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Diffusion and adaptation: why even the Silicon Valley model is adapted as it diffuses to East Asia

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Abstract: Diffusion scholarship expects little adaptation of core elements of policy models. However, the empirical reality is different; diffusion of even highly-regarded models, such as the Silicon Valley venture capital (VC) policy model, results in marked adaptation of the source model. This article asks: why does variance, rather than convergence, characterize the diffusion of the Silicon Valley VC model? The answer to this question lies in conceptualizing policymakers as *rational in light of their normative context* rather than as wholly rational or bounded learners. I demonstrate why and how the Silicon Valley VC model is necessarily adapted by “contextually rational” policymakers in the geographically, ethnically and economically proximate states of Hong Kong, Taiwan and Singapore. I find that policymakers’ interventionist orientations, private sector financing preferences and international versus domestic firm promotion biases drive contextually rational – and unique – adaptations of the Silicon Valley VC policy model. Policymakers’ norms are central to shaping how the model is translated into local policy action, meaning we can, and should, expect adaptation as a result of diffusion.

Keywords: diffusion, bounded rationality, international political economy, Silicon Valley, East Asia, venture capital

Empirically, the diffusion of clear, successful policy models do not always, or even frequently, result in convergence. Transformation and variance, rather than complete convergence, characterize the ways in which adopting states deploy local versions of policy

models (Yeo and Painter, 2011; Klingler-Vidra, 2014c; Knill, 2005; Rose, 1991). Yet diffusion scholarship has only made initial attempts at formalizing how aspects of the diffusion process actually engender diversity rather than convergence (Weyland, 2012; Falkner and Gupta, 2009; Solingen and Börzel, 2014). This article strives to extend the nuanced analytical tools available for investigating why *diffusion itself* leads a range of “*more or less*” convergence, rather than binary “convergence or not” outcomes (Klingler-Vidra and Schleifer, 2014; Solingen, 2012).

International political economy (IPE) scholarship’s bias towards explaining convergence comes from early IPE diffusion scholarship’s focus on the impact of competitive pressures in driving the adoption of similar policies amongst geographic clusters and cultural peers (e.g. Elkins and Simmons, 2005). This diffusion scholarship argues that the spatial and temporal clustering of policies, organization structures, government regime types, etc. in light of globalization suggests that there is increasingly less scope for unique choices (Simmons *et al*, 2008; Busch and Jörgens, 2005; Holzinger and Knill, 2005). As a result, diffusion scholarship tends to explain broad patterns of convergence (Levi-Faur *et al*, 2011: 1345; Weyland, 2006: 14; Strang, 1991). For example, in her research on the diffusion of liberal market reforms, Meseguer (2009: 1) acknowledges that there has been “differences in the timing of reforms, in their speed and intensity, and in their results,” but the aim of her study was “not to explain those differences.” Diffusion research also expects there to be convergence across adopting populations because of its tendency to investigate instances of the transmission of singular policy models (Falkner and Gupta, 2009; Klingler-Vidra and Schleifer, 2014).

Diffusion’s learning mechanism has been employed to investigate convergence as the

outcome of diffusion processes in a number of empirical areas (see Volden *et al*, 2008; Meseguer, 2009). The rational expectations inherent in the learning literature lead to an overarching hypothesis that when actors study the same (perfect) information we necessarily expect them to make the same decisions (given the assumption that actors have the same, predictable preferences). As an illustration, in her rational learning investigations, Meseguer posits that if policymakers obtain information about a highly successful model from outside their region, “they will make the same policy choices” (Meseguer, 2009: 216). In bounded rationality literature, though actors are no longer assumed to be identical in their preferences, there is still an expectation towards more, rather than less, convergence. Bounded rationality’s proclivity towards explaining convergence stems from its focus on explaining which models are studied via the availability and representativeness cognitive heuristics (Poulsen, 2014; Weyland, 2006). Fundamental to my argument, even the cognitive bias best positioned to explain localization – “anchoring” – expects a high degree of replication since policymakers hold the core elements of the studied model as an “anchor” from which they do not deviate (McDermott, 2008).

As a result of both rational and bounded learning theory’s expectations of convergence, there is insufficient analytical muscle in diffusion’s learning scholarship to account for the empirical reality of diversity as a pervasive outcome of diffusion processes. This article addresses this deficiency by theorizing how learning processes necessarily drive adaptations of – rather than conformity to – diffusion templates. My contention is that the entire learning process is shaped by policymakers’ “contextual rationality” – meaning that the initial selection of information to study, the subsequent template search process and processes of adaptation to the local context – can be understood by investigating local normative biases. Given my presumption that local norms are central to how policies diffuse, even core

elements of policy templates are expected to be transformed differently as they diffuse. In light of my focus on policymakers' norms in the diffusion process, similar to Acharya (2004, 2009), Lenschow *et al* (2005) and Yeo and Painter (2011), this paper delves into the “black box” of the local context in the diffusion process.

This paper proceeds as follows. To start, I introduce the case study: the diffusion of the Silicon Valley venture capitalⁱ (VC) policy model to East Asia. Next, I review the bounded learning tools, particularly the literature's limited ability to systematically account for adapted versions of policy anchors. I then hypothesize how “contextual rationality” enables us to better account for the adaptation of policy models in the learning process. In doing so, I identify the norms that are expected to shape policymakers' learning in the Silicon Valley VC policy area, leading to the policy model's unique localizations. The following two sections present the roles of norms in transforming the Silicon Valley VC policy model into the local VC policies deployed in Hong Kong, Taiwan and Singapore. In the concluding section I discuss what the findings mean to the strength of the contextual rationality argument, and the impact of these results on IPE scholars' expectations for, and understanding of, the pervasiveness of adaptation in international diffusion processes.

Case Study: Diffusion of the Silicon Valley VC Policy Model

An illustrative case of the empirically pervasive phenomenon of “less convergence” emanates from Silicon Valleyⁱⁱ: policymakers from at least 41 states studied the Silicon Valley VC policy model but then went on to deploy markedly different, interventionist VC policies at home. Internationally adopted “Silicon” monikers demonstrate the global reach of aspirations to build local Silicon Valleys. A few examples include the “Silicon Roundabout”

in London, Taiwan's "Silicon Island," Australia's "Silicon Beach," and the "Silicon Alley" in New York City. A myriad of "supply side and demand side" policies have been deployed by numerous polities in an attempt to promote Silicon Valley-like high-technology entrepreneurial and investment activity (Avnimelech and Teubal, 2008). In fact, there is an effective "menu" of eight categories of public policies deployed to build a local Silicon Valley, including funding, taxation, regulation, promoting clusters, investing in technology infrastructure, attracting talent and investment, furthering stock market access and offering relevant education and training (Klingler-Vidra, 2014b: 38-41).

The VC component of the Silicon Valley cluster has been of particular interest for policymakers. Policymakers' interest in VC comes as venture capitalists – along with angel investors – fill the "equity gap" that early-stage high-technology start-ups face when building their business (Kortum and Lerner, 2000). Rather than a bank giving entrepreneurs a loan, VC managers are hailed for being "smart money" because of their technology savvy, product development expertise and rolodex of potential customers and acquirers (NVCA, 2011). For these reasons, in polemic, academic and policymaker press, VC has been purported to drive innovation, employment and economic growth (Lerner, 2009). For example, the Wall Street Journal recently dubbed VC "Humanity's Last Great Hope" given venture capitalists interest in, and ability to, invest in blue sky research, which research and development (R&D) coffers are increasingly shying away from (Mims, 2014).ⁱⁱⁱ It is with these motivations in mind that policymakers study how they can "develop their own venture capital industries" similar to Silicon Valley as a means to support local innovation, competitiveness and high-technology entrepreneurial activity (Gulinello, 2005: 846).

The VC policy template that they study includes three components – none of which

were aimed specifically at Silicon Valley, but were American tax and regulatory changes that have become synonymous with promoting Silicon Valley's VC success: the limited partnership (LP) structure, attractive tax rates (the capital gains tax rate) and the allowance of private, institutional investors to invest in the VC asset class (via the Department of Labor's 1979 reinterpretation of the Employment Retirement Income Security Act ("ERISA") Prudent Man Rule)(Klingler-Vidra, 2014a: 44-46; Lerner, 2009). America's LP structure reduces the potential liability of the VC funds' managers and investors by ensuring that their personal assets are not liable should the fund management company (and its portfolio companies) encounter financial difficulty. Importantly for the financial viability of the sector, LP structures correspond to capital gains tax treatment, which means that VC funds' profits are subject to a lower tax rate than the corporate tax rate (Lazonick, 2009). The ERISA reinterpretation helped catapult Silicon Valley VC investment activity as it allowed major American institutional investors to invest in VC (Lerner, 2009: 39; Gompers and Lerner, 1999).

Together, these three elements – a robust legal structure, attractive tax rate and regulatory clarification – constitute a successful neoliberal VC policy template; neoliberal because the American tax and regulatory policies enabled but did not direct market activity. The Silicon Valley VC cluster emerged because of local demand for VC (from the local concentration of high-technology firms), not because of purposive action to drive Silicon Valley VC investment activity specifically.^{iv} In bounded rationality terms, the regulatory reinterpretation, legal structure and low tax rate constitute an “anchor” for how to create a Silicon Valley-like VC cohort.

As mentioned on page four, 41 countries have deployed Silicon Valley-inspired VC

policies. Adopters range in terms of geography, culture, regime type and size, including Russia and Canada, France and the UK, China and Chile (see Klingler-Vidra, 2014a). Figure 1 illustrates the diffusion trend.

Figure 1: State Launches of VC Policy Efforts (Cumulative Number 1979 – 2012)

Source: Klingler-Vidra, 2014a. **Methodology:** Chart indicates initial VC policy launch date and represents the cumulative number of VC policy launches. Sample is all OECD, G-20, BRICs and Asian Tiger countries (45 states^v). 41 states (nearly 90%) had launched some form of VC policy.

On the surface, VC policy diffusion seems to be a story of “universal convergence” (Kuczynski and Williamson, 2003: 325). But, when looking beneath the veneer of the broad VC policy diffusion trend, I find that VC policies do not converge on replicating Silicon Valley’s neoliberal policy environment (Klingler-Vidra, 2014a: 39-42). Rather than deviating slightly from the Silicon Valley VC policy “anchor”, as learning scholarship would expect, VC policies deployed outside of Silicon Valley have *differed significantly* from the Silicon

Valley model. Rather than deploy the core elements of Silicon Valley's market enabling environment, policymakers outside of Silicon Valley have NOT opted for regulatory or tax changes.

Instead, following their studying of the Silicon Valley VC policy template, policymakers have funneled billions of dollars into government-run VC funds, offered VC industry-specific tax credits (rather than a low tax rate), designed fundamentally different legal structures, and have employed non-financial incentives such as paths to permanent residency. Regulations and legal structures have often not limited investor's liability, nor have they allowed institutional investors (such as pension funds) to invest in the risky asset class. Unlike the Silicon Valley model's classification of VC profits at the capital gains tax rate, many polities have offered tax exemptions or credits, or have classified VC profits at corporate tax rates. What's more, they have used a policy tool which was not present in the Silicon Valley VC policy template – funding to VC managers.^{vi} Government VC funds of funds have invested in VC managers such that policymakers “pick winning VCs” who they believe are best able to “pick start-up winners” (Klingler-Vidra, 2014a).

Critically, even states of similar population and economic sizes that are geographically proximate and at comparable levels of industrialization have not implemented similar interventionist adaptations of the Silicon Valley VC policy template. Instead, even amongst proximate cultural and regional peers there have been significant variations both in terms of which core elements of the Silicon Valley template are deployed as well as in how these elements are adapted. As a testament to the diversity that characterizes this diffusion pattern, no two countries were found to have identical VC policy forms. Rather than convergence occurring at least within proximate clusters, as diffusion theory would expect to

happen, variety characterizes the VC policies adopted by regional, cultural and industrially proximate peers.

To advance IPE scholarship's analytical tool set for understanding why diffusion can – and often does – produce diversity amongst peers, I investigate the impact of contextual rationality on the diffusion of the Silicon Valley VC policy model to East Asian states. I explore how a Western model is diffused to East Asia for several reasons. Diffusion research has tended to investigate global diffusion trends (e.g. Simmons *et al*, 2008; Solingen and Borzel, 2014; Drezner, 2005) or diffusion to, and within, the Americas and Europe (e.g. Meseguer, 2008; Weyland, 2005, 2010, 2012; Swank, 2008; Radaelli, 2005; Checkel, 1999). In this way, the article contributes to the modest number of studies on the diffusion of Western models to the East Asian region (e.g. Yeo and Painter, 2011; Klingler-Vidra, 2014c). In addition, these three Asian cases offer me the ability to examine diffusion into states of comparable sizes (population and economy wise) and development trajectories. Hong Kong, Taiwan and Singapore each have largely ethnically Chinese populations of less than twenty-five million people (between six and twenty-three million) and economies with gross domestic product ranging from USD 250B to USD 475B.

Important to this article's theoretical contribution, the East Asian cluster warrants investigation because comparative capitalist literature, until recently, has spoken of a 'singular Asian model' (Amable, 2003) that governs the market, explored only a few East Asian state (Storz and Schafer, 2011) or developed descriptive models (Whitely, 1992; Walter and Zhang, 2012; Witt and Redding, 2013). I can contribute to East Asian comparative capitalism by identifying the unique, rather than uniform, norms that guide industrial policymaking within East Asia. Finally, and importantly to the robustness of the

generalizability of the case study results, prior to choosing the East Asian cluster I mapped the VC policies deployed across numerous regions (including South America and Europe) and found variation within each cluster (Klingler-Vidra, 2014a). This helped me verify that East Asia's regional variance is consistent with the variety – and interventionist nature – of policies deployed within other regions.

This study's data stems from semi-structured interviews with VC policymakers, VC industry professionals and small-and-medium-sized enterprise (SME)-focused international organization staff. I interviewed the senior VC policymakers in each case (Hong Kong, Taiwan and Singapore) and then utilized the snowballing technique to identify the next interviewees. Interviews focused on how the Silicon Valley VC policy model was studied, the focus of additional template searching, through to how and why local VC policies took their particular shape. These interviews, along with reviews of government reports and communiqués, form the basis for my findings about the role of norms in driving VC policymaking in the East Asian cases.

Bounded Rationality's Anchor

Drawing upon cognitive psychology tools, Weyland (2005, 2006) blazed the trail for cognitive bias conceptualization in IPE research, by articulating how shortcuts (availability, representativeness and anchoring) steer policymakers' (boundedly rational) learning process. Weyland (2006: 50-51) suggests that the three cognitive biases of availability, representativeness and anchoring propel the "spread of similarity and diversity" (Weyland, 2006: 8). But, as argued here, his conceptualization of the cognitive biases has not actually left scope for the causal paths by which cognitive heuristics lead to real diversity.

The first two cognitive heuristics – availability and representativeness – explain why certain policies are studied as well as how much value is assigned to the policies as templates. The availability bias refers to “people’s reliance on vivid, concrete, salient examples, which remain disproportionately cognitively ‘available’ in making choices about appropriate examples for emulation” (McDermott, 2008: 2). Said another way, availability is the tendency to study the policy experiences of leaders (e.g. U.S. or E.U.) or peers (geographically or culturally proximate). In this vein, policymakers are motivated to learn about successful external policies that are proximate to their existing belief system, political development histories or institutional patterns (Volden *et al*, 2008; Swank, 2008: 78). The availability heuristic skews policymakers’ attention towards studying the policies of states they believe are their peers or leaders. Representativeness, the second cognitive bias, refers to a tendency to assume that one country’s (positive) policy experience is likely to be representative of the experience elsewhere (Weyland, 2006: 50; McDermott, 2008: 2). Policymakers’ beliefs shape the perceived value of potential policy choices (Knill, 2005), which impacts the valuation stage of the policymaking process (Weyland, 2006: 50). More specifically, representativeness biases lead policymakers to subjective conclusions about the expected performance of the policy they are studying.

Weyland’s third heuristic, anchoring, is the cognitive bias that should best account for the localization – or lack of localization – of studied models. Anchoring describes people’s tendency to “focus on the ‘anchor’ of the original model” (McDermott, 2008: 2). The anchoring heuristic portends that policymakers are “reluctant to diverge radically” from the original model (Weyland, 2006: 51). This is why, according to bounded rationality scholarship, we see patterns of policy adoption – as policymakers deviate only slightly from

the anchor as they at least implement the “core” of the studied model. In her critique of bounded learning, Meseguer takes issue with this assumption that boundedly rational actors should converge on similar outcomes. She argues that although the bounded learning framework:

has been used to explain policy convergence, what one would actually expect is the opposite – that is, *policymakers arriving at very different conclusions about the consequences of policies, and hence choosing divergent policies* (Meseguer, 2009: 19; Italics added for emphasis).

My critique of Weyland’s anchoring heuristic is consistent with Meseguer’s logic: policymakers come to different conclusions about the value and fit of policy anchors in light of their biases. Bounded rationality, therefore, *should expect* learning to drive different adaptations, rather than replications, of policy anchors. My framework builds squarely on this point. Since biases are expected to lead policymakers studying the same information to arrive “at very different conclusions” (Meseguer, 2009: 19), in this article I delineate and investigate which biases shape the localization – and even rejection - of core elements of the Silicon Valley VC policy anchor.

The Transformative Role of Contextual Rationality

As discussed in the preceding paragraphs, cognitive heuristics’ primary analytical muscle stems from their ability to explain why policymakers study certain policy models, but are less geared towards explaining modification of the selected models. Importantly, though Weyland acknowledges that boundedly rational learning does not produce “mimicking” of the model,

he does not provide theoretical grounding for why and how much “anchors” are adapted locally. While Weyland’s work lacks sufficient tools for investigating this phenomenon, recent diffusion scholarship has conceptualized how chosen models are adapted locally. Scholars have demonstrated that domestic contexts are not “black boxes” into which models diffuse (Yeo and Painter, 2011). Relationships between foreign information and local biases as well as domestic institutional environments are understood to affect the “rate and form” of diffusion (Hall, 1993; Lenschow, *et al*, 2005: 799). Local agents reframe what they learn to increase its fit with the local normative environment in what Acharya refers to as “constitutive localization” (2009).

If we agree that agents adapt the models they study, Weyland’s anchoring heuristic gives insufficient capacity and attention to how policymakers transform even core components of models. It is in this vein that I argue as policymakers study a model, policymakers’ biases adapt (or even reject) core elements of the template to fit their local context. Rather than expecting replication of core elements as bounded rationality’s “anchor” heuristic portends, and rather than assuming wholly rational learning, I argue that policymakers are “contextually rational” as they systematically *adapt models to a degree and direction in line with their normative framework*. The significance of this distinction is that it expects that learning processes lead policymakers in different jurisdictions to make unique, potentially significant, adjustments to policy templates. Said plainly, contextual rationality expects less convergence than what bounded rationality theory is able to account for.

Following this rationale, my framework hypothesizes how policymakers’ norms determine the extent and direction of adaptation of models in the VC policy area. The norms that determine policymakers’ biases, which are instrumental in the VC policy area, are: (1)

interventionist orientation, (2) private sector financing norms and (3) international or local firm preferences. In the following paragraphs I detail how these three norms are expected to lead policymakers to come to informed, context-specific – and therefore unique – conclusions about how they deviate from the Silicon Valley VC policy anchor.

The first norm investigated in this study is policymakers' beliefs about the appropriate level, and form, of state intervention in the economy. Interventionist orientation norms inform the level, and ways in which, policymakers believe their state should intervene in the economy. As an illustration, some Asian policymakers, according to Chalmers Johnson's work on Japan (1982), have gone so far as to say that the private sector would not know what to do unless told. Others, such as the colonial Hong Kong government, have been avid believers that market actors can better manage production and the allocation of resources than the state. As a vivid illustration of this staunch belief in *laissez-faire*, the last governor of Hong Kong quipped that "the words 'industrial policy' make me curl up inside" (Patten, 1998: 243). Interventionist orientations such as these extreme examples of Japan and Hong Kong have a "path dependent" nature that informs the background by which policymakers consider industrial policies (Walter and Zhang, 2012; Skocpol and Weir, 1985). Policymakers' orientation towards neoliberal or interventionist roles in the economy sets the tone for how they are expected to evaluate and adapt the Silicon Valley VC policy model. For example, in *laissez-faire* Hong Kong, neoliberal policies that achieved success abroad – such as the VC regulations and attractive tax rate – may be adopted with few alterations. In contrast, interventionist policymakers, in industrialist states such as Singapore, are expected to localize the neoliberal model by deploying more overt support and more direction of market activity.

Second, I investigate policymakers' preference for using finance to support private sector activity. The norm stems from the interventionist orientation by informing whether and how policymakers fund private sector activity. Private sector financing norms range from states where directing large sums of financing to many firms is "the norm," to states that do not allocate any financing to any private firms. Preferences for deploying public money can take the form of the government using loans, grants or investment funds to encourage particular firms. In states where policymakers prefer not to allocate money directly to firms, policymakers may not distribute any of the government coffers to specific firms or industries. Said plainly, this norm addresses policymakers' proclivity – or intolerance – towards funding private firms.

The third norm investigated in this research area is policymakers' preference for supporting international or local firms. This norm informs whether policymakers focus on supporting local companies or if they work to attract foreign firms. States where policymakers' biases dictate that they focus on promoting local firms and, on the other hand, states whose policymakers prefer to attract foreign firms, are expected to adapt the Silicon Valley VC policy model differently. Policymakers with an international firm bias are expected to adopt Silicon Valley's LP structure more or less intact as their biases favor the use of policies that please international investors over the desires of local investors, thereby not deviating from a core element of the anchor. The LP structure, which is widely used by international investors, signals an interest in being compatible with international practices. In states where policymakers prefer to support local firms, however, VC policies are expected to be designed to drive the growth of *local* VC managers. A bias towards pleasing local investors means that adopting the international investor-friendly LP structure matters less than appeasing the local fundraising preferences. As a result, a local firm bias may lead to a

major adaptation or even rejection of a core element of the Silicon Valley VC policy model (the LP structure).^{vii}

Delineating the expected impact of these norms on VC policy diffusion processes helps me to formulate hypotheses about the unique ways in which policymakers are expected to adapt the Silicon Valley VC model. The norms of policymakers in the East Asian cases investigated here range from the Heritage Freedom Index's "most free economy" of Hong Kong, to Taiwan's bias towards using tax supports for local SMEs to Singapore's preference for leveraging financing to attract international multinational corporations (MNCs). East Asian policymakers also vary in their bias towards supporting international or local firms, as Taiwan's focus on local SMEs and Singapore's bias towards MNCs suggests. In light of the short length of this paper, the below Table summarizes policymakers' VC policy-relevant norms in each of the East Asian cases (See Klingler-Vidra, 2014a for further explanation of the East Asian states' VC policy-relevant norm classifications).

Table 1: East Asian policymakers' norms

	Hong Kong	Taiwan	Singapore
(1) Interventionist Orientation	Low	Medium	High
(2) Private sector financing	Little public money for private activity	Tax credits rather than direct transfers	Large funding initiatives to private firms
(3) International versus local	International	Local	International

The confluence of policymakers' norms in each state determines their contextual rationality, which is expected to shape their local adaptation of the Silicon Valley VC policy model in distinct ways.

Formal institutions (i.e. political regime types, the distribution of budgetary power, legal system, etc.) function as filters through which diffusion items pass (Radaelli, 2005). Formal institutions also have a dynamic relationship with policymakers' norms. Norms that dictate the use of financing to support private firms, for example, are shaped by the distribution of budgetary power to policymakers. In contexts where power over budgetary use is subject to cross-departmental (e.g. Taiwan) or even legislative approval (e.g. Hong Kong), policymakers have markedly different biases towards using finance-laden policies as compared to states in which policymakers simply need to ask their direct manager for access to funding (e.g. Singapore)(Klingler-Vidra, 2014a). Rather than a one-directional relationship, informal institutions are shaped by the formal institutions, and formal institutions similarly are shaped (and reshaped) by cognitive biases. Given the brief length of this article I am not able to systematically develop theorizing around the reverberations between norms and contextual factors, but the following empirical analyses do attempt to acknowledge these norm-institution relationships wherever pertinent.

Silicon Valley VC Policy Adaptations in East Asia

East Asia's VC policies are markedly different from one another and from the Silicon Valley VC policy model that the policymakers meticulously studied. As expected, Hong Kong's VC policy efforts are the most similar to the model. Hong Kong's VC policy formula includes a key component of the Silicon Valley policy template (the LP structure) but it also

consists of a (privately managed but publicly funded) USD 100 million VC fund. Taiwan diverged the most from the model as its policymakers did not adapt any of the core elements of the Silicon Valley VC policy template. Instead, they launched a 20% tax credit for VC investors and used a paper company structure. Singapore adopted the LP structure in 2002, but departed significantly from the neoliberal model as its policymakers deployed an internationally-focused USD 1 billion fund, offered permanent residency for VC fund investors and gave a tax credit for start-up investment losses. The following paragraphs give further insight into the unique VC policies deployed in each case.

Of the three cases, Hong Kong did the least to adapt the Silicon Valley VC policy anchor. Hong Kong's Innovation and Technology Commission (ITC) institutionalized their learning of the Silicon Valley model by hiring managers experienced in Silicon Valley to design and oversee their VC policies (Author Interview, Hong Kong, 20 December 2011). Knowing the importance of the right legal environment for its VC industry, Hong Kong's LP structure was made available for VC managers to use since the first VC activity began on the island. This core element of the Silicon Valley model was "transmitted" intact easily – since it had existed in Hong Kong's colonial British legal system since the early twentieth century (Klingler-Vidra, 2014a). While Hong Kong VC policies foster an enabling regulatory and tax environment akin to the Silicon Valley model, Hong Kong has not replicated all regulatory aspects of the model (e.g. Hong Kong has not utilized an ERISA reinterpretation to allow local pension funds to fully access the asset class)(Au and White, 2009: 24-25).

In addition to only adopting half of the core regulatory components of the Silicon Valley model, Hong Kong deployed a tax exemption and organized a public-private funding initiative, both policy instruments that were not present in the source model. Initially, Hong

Kong policymakers offered a low, horizontal capital gains tax rate in a manner consistent with the Silicon Valley anchor. But, feeling the “limits of laissez-faire” (Fuller, 2010) in competing against Singapore as a hub for VC activity, in 2005 policymakers offered tax exemptions for Hong Kong-based, offshore domiciled VC managers (Klingler-Vidra, 2014a: 104-105). Also going beyond what they learned from the Silicon Valley model, Hong Kong policymakers hired private VC managers to invest public money earmarked for VC investments via a fund named the Applied Research Fund (ARF) II in 1998 (Klingler-Vidra, 2014a: 102-104). The ARF II paid a management fee (of 3-4%) to established, international VC managers as policymakers felt they lacked the skills for picking start-up winners (Klingler-Vidra, 2014a: 2013; Hong Kong Trade and Industry Bureau, 1998: 2). In this way, though Hong Kong VC policymakers deployed funding, they did so in a manner consistent with their belief that the private sector is better positioned than the government to make private investment decisions.

Taiwanese policymakers studied the Silicon Valley policy environment in the early 1980s, and then deployed completely different tools to constitute their local VC cluster. Tellingly, Taiwanese policymakers publicly stated that they were guided by a mantra that each country “has its own model and approach to development, which are intimately related to its cultural, historical, and socio-economical background” (GIO, 1983: 159). With this as background, Taiwan’s senior policymakers, most notably “father of Taiwan’s economic miracle” K.T. Li, took a trip to Silicon Valley, Boston’s Route 128 and Japan in 1981 to learn about VC (Klingler-Vidra, 2014; Kenney *et al*, 2002).

Taiwanese policymakers’ VC study trip exemplifies the template search behaviours of policymakers in their context-driven learning process. While Taiwanese policymakers

believed that “Silicon Valley is a good example...in Taiwan, we don’t have liquidity of human capital talent like in Silicon Valley, so we have to also learn from Japan, Korea or Germany” (Author Interview, Taipei, 6 January 2012). Taiwan’s VC policymakers then visited and investigated Japan’s VC policy environment. In Japan, Taiwanese VC policymakers learned how to appease the risk-averse nature of local investors by using a corporate structure different from the LP structure (Author Interview, Taipei, 5 January 2012). However, Taiwan’s policymakers created their own “paper company” structure to be less restrictive than Japan’s unlimited liability structure (Klingler-Vidra, 2014a). In this way, though Taiwanese policymakers learned from Japan, they did not merely copy the Japanese legal structure. Instead, following the 1981 VC study trip, Taiwanese policymakers deployed regulations that adapted the lessons learned from their studying efforts of both the Silicon Valley and Japan templates.

In light of the acknowledgement of the substantial differences between Silicon Valley and Taiwan and the alternative offered by the Japanese template, Taiwanese policymakers:

learned about the LP structure from the U.S., but they changed the roles and responsibilities of LPs and GPs since Chinese people like to be involved in investment decisions. Chinese don’t like to give their money and then not have the chance to decide about how the money is spent (Author Interview, Taipei, 5 January 2012).

Thus, Taiwan’s paper company structure was designed to require that investors approve investment decisions, in contrast to the LP structure which endows the VC manager with that authority (Klingler-Vidra, 2014a). Taiwan’s paper company was motivated by policymakers’

bias towards accommodating local investors' preferences, as well as an acknowledgement of the differences between the Taiwanese and American legal context (Klingler-Vidra, 2014a: 149-151). Taiwan's tax credits were restricted to local, corporate VC investors as a similar expression of policymakers' preference for pleasing local investors (Wang, 1995: 2).

Taiwan's 1983 Regulations for the Administration of Venture Capital Enterprises gave first-time VC investors a 20% tax deduction for investments in local start-up companies for (TVCA, 2006). Taiwanese policymakers' embrace of tax incentives stems from their preference for "limiting the use of selective credit," which was established during the Martial Law era as a means of reducing the private sector's power vis-à-vis the Kuomintang government (e.g. by keeping companies small, they could not create a rival power)(Wade, 1990: 296). Their bias towards tax credits rather than direct private sector funding (e.g. loans, grants or equity investments) was firmly entrenched by the time Silicon Valley VC was studied in the early 1980s. As a result, Taiwanese VC policymakers did not "want to take risks so felt that it's best to be consistent" with strategies proven locally, rather than try to replicate the Silicon Valley environment (Author Interview, Taipei, 5 January 2012).^{viii}

Singapore's adaptation of the Silicon Valley VC policy model is once again different from Hong Kong and Taiwan's VC policies; Singapore's adaptation is more interventionist and internationally-focused. Singaporean policymakers adopted the LP structure, but outside of replicating this core element of the Silicon Valley VC policy template, Singaporean policymakers very deliberately chose to be more interventionist in their support of a local VC industry. Singapore's Technopreneurship-21 policymakers invested significantly into learning about VC policy models; they even sent a senior policymaker to live in Silicon

Valley for two years (1996-1997). Singapore's VC policymaker who lived in Silicon Valley for two years said the following about his learning of the neoliberal model:

when speaking with members of the Silicon Valley community they repeatedly say that they want the government out, and that Silicon Valley is a product of private effort, not government help. But, Singapore is different...I knew that Singapore had to use different, more specific techniques (Author Interview, Singapore, 12 September 2012).

In this way, Singapore's key VC policymakers studied the Silicon Valley model all the while considering how they would need to "adapt the policies to recreate the same set of circumstances in Singapore" (Author Interview, Singapore, 12 September 2012).

Following their diligent Silicon Valley VC study efforts, Singaporean policymakers sought further VC policy information, particularly templates that better fit with their interventionist and private sector financing biases. They turned to studying the successful Israeli fund of VC fund model, *Yozma* (Hebrew for initiative)(see Avnimelech and Teubal, 2008 for details on *Yozma*). A Singaporean VC fund (Vertex) was included in the Israeli *Yozma Fund's* first iteration (in 1996), which provided inroads for Singapore's VC policymakers to study the structure and operations of a government sponsored and managed fund aimed at jumpstarting a local VC market (Author Interview, Singapore, 20 September 2012).

After diligent studying of the more ideologically proximate Israeli VC policy innovation, in 1999 Singapore deployed the USD 1 billion Technopreneurship Investment Fund (TIF). The TIF was a fund-of-VC-fund in which the Singaporean state invested in VC managers (in

exchange for) their operating in Singapore. Unlike the USD 100 million Israeli *Yozma* fund that invested in indigenous VC managers, Singapore's TIF allocated 75% of its capital to blue chip international VC managers to entice them to come to Singapore (Klingler-Vidra, 2014a: 47-48). The Singaporean VC funding policymaker tasked with creating the TIF purposively adapted the Israeli model so that it "attracted world class VC managers to Singapore" instead of supporting local VC managers as Israel's fund had done (Author Interview, Singapore, 12 September 2012).

Hungry to implement other means of enticing foreign VC investors to Singapore, VC policymakers improvised additional VC policy incentives beyond what they learned in their studies of Silicon Valley and Israel. They launched tax exemption schemes for up to 10 years (with a potential exemption for another five years) as well as a tax credit for investors' losses in start-up investments (Klingler-Vidra, 2014a: 161). Eager to find yet another way to attract international investors to Singapore's VC industry, Singapore's Economic Development Board offered the Global Investor Program (GIP) whereby foreign investors can obtain Singaporean permanent residency by investing over SGD2.5 million in approved Singaporean VC funds (EDB, 2012).

Table 2 summarizes each East Asian state's VC policy alongside a summary of the Silicon Valley VC policy model for comparison sake. The table illustrates how even the core elements of the Silicon Valley VC policy model often did not translate.

Table 2: The Silicon Valley VC policy model and its East Asian adaptations

VC Policy	Silicon Valley	Hong Kong	Taiwan	Singapore
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Funding	---	ARF II gave VC managers USD 100 million AuM to manage in 1998	--- ^{ix}	TIF in 1999 with USD 1 billion AuM
Tax	Capital gains tax treatment	VC-specific tax exemption in 2005	20% tax credit	VC-specific tax exemptions and tax credit for start-up investment losses
Legal Structure	LP structure	LP structure	Paper company	LP structure
Other	---	---	---	GIP offers Permanent Residency to foreign VC investors (above a certain threshold)

Only one of the Silicon Valley core elements (the LP structure) was transmitted in two of the three cases. The other components of the Silicon Valley model – the ERISA reinterpretation and capital gains tax treatment – were not transmitted into local policy action. Instead, VC profits were taxed at corporate tax rates in Taiwan, and different tax credits and exemptions replaced low capital gains tax rates in all three cases. Regulatory changes that enabled significant local institutional investors to invest in the VC asset class – a “core element” of the model – were not enacted in any case. The table also highlights that policymakers in each locale created their own, differing means of supporting VC market development.

The Impact of Norms in Adapting the Silicon Valley Model

I argue that these unique VC policy creations differ from even the core elements of the Silicon Valley “anchor” and from each other primarily due to unique contextual rationality of each state’s policymakers. East Asian policymakers systematically studied the

Silicon Valley VC policy model. Remember that one policymaker even went so far as to *live in Silicon Valley for two years* to ensure he understood the environment. Once they had comprehensive understandings of the core elements of the neoliberal model, the East Asian policymakers then initiated searches for more proximate templates, in light of their normative biases. Policymakers' interventionist orientations were found to have a large impact on determining policymakers' further studying efforts. This was most evident in the Singaporean case, when, after studying the Silicon Valley model, norms led VC policymakers to conclude that merely offering the Silicon Valley LP structure and a generally attractive tax environment would not suffice. As a result, Singaporean policymakers sought out information on successful public funding efforts to build VC markets. This led them to the Israeli funding model, in which the state funded a cohort of private VC managers. Taiwanese policymakers, led by their interventionist orientation that favored the use of tax credits, chose to deploy a 20% tax credit for VC investors as they knew this was a "tried and true policy tool", rather than replicating Silicon Valley's capital gains tax treatment. Guided by their neoliberal framework, Hong Kong's policymakers initially focused on their enabling a regulatory environment in a manner consistent with the Silicon Valley model. But, Hong Kong policymakers' once iron-clad neoliberal stance relaxed by the 1990s, which paved the way for its policymakers to pursue sector-specific tax exemptions and government VC funds.

Private sector financing norms shaped how policymakers deployed funding as a means of prompting local VC activity. In Hong Kong, government funding for private sector firms was not in policymakers' lexicon until the 1990s, and even then, was not deployed in a way that policymakers chose winners.^x In line with their private sector financing norms, Hong Kong policymakers hired four private VC managers to invest government money on their behalf, rather than public officials deciding where to invest the money. In contrast,

finance-centric Singaporean policymakers methodically sought out information on the Israeli Yozma fund. Rather than duplicating the size of the Israeli fund-of-VC-fund, Singaporean policymakers again comprehensively evaluated the Israeli fund in light of their context-specific rationality, and as a result, adapted the fund to be larger (USD 1 billion instead of USD 100 million).

Policymakers' local versus international firm preferences primarily affected VC regulations, but also impacted the terms of tax, funding and non-financial incentives. As an illustration, Hong Kong's entrepot preferences motivated its policymakers to ensure an internationally consistent regulatory environment, particularly the availability of the Silicon Valley-consistent LP structure for its VC managers. In Taiwan, policymakers' focus on local investors' preference motivated them to study Japan's VC-relevant legal environment, which resulted in them offering a heterodox paper company structure. While the structure differs from Japan's, it is similar in how it endows local investors with more control over investment decisions than the Silicon Valley LP structure affords. Locally focused Taiwanese policymakers also restricted their tax credits for local use only. Singaporean policymakers' bias towards attracting international capital and international VC talent had a significant impact on each element of their VC policy. Policymakers' strong bias for soliciting international firms, rather than investing in local firms, propelled Singaporean policymakers to structure their Israel-inspired fund-of-VC-fund (the TIF) such that it allocated 75% of its funding to international VC managers who set up operations in Singapore. In addition, Singapore created a non-financial incentive (the GIP) to attract international investors for their VC managers. The only element of the Silicon Valley model adopted intact in Singapore, the LP structure which was adopted in 2002, which was also a product of this bias towards soliciting international participation.

The below table summarizes what has been discussed in the preceding paragraphs about the primary impact of the policymakers' norms.

Table 3: Impact of policymakers' norms on adaption

	Hong Kong	Taiwan	Singapore
1) Interventionist Orientation	Focus on regulatory tools / LP structure	Use of a tax credit	Studying and adapting Israel's funding tool
2) Private Sector Financing	Outsource investment to private VC managers	Focus on tax rather than funding	Invest large funds in VC managers
3) Local versus International Firm	Internationally friendly tax and LP structure	Heterodox legal structure rather than LP structure	Incentives aim to attract international investors

Each state's interventionist orientations framed whether the core Silicon Valley VC policy tools were utilized (e.g. the LP structure), further template search processes (e.g. Singapore's studying of Israel's Yozma fund) as well as how these tools were adapted (e.g. Taiwan's modification of the generally enabling tax treatment into a sector-specific tax credit). In this way, the interventionist orientation drove the general shape of adaptation, and subsequent studying of other policy models (e.g. Singapore's studying of the Israeli template).

The private sector financing norms then shaped the direction of adaptations of the Silicon Valley model. Specifically, private sector financing norms in favor of allocating large sums of money to the private sector facilitated Singapore's adaptation of its Silicon Valley

replication efforts to include investing large sums of public money in select VC managers. In this way, this norm, along with interventionist orientations, informed the adaptation of the Silicon Valley VC policy template in light of the use of public funding for the VC industry. It did not, however, affect whether or not the LP structure or a different legal structure was deployed. What's more, the normative stances on the use of funding to promote VC activity were also found to reverberate with the distribution of budgetary power to VC policymaking organizations (mentioned briefly here in the Hong Kong case, this finding is further explored in Klingler-Vidra, 2014a).

The international or local firm preference had a very strong impact on the extent to which VC policies strive to attract foreign capital, specifically whether the Silicon Valley-consistent LP structure was adopted and where government VC money is allocated. The findings of the three case studies proved to be binary in this regard, as in locally biased environments (Taiwan), the LP structure was not utilized, and in internationally biased contexts (Hong Kong and Singapore), the LP structure was deployed. The more insular Taiwanese policymakers ensured local fit by designing a legal structure aligned with local investors' preferences ("paper company" control over investment decisions) and local investors' interests (tax credits for local investors). The decision about using funding to support the VC industry does not seem to have been affected by domestic or foreign firm preferences. However, international versus local firm preferences did impact the direction of VC funds. In the entrepot states of Hong Kong and Singapore, policymakers' preferences for international manifested into differently structured funds that both allocated to blue chip, foreign VC managers.

Based upon the confluence of these three norms in each case, despite each state's

policymakers studying the Silicon Valley VC policy model, they each came to different conclusions about how best to grow their own Silicon Valley-like VC cluster. Context-specific norms about the interventionist orientation of the state acted as the primary determinant of the broad policy choice set and the subsequent template search process. Then the private sector financing norm propelled the use of direct public funding, the outsourcing of government money to private management and conceding state revenue (via tax credits). International or local firm preferences determined where any funding was directed towards, or limited to, and also propelled the use or rejection of the LP structure. Bias-driven learning led policymakers to study different policy templates following their studying of Silicon Valley. This variance in subsequent search behavior contributed to each state's unique adaptation of the source Silicon Valley VC policy model.

Conclusion

My primary finding is that contextually rational policymakers, even when systematically studying the same highly successful model, come to unique conclusions about *how* to reach the same *outcome*. In this case, East Asian policymakers came to believe that different paths would lead each of them to build their local Silicon Valley-like VC cluster. I have conceptualized how and why policymakers' biases frame how, and how much, successful "anchors" such as the Silicon Valley VC model are adapted. My contextual rationality conceptualization helps explain an empirically pervasive phenomenon that diffusion research struggles to grasp: the spread of similar but different policies.

My primary point of departure has been with the bounded rationality literature's presumption that internationally diffused policy models are expected to maintain at least the

core elements of the studied policy due to adopters' reluctance to deviate from the anchor. I have argued how and why core elements may be rejected and additional elements added to local policy concoctions in the name of producing a local version of the model. By understanding policymakers as "contextually rational" rather than boundedly rational, we as IPE scholars are not anchored to expect policymakers to replicate the core of a model. Instead, we have theoretical tools for examining how contextually rational policymakers process information – all the while considering how they can learn more in order to translate the model into local policy. Contextual rationality therefore shapes what policymakers study (including additional policy templates) and how they translate it into local policy. In the VC policy area, the norms that most informed policymakers' translation of the Silicon Valley model were their interventionist orientations, preferred means of funding private sector activity and biases for supporting international or local firms. In other empirical areas, it may be these norms that determine local policy adaptations, but it may be other norms altogether.

Policymakers' context-specific rationality underpins why even in what should be a case of convergence – the spread of the highly successful and much studied Silicon Valley VC model – we have not seen universal convergence, or even convergence amongst peers. Since policymakers' norms shape how the model is translated into local policy action, the takeaway is that we can, and should, expect varying adaptations within clusters, and across broad adopting populations, as a result of diffusion.

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ⁱ VC is defined here as financial capital provided to new, high-growth companies with significant potential in exchange for company equity (e.g. an ownership stake in the company). VC is high-risk and illiquid, with VC managers investing in the hopes that start-ups exit via an initial public offering or acquisition.

ⁱⁱ The term “silicon” is used to describe the California region centered around Stanford University because of the density of silicon chip (a personal computer component) manufacturers in the area. By the late 1970s the successful technology firms, start-ups and investors based in Silicon Valley propelled the “silicon” region’s international notoriety.

ⁱⁱⁱ Lazonick (2009) and Mazzucato (2013) are some of the most vocal critics of the notion that VC drives innovation, economic growth and innovation. They, instead, argue that the state has been the real risk-taker and investor in transformative technologies.

^{iv} The ‘public venture capital policy menu’ includes the establishment of an early-stage, high-technology company friendly stock exchange (Klingler-Vidra, 2014c). While the important role that the establishment of NASDAQ in 1971 had on the performance of the American VC industry (by providing them with a fertile group for exits) is argued by Lazonick (2009), here the stock market policy is conceptualized as part of the enabling venture environment rather than VC industry-specific policy.

^v The 45 state sample includes: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Saudi Arabia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan (Chinese Taipei), Turkey, United Kingdom and United States.

^{vi} The U.S. Small Business Innovation Research (SBIR) program provided direct investment in start-ups, not in VC managers as a means of supplying capital to the VC industry.

^{vii} Similarity and difference in terms of VC legal structures may also be the product of formal institutions, particularly the local legal system’s proximity to the American legal system (see Klingler-Vidra, 2014a).

^{viii} Taiwan’s effective tax credit policy was discontinued the first time the opposition party came to power in 2000 (Author Interview, Taipei, 6 January 2012).

^{ix} Taiwan’s National Development Fund makes co-investments alongside VC managers but does not invest in VC managers.

^x The intense scrutiny and power of the Legislative Council over budget reinforces Hong Kong’s historical (particularly Colonial government) reluctance towards financing private sector activity (Klingler-Vidra, 2014a).