a] See table 2.

"These are all beneficial for [foreign firms]. You see, 50 percent CPF cut—most SMEs employ about 10 [workers]. So I may save about S$1500 on CPF. And then if you look at the profit or loss, S$1500 is not actually a lot. The rental itself can be a few thousand dollars. For us, the impact is not there.... I still increase their wages. To me, it's not a lot of difference" (local electronics firm 6).

In table 6, this sentiment is reflected in the finding that significantly more local firms viewed the CPF cut as 'very useful' for the industry because of the importance of big players (foreign firms) in Singapore's electronics industry. Concern for workers in terms of their general wellbeing and morale outweighed cost concerns for a number of interviewees. In fact, some companies interviewed continued to pay the original CPF rate or increased the take-home pay for workers because they felt that the policy was unfair to the workers. Contrary to the conventional wisdom of business policies as purely profit maximisation, the desire to foster company loyalty and good morale among staff was an important factor in business decisions:

"We have people who have worked for 30 years in the company. We are very concerned about loyalty of our people to us, and our loyalty to our people. So that's why we make every effort to keep the operations lean. So that if there is a problem... we don't have to downsize, we are able to sustain" (local electronics firm 1).

Table 6. Perceived usefulness of the cut in Central Provident Fund contributions[a] in improving business conditions for the electronics industry in Singapore (source: authors' survey).

	Local firms ($N = 35$)		Foreign firms ($N = 18$)		All firms ($N = 53$)	
	frequency	%	frequency	%	frequency	%
Very useful	15	42.9	3	16.7	18	34.0
Useful	14	40.0	4	22.2	18	34.0
Quite useful	5	14.3	8	44.4	13	24.5
Not useful	1	2.9	3	16.7	4	7.5

$p < 0.012$, $\chi^2 = 10.918$
Degrees of freedom = 3

[a] See table 2.

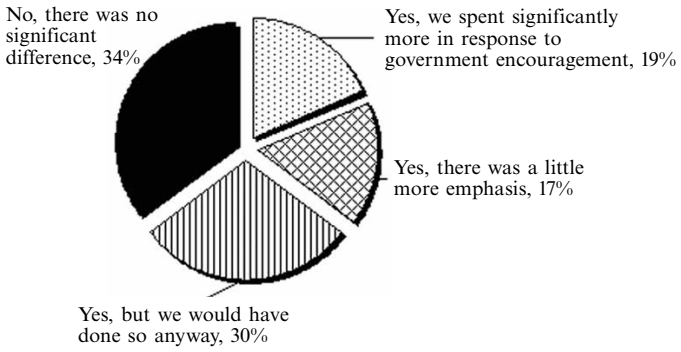

Figure 4. Firms' responses to state emphasis on the need for skills upgrading (source: authors' survey). $N = 54$.

In addition, the need for skills upgrading and training of, in particular, older workers has been prominent in state discourses ever since earlier rounds of industrial restructuring during the late 1970s (Ho, 1993; 1994; Rodan, 1989). During and after the recent Asian economic crisis, the strategy has been constructed in these discourses as a necessary longer-term response to Singapore's decline in competitiveness and its drive towards a knowledge-based economy (Coe and Kelly, 2000; 2002). Employers and workers were urged to take advantage of various state-sponsored programmes and subsidies for skills redevelopment. Such encouragement seemed to produce only lukewarm responses from our surveyed firms. As indicated in figure 4, most respondents indicated no significant difference in spending or emphasis, or would have invested in such training anyway regardless of state encouragement.

Interviewees who indicated little change in emphasis mostly questioned the practical relevance of these training programmes, mainly because of the nature of their industry (for example, those involved in the packaging and handling of chemicals). The skills needed for many of these supplier firms were often obtained on the job and do not require formal training with paper qualifications. These firms did not see the relevance of the state discourse on skills upgrading, seeing it as a case of 'putting the horse before the cart'. This discussion relates to the earlier point on how Singapore might have 'missed the boat' in 'moving up' before manufacturers 'move out' to other low-cost locations, thus getting 'stuck' with low-value and low-skilled jobs that are presently not amenable to upgrading.

If local and foreign firms in our survey have not really aligned their operations with state-inspired discourses and policy initiatives (for example, the CPF cut and the upgrading of workers), what then would be their strategic responses to contest and negotiate the debilitating effects of the recent Asian economic crisis? Our survey and interview data show two such strategic responses at the firm level. First, many interviewees attached great importance to their strategy of product diversification before the crisis—away from the mainstays of electronics (for example, HDDs, consumer products, and semiconductors) to such other markets as automotive components, industrial equipment, the aerospace industry, and medical and surgical equipment. This was especially so for supporting industries that were able to supply to other sectors with minor modifications to their equipment and other fixed assets. A local firm showed how:

"We were lucky that we diversified into medical and surgical [equipment and] automobiles.... Because of that, the crisis in the [HDD] industry did not affect us very much.... *We were saved because of the diversification, nothing else.* We had markets that were running okay when certain areas collapsed. And we work towards

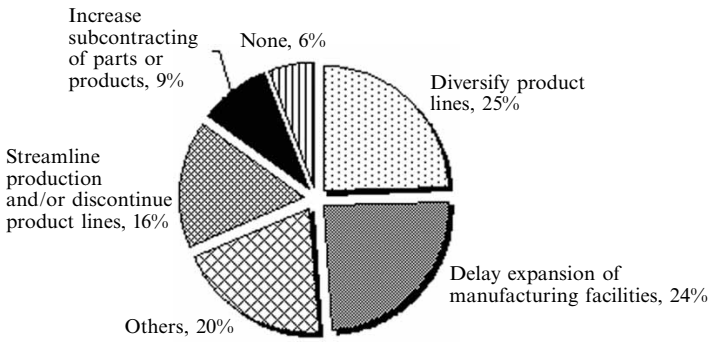

Figure 5. Responding firms' mid-term to long-term measures to combat the Asian economic crisis (source: authors' survey). Note: respondents can list up to two options and therefore the total response is more than the number of firms surveyed. $N = 86$.

keeping those vulnerable areas—the percentages—lower" (local electronics firm 1, emphasis added).

Others who did not do so before the crisis also identified diversification as an important strategy for long-term planning. In figure 5, product diversification emerges as the most cited measure (25%) to combat the crisis. Such a strategic response follows naturally from the general sentiments about the overconcentration of the Singapore economy on electronics manufacturing (see section 4.3).

In addition, market information and intelligence gathering formed another critical strategy to minimise the negative impact of the crisis. Most interviewees saw great importance in the ability of firms to obtain advance information about the imminent possibility of a crisis. Such precious information could buy time for these firms to establish contingency plans and make appropriate operational and financial arrangements. When asked for their differences in information-gathering capabilities, most interviewees from local and foreign firms believed that foreign firms had particular advantages because they could obtain a better 'feel' of market sentiments and economic conditions vis-à-vis their intrafirm channels and wider spread of global production, marketing, and financial networks (see Egelhoff, 1982; 1991; Reuer and Koza, 2000). Such information privilege was also extended to suppliers and subcontractors of these transnational corporations (TNCs) as they could detect changes in orders and prices in a more regional or global context:

"Definitely they have an advantage. And those people who sell to [TNCs], they will know way ahead before the government release the news. When we sell to [TNCs] or even subcontractors of [TNCs], they can tell about six to nine months ahead ... . Like me who sell to a wide range [of industries], we can see very clearly. So having that exposure is good" (local electronics firm 6).

When asked about the very first indication of the imminent arrival of the crisis, several interviewees pointed to the importance of other extrafirm channels. More informal channels included personal networks of friends, business contacts in the region, and customer visits. Other interviewees obtained such information from what they called intuition, by monitoring and interpreting changes in shipments, orders, and prices:

"[In] 1996 we already knew ... around September. We knew at least six months before the government because our customers began to adjust their inventory. ... The shipment pattern became irregular and inventory went high. They [customers] could not give you an accurate forecast and you know something bad was coming" (foreign electronics firm 1).

The ability of firms to detect changes in market conditions and the advent of difficult times long before any state announcements or policy responses was emphasised by many interviewees, who attributed this ability to their immediate contact with the business environment and their 'frontline position'. As such, firms access information from multiple sources and base their decisions on interpretations of multilayered information that often goes beyond the national context. Contestation at the firm level may occur when such information and/or predictions run contrary to messages advocated in state discourses and policies.

6 Conclusions

In this paper we have examined how electronics firms in Singapore have negotiated and responded to state discourses of and policy responses to the recent Asian economic crisis. In particular, we have demonstrated that discourses at the national (state) scale might not be accepted unchallenged and uncontested at the scale of the firm. Such contestation and its varied outcomes can be explained by such mediating factors as personal experience, varying firm circumstances, the spatial extensiveness of intrafirm and interfirm networks, and the existence of various information channels (formal and informal). Although most interviewees in our study agreed with and complimented the efficacy of the Singapore state in combating the crisis, the ways in which this efficacy was achieved and the implementation of certain policies (or lack thereof) were points of contention. Such economic actors as electronics firms in Singapore clearly had their own explanations and understanding of the crisis and might (and often did) disagree with the effectiveness and usefulness of certain policy responses. In this paper, we have shown how the ability to weather the crisis varied between local and foreign firms and their firm-specific strategies in overcoming such difficulties. Our study therefore provides a complementary perspective absent in previous studies of the crisis and its impact at the national scale.

Discussions in the preceding empirical sections thus highlight two important theoretical issues worthy of further geographical research. First, this exploratory study shows that the interscalar nature of economic processes (for example, the crisis) can be analysed through a conceptualisation of the firm as a relational site for the (contested) manifestation of forces operating across different spatial scales. At this site, actors bring together information from state (national) discourses, intrafirm channels (global and regional), informal business networks (local and national, and regional), personal experiences, and beliefs; they filter and interpret this information and then synthesise it into particular business decisions and strategic responses. Our study points to the need for a relational conception of the firm in economic geography (see also Dicken and Malmberg, 2001; Ettlinger, 2001). Here, firms are not passive 'black boxes' responding to abstract market forces via the price mechanism, as conceived in neoclassical economics. Rather, firms are important sites for *contesting* discursive formations and material processes operating at different spatial scales; they are certainly active agents of change, capable of producing a reality through their own lenses and discursive 'logics'. In our study, electronics firms in Singapore often did not subscribe blindly to state-driven discourses of the Asian economic crisis. Instead, our sample firms (local and foreign) navigated through the crisis according to their *own* understandings of the crisis and information repertoires. Whereas the Singapore state discursively legitimised such policy initiatives as the CPF cut and upgrading of workers, the firms relied on product diversification and information-gathering as important mediating strategies to cope with the crisis. The extent to which these firms were able to implement these strategies was largely dependent on their articulation into intrafirm and extrafirm networks cross-cutting the national, regional, and global scales.

Second, our study has verified the claim that discourses (and such representational devices as metaphors) are not merely ways of constructing and conveying meanings; they are indeed capable of producing material outcomes that may not always be intended (see also Kelly, 2001; O'Neill and Gibson-Graham, 1999; Schoenberger, 1997). Through their different contestation and negotiation strategies, actors participate in producing such material processes. Their specific motives and rationalities, however, mediate their concrete practices such that the unfolding material reality does not necessarily follow the intended prescriptions of dominant discourses. An appreciation of this lack of necessary correspondence between the logics of discourses and their intended material outcomes points to a potentially fertile ground for future geographical research into discourse and practice. It also implies that unpacking dominant discourses in their own right might not be sufficient to explain geographical outcomes of these discourses. A necessary step forward is to link these discourses to actor-specific practices mediated by a diverse range of factors and conditions that in turn account for the outcomes, whether intended or not. As shown in this study (see also Yeung, 2002a), to explain the concrete outcome of the crisis one requires more than just an understanding of the sociopolitical constructions of crisis discourses. It is also imperative to examine how these discourses 'work' through actor-specific practices and produce (un)intended material outcomes in the national and global space-economy.

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