Foreign Direct Investment Incentive Strategy in a Limited Resource Setting

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Abstract

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This paper explores incentive strategies that regions use to attract foreign direct investment (FDI) amid resource constraints and competition. It analyzes how regions can effectively allocate limited resources to enhance FDI incentives, focusing on financial aspects such as tax rates, corruption, and the overall investment climate.

Using theoretical scenarios, the paper identifies successful strategies for incentivizing FDI, taking into account priority sectors, proximity to competing regions, and level of information available. The findings reveal that distant regions should always act based on their true preference while regions within commutable distance should strategize based on the other region's interest, incentive package, and level of information available.

Furthermore, the study emphasizes the importance of managing limited resources and aligning incentives with regional strengths. It also discusses reasons why regions may opt not to incentivize certain projects despite their interest when full information is available and regions are within commutable distance. This research contributes valuable insights on optimizing resource allocation for attracting FDI and suggests areas for future investigation regarding the long-term impacts of various incentive types on regional development.

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1 Introduction

Foreign entities seeking global expansion often undergo a rigorous site selection process to identify the most suitable location for their business. This process typically involves initially considering numerous regions, which are gradually narrowed down to a handful of options. Once the final contestant regions are identified, the foreign entity engages with each region individually and enters into negotiations regarding incentives. During this stage, the company already possesses information about the available real estate, workforce, housing, utilities, and other factors in each region. However, the missing piece of the puzzle is the extent to which a region is willing to offer incentives to present a compelling case for the foreign entity to choose it as the expansion site. The incentive package offered by a region may include various components such as providing serviced land, upgrading utility networks (water, wastewater, power), upskilling the local talent pool, and offering financial incentives.

Different regions have varying abilities to offer incentives, even within the same country. Factors like land availability, play a key role in investment attraction. Allocating land for FDI projects—such as those in Special Economic Zones —gets complicated when multiple ownership claims are tied to the property, leading to holdout problems. Cases like Kelo v. City of New London and the Singur Tata Nano controversy highlight the contentious nature of land acquisition for economic development. These social and financial challenges add to the FDI attraction cost, hence increasing the expected payoffs from these investments.

Theoretical frameworks from scholars like Roy Chowdhury and Sengupta (2012) and Kominers and Weyl (2011, 2012) provide insights into the dynamics of these holdout problems and the challenges of acquiring complementary assets for development projects. These frameworks emphasize the importance of transparency, market design, and complementarity in addressing land acquisition complexities. Policy implications are significant, as seen in critiques and proposals by Ghatak and Ghosh (2011) regarding India's land acquisition bill. Their research, along with empirical studies like Ghatak et al.'s (2013) analysis of the Singur case, stress the need for well-designed policies that balance development goals with fair compensation for landowners while addressing holdout issues.

Given that regions operate with limited resources and are constrained by factors such as available serviced land, trained workforce, utilities, housing, and budgets, it is crucial to allocate resources efficiently to maximize the utility generated from foreign direct investment (FDI). Regions face the challenge of balancing their support for FDI that aligns with their vision, ecosystem, and values, with projects that solely generate profits for the community in terms of job creation and tax revenue. Additionally, regions must consider how much funding is allocated to incentivise FDI projects to secure winning the investment, or invest in developing local infrastructure and re-

sources, which creates a favourable investment climate and makes the region more attractive for future investors. For example, the province of Ontario is supporting Honda's electric vehicle (EV) investment with direct and indirect incentives worth $2.5 billion, while only investing $1.8 billion to build more homes.

According to Kokkinou (2004), regions that develop a robust local supply of human capital, modern infrastructure, and other fundamentals for economic growth not only become more attractive to multinational firms but also increase the likelihood of their private sector benefiting from foreign participation through spillover effects. Previous studies have explored the significance of incentive packages in the FDI attraction process. For instance, Morisset (2000) conducted a comprehensive analysis of the role of financial incentives in attracting FDI. Their findings suggest that while financial incentives are crucial, regions must also consider the overall investment climate, infrastructure, and market potential to create a favourable business environment. Furthermore, Buettner (2007), a study of several thousand German multinationals in 18 foreign countries during a period of 8 consecutive years, finds that an increase in the statutory tax rate by 10 percentage points reduces the chances of landing an investment in a region by 25 percent. This paper builds on the findings of the mentioned studies to estimate payoffs in the strategic games that follow. The relevance of these cited papers is to confirm that incentive packages play a role in the decision-making process for companies when deciding on an expansion site. Moreover, these papers also highlight the effect of incentives and FDI in general on the local economy.

When companies shortlist regions for their expansion projects, they usually start discussing incentives at that time and request some sort of confirmation about the support package offered. Regions are aware of the importance of a strong package of incentives and hence incentives are extended to companies to increase the odds of being selected as an expansion site. Incentive packages take the form of local policies, free training programs, discounted land prices, subsidized rent, waiving of development charges, subsidized utility rates and of course tax credits and grants which in some cases are to the tune of billions of dollars, such as Elon Musk's growing empire which is fuelled by $4.9 billion in government subsidies.

When designing incentive packages, regions carefully examine the return on investment and costs associated with a project landing within their boundaries. The return on investment encompasses factors such as land valuation, potential integration with local companies, future expansion prospects, talent retention and development, and financial returns in terms of real estate revenue, taxes, and employee disposable income. On the other hand, costs include both direct and indirect costs. Direct costs are related to financial incentives, while indirect costs pertain to lost opportunities and the risks associated with having vacant land, which can impact the overall economy and the region's perception among local industries and external markets.

Quantifying non-fiscal costs and benefits can be a challenging task, and regions often resort

to using indicators such as changes in GDP as a quick fix. While the GDP growth rate is widely considered a key indicator of economic growth, it has certain limitations that need to be taken into account. GDP solely measures economic output and does not consider other aspects of a nation's development or the well-being of its citizens. For instance, a nation may experience rapid GDP growth but at the expense of significant environmental impacts or an increase in income inequality. In order to comprehensively assess the extent of development and whether it is depleting or enhancing community capital, which includes natural, social, human, and built capital, it is necessary to adopt measures that go beyond GDP, as suggested by Costanza (2009). Expanding the analysis beyond GDP can provide a more holistic understanding of the consequences of FDI on a region's overall well-being and sustainable development.

While incentive packages typically include real estate options, workforce access, utilities, housing, and financial incentives, financial incentives have become a key focus due to their quantifiability. However, regions face constraints in offering financial incentives based on their available assets and opportunity costs. Studies also suggest that while financial incentives are important, regions must also cultivate a favorable business environment through infrastructure, market potential, and supportive regulations.

This paper studies how regions can effectively maximize the return on investment (ROI) when incentivising FDI despite limited resources and competition from other areas. It analyzes the strategic allocation of resources to enhance the effectiveness of FDI incentives, focusing on the role of financial incentives. Through game theoretical modeling, the paper identifies successful strategies for incentivizing FDI while considering regional priority sectors and proximity to competing regions. Findings suggest that regions with competitive incentive packages are more likely to attract FDI in a healthy investment climate, but careful resource management and alignment of incentives with regional strengths are essential. The study also explains why some regions may opt not to incentivize projects of interest and lays the groundwork for future research on the long-term impacts of various incentive types on regional development.

When reviewing literature regarding incentivizing FDI, most papers focus on surveys conducted on the importance of financial incentives on the site selection process, from the investing company's point of view. While it is evident that factors such as availability of talent, political stability, and infrastructure trump financial incentives when a company is selecting an expansion site, the tax income effect on the host region has been overlooked, especially when regions are similar due to being in the same country, and even more so when they are within commutable distance. This paper addresses FDI incentivizing from a region's point of view and the consequences of supporting or forgoing a foreign expansion project. Analysis from this point of view, combined with a game theoretical approach, is lacking in the literature. This paper is a first attempt to fill this gap.

2 A strategic game of attracting FDI through incentive packages

This paper models a strategic situation through a game involving two decision-makers (players) whose choices interact to determine outcomes. Specifically, the two players are regions and their strategies concern providing financial incentives for FDI. The aim of this paper is to find the Nash equilibrium that occurs when regions A and B in a game have chosen their optimal strategy, given the strategy choice of the other region, and no region can benefit by unilaterally changing their strategy. The scenarios highlight the dominant strategy for each region; the strategy that provides the highest payoff or best outcome, regardless of what strategies the other region chooses.

2.1 Participants

There are three different types of decision-makers in our game: regions, labour, and a representative foreign investing company. However, only the regions are considered players, that is, strategic agents whose decisions are made strategically and affect the welfare of the other decision-makers. The model assumes that companies are rational and will invest in regions that offer the highest incentive package. This is a realistic assumption as the company has already shortlisted regions through the site selection process before arriving at the strategic situation being modeled in this paper. The model also assumes that labour households remain in the region they are in regardless of where the investment lands, hence the different scenarios of commuting to work or not. Each region votes on the level of support to be offered to companies across the spectrum of preferred sectors. In this paper any support is assumed to be the maximum as we are considering companies to be either in sectors of interest or not. Regions have strategic priorities and resources, hence the incentive package varies from one region to the other. Labour supply and mobility are also at play in our game. A company's decision to expand in the region or not based on the incentive package offered has long term effects on labour in this region. If a company expands in a region it is likely that labour will flow into it to fill the newly created jobs. Labour will also transfer to and from the existing companies in the region which will have an effect on the average wages in the region and overall housing market. Foreign companies react to incentive packages extended from regions. Better incentive packages yield higher return on the investment (ROI), and firms are mandated to maximize their returns by reducing costs.

2.2 Environment: Full versus Partial Information

There are two environments explored in this paper, full information and partial information. The full information setting occurs when regions are aware of their competition's priorities and incentives

and can easily predict what will be offered by other regions. The partial information setting is when regions are not aware of their competition's priorities and available resources for incentive packages. In both settings the actions available to each region is to either support or forego the project at every time point. Regions indicate to companies the support programs available and what might be offered in a binding offer. While companies at this stage of expansion are realistically looking at 2-4 sites, for simplification we will study the interaction between two regions being considered as potential sites by a foreign investing company.

2.3 Timing of actions

In both settings the timing of the game can be summarized below:

1. Nature assigns sector priorities and available resources to each region.
2. Each region openly indicates to the foreign investment company the incentive package.
3. The foreign investment company reviews the incentive packages submitted by all regions and takes a decision on site selection.
4. Payoffs are realized.

2.4 Effect of distance between regions

Regions may be within a commutable distance allowing the losing region to benefit from higher Gross National Product GNP (employees living in the unselected region but working in the selected region contributes through their disposable income which is usually spent where they live). We consider two different cases: commutable and distant regions.

2.5 Considerations when offering an incentive package

- If both regions support the expansion, the company will choose the region with the better incentive package
- If both regions offer the same incentive package, the company will do a lottery, as a way of choosing a region
- The region chosen benefits from land sale/lease revenue and tax revenue as well as higher GDP
- The unchosen region that presented an incentive package derives utility from a good relation with the company

2.6 Solving the game

2.6.1 Full information

Commutable regions When operating under a full information scenario, regions are well aware of each other's priority sectors and resources. In such a case there is no risk of untruthful signaling and the game could be expressed in a strategic form. Note that for region A, the FDI sector is always of interest except for scenario (c). We also assume that region A has the highest level of support or is the one chosen through the lottery in case both levels of support were equal (i.e., chosen as an expansion site when both regions decide to support), we assume both regions are offering their maximum level of support and are within a commutable distance from each other. The three scenarios in this game are:

Scenario (a) FDI is a sector of interest to both regions, both regions offer incentives and region A is selected by the company

Scenario (b) FDI is a sector of interest to region A only

Scenario (c) FDI is not a sector of interest to either region

Scenario (a)

		Region B	
		Support	Forego
Region A	Support	(100,60)	(100,50)
	Forego	(50,100)	(0,0)

Scenario (b)

		Region B	
		Support	Forego
Region A	Support	(100,20)	(100,10)
	Forego	(30,-10)	(0,0)

Scenario (c)

		Region B	
		Support	Forego
Region A	Support	(-20,20)	(-20,10)
	Forego	(20,-10)	(0,0)

In analyzing regional strategies for attracting investments, we conclude that when both regions are interested in securing a project scenario (a), their optimal strategy is to provide support, even

for the region that ultimately loses the bid. This conclusion is based on the payoff matrices, which demonstrate that the Nash equilibrium is achieved when both regions choose to support the project (Support, Support). Notably, even the losing region benefits from this strategy through increased labor mobility and enhanced attractiveness for future investments. Both regions possess a dominant strategy of support, irrespective of symmetry in support levels. The rationale behind this approach lies in the utility derived from demonstrating a welcoming attitude towards investments. Conversely, withholding support may result in a region being perceived as unwelcoming to FDI, potentially jeopardizing future opportunities. Quantitatively, supporting the project yields a higher payoff (60) compared to foregoing support (50), which only benefits from labor mobility without the prospect of future investments. This analysis underscores the importance of regional cooperation and strategic decision-making in the context of attracting and retaining valuable investment projects. It is also clear that both regions value the project equally hence the payoff of 100 for the winning region. The reason for lower payoff for region B in the (support, Support) strategy is that, region B knows that region A will land the investment since they are both operating under full information scenario, hence while the payoff to region B would have been 100 if it lands the project, it knows that the maximum payoff under this scenario is caped at 60 since A always wins the investment if it supports it. This is demonstrated in (Forego, Support) response where region B realizes the maximum payoff when region A is not chosen. For all scenarios when both regions forego support the payoff is zero, while there is an opportunity cost that if taken into consideration will drop the payoff to a negative number, yet this is not captured in these games as it will not affect the strategy, whether it is zero or negative.

In these games payoffs are ordinal, and having a negative payoff has no specific significance. Although payoffs are ordinal, they represent monetary payoffs (e.g. profits)The payoffs in scenarios (b) and (c) are interesting and worth exploring further. In scenario (b) region A benefits the most (100) from being selected (real estate income, taxes, etc.), yet region B, which is not interested in landing the project, still has a positive payoff (20) from its residents being employed at the new company and spending locally. As we can see, the Nash equilibrium is (Support, Support), and the best response strategy for region B is to support, knowing that region A has a dominant strategy to ”Support”. Although region B knows that it is losing the project to region A, it is still strategically offering an incentive package to express support which would allow it to generate a higher payoff (20 vs 10), mainly due to the goodwill generated. Region B still maintains its position as it welcomes investments and ready to support them. It also helps increase the chances of region A being shortlisted and selected as an expansion site, rather than losing the investment to a distant region that would not allow for labor to commute. From a company’s standpoint, it would value having 2 close regions supporting it than one, although in this case the “support” of region B is theoretical and not actual, as our game assumes that the losing region has no obligation to support

the investment.

The reason for the negative payoffs in scenario (c) is due to the fact the sector is not of interest to both regions and while tax and real estate revenue could be generated, the utility lost from giving away land to an undesirable sector outweighs the benefits. Yet if the project lands at a neighboring region, the region which "loses" the deal actually is better off (20), as it saves its resources such as land and utilities and still gets its residents employes and spend income locally. Scenario (c) follows the same rationale as scenario (b) in terms of where the project lands, yet in this case and due to the fact that neither region is interested in the sector, the Nash equilibrium is (Forego, Forego), i.e. the company will not be offered any support and will not choose either of the regions for its expansion. The same reasoning discussed in scenario (b) applies to region B having a lower payoff foregoing the investment if region A supports it (10 vs 20), region B will not be perceived by the company as a welcoming region and less engagement will result in less employment opportunities for its residence. Neither region will risk supporting the project knowing that the other region will not as this will only create a negative payoff. This scenario could be explained by the holdout dilemma discussed in the introduction where a company might acquire the land and never develop it, creating a negative payoff for the host region.

Distant regions In a scenario that assumes that regions are further apart from each other, this is a scenario in which there are no spillover effects among regions, (i.e labour can't commute from one region to the other). While it is realistic to assume that a region losing labour to another region will result in a negative payoff, we will not incorporate that in the payoffs for simplification, as each region is offering its maximum level of support. Loss of labour effect is worth considering when exploring the optimal level of support to be offered, i.e. regions will weigh the cost of losing labor versus the incentive package offered. Holding other assumptions unchanged, the payoff matrix changes as follows:

Scenario (e) FDI is a sector of interest to both regions

Scenario (f) FDI is a sector of interest to region B only

Scenario (g) FDI is not a sector of interest to either region

Scenario (e)

		Region B	
		Support	Forego
Region A	Support	(<u>100</u>,<u>10</u>)	(<u>100</u>,0)
	Forego	(0,<u>100</u>)	(0,0)

Scenario (f)

		Region B	
		Support	Forego
Region A	Support	(<u>100</u>,<u>10</u>)	(<u>100</u>,0)
	Forego	(0,-10)	(0,<u>0</u>)

Scenario (g)

		Region B	
		Support	Forego
Region A	Support	(-20,<u>10</u>)	(-20,<u>10</u>)
	Forego	(<u>10</u>,-20)	(<u>0</u>,<u>0</u>)

For scenarios (e), (f), and (g) we notice that, for the losing region, the payoff is the same whether it supports the foreign company or doesn't. What is interesting about distant regions is that both have a dominant strategy of acting upon their true preferences, as any deviation will only have a lower payoff. When comparing payoffs and deciding on strategies, a dominant strategy in scenario (e) for both regions is to support the investment. Both regions are competing, and losing the investment comes with a higher cost for the unselected region compared to that in the commutable regions scenario. Since there are no spillover effects no new employment opportunities, nor increased household spending benefits the unselected region. We notice in scenario (e) that both regions will support the investment. Since it is a full information environment region B knows that region A will be supporting the investment and will be the one selected, hence with no spillover effects Region B's payoffs are only generated from goodwill and a reputation of being supportive of investments hence the low payoff of (10).

In scenario (f), region A has a dominant strategy to support the investment, and any deviation will cause it to have payoff of zero. In contrast, region B has a weakly dominant strategy to forego the support. Region B has no benefit in supporting the investment, on the contrary it will risk supporting the project and winning it in case region A chooses to forego, as the payoff is (0,-10). Having said that region B might opt to support the project knowing that region A will win it to benefit from the positive reputation of being welcoming to investments which is translated in the payoff of 10 when (support, support) is choosen.

Similar to scenario (f), both regions in scenario (g) have a dominant strategy of foregoing the support, as it is not a sector of interest and will not be generating utility to the region. If any region supports the investment then it is risking a chance of landing the investment and generating a negative payoff of -20. the reason for the positive payoff of 10 for each region is due to the goodwill and reputation generated from supporting investments and showcasing your region as open for investments. However, this will never be the case as any region supporting the investment will end up landing it given they operate in a full information setting.

To summarize, if a foreign investment is of interest to a region, the region should always support it regardless of the distance between competing regions, i.e. it is a dominant strategy. The distinction happens when an investment is not of interest to a region and the regions are within a commuting distance which allows labor mobility. In this case the region should consider the interest of its neighbors: if the neighboring region will support the investment and win the project, both regions should support it, as it will have a positive payoff to the winning region and a lower positive payoff to the neighboring region regardless if the sector is of interst or no.

2.6.2 Partial information

Commutable regions In a partial information setting priority sectors and resources are private information for each region and are not known by the others. The partial information setting is more realistic and is closer to real-life examples. Regions might be aware of each other's priorities to some degree, given the marketing efforts, but to a lesser degree the resources available to each. Besides the resources mentioned earlier, an important aspect of a region's attractiveness is its political influence and ability to create resources such as properly zoning land and servicing it with power and utilities in a timely manner. Such resources are hidden from the competing region(s) and only come to light on a case by case basis. It could also be the case that a region is entertaining another project without the knowledge of the other region and doesn't have the resources to incentivize the project, signaling to the other region that this is not a sector of interest. Partial information is most likely just after an election in one region and more so when elections coincide at both regions, such as municipal elections. However, the elected officials still need to assign priority sectors, budgets, and incentive packages. If a region is approached by a potential investment during this transition time, it is a challenging task to decide on how much to incentivize a project.

		Scenario (h)			
		0.6		0.4	
		Region B		Region B	
		Sector of Interest		Not a Sector of Interest	
		Support	Forego	Support	Forego
Region A	Support	(100,<u>60</u>)	(100,50)	(100,<u>20</u>)	(100,10)
Sector of Interest	Forego	(50,<u>100</u>)	(0,0)	(30,-10)	(0,<u>0</u>)

The payoffs in scenario (h) is interesting and worth exploring further. In scenario (h) region A is interested in winning the project yet has no idea if the project's sector is of interest to region B nor does region A know region B's incentive package. Hence region A should put forward its best incentive package to increase its chances of winning the project. This scenario can be analyzed as a Bayesian game. We assume that the probability of the project being of interest to region B is 60%, hence region's A expected payoff from foregoing when region B is supporting the project

is 0.6(50)+0.4(30)= 42. On the other hand, Region's A payoff when region B is foregoing the project is 0.6(0)+0.4(0)= 0. Comparing payoffs Region A is always better off supporting the project and offering its best incentive package, since region A has a dominant strategy to support (100 payoff, whether B supports or Foregoes), A always chooses support. Region B has no incomplete information and the "interest" and "no interest" types choose based on their payoffs. For scenario (h) the unique Bayesian Nash Equilibrium is (S,(S,S)).

The challenge with partial information is that regions are not able to gauge the optimal incentive package value and their only option is to offer their maximum incentive package assuming hat the competing region is also offering its best incentive package. This situation significantly reduces the return on investment (ROI) and puts FDI at an advantage over regions. For region B it is always best to support the project if the sector is of interest and forego if not, following the same rationale explained for region A. The situation is displayed in scenario (x) where Region A is not interested in the project's sector and the best strategy is to forego supporting it as the expected payoff of foregoing it is higher than supporting it: region A's expected payoff when region B is supporting the project is 0.6(10)+0.4(10)= 10. On the other hand, Region's A payoff for region B foregoing the project is 0.6(0)+0.4(0)= 0. Since region A has a dominant strategy to forego (non-negative payoff, whether B supports or foregoes), A always chooses to forego. Region B has no incomplete information and the "interest" and "no interest" types choose based on their payoffs. For scenario (x) the unique Bayesian Nash Equilibrium is (F,(S,F)).

Scenario (x)

		0.6 Region B Sector of Interest		0.4 Region B Not a Sector of Interest	
		Support	Forego	Support	Forego
Region A	Support	(-10,<u>60</u>)	(-20,50)	(-20,-20)	(-20, <u>-10</u>)
Not a Sector of Interest	Forego	(10,<u>100</u>)	(0,0)	(10,-20)	(0,<u>0</u>)

Distant regions For distant regions in partial information setting, similar to complete information each region has a pure strategy of acting upon their true preferences, as any deviation will only result in a lower payoff since distant regions cannot benefit from FDI in the other region.

To summarize, in a partial information setting regions should always act upon their true preferences, namely, to incentivise projects of interest and forego those who are not of interest. The only exception would be for a commutable region that expects its neighbouring region to incentivize a project. This is explained in scenario (h) where region A assesses region B's probability of incentivising the project and adjusts its strategies and level of incentive package based on probabilities.

2.7 Conclusion

In this section we explored different FDI attraction scenarios based on the interests of each region, level of information about the other region, and distance between regions. Our analysis proposes that regions should generally act upon their true preferences when incentivizing projects, unless specific circumstances dictate otherwise. This approach ensures that regions focus on attracting investments that align with their economic goals and existing strengths, thereby maximizing their potential payoffs. The only scenario where deviating from true preferences might be beneficial is when regions are within commutable distance of each other and have full information about their neighbor's preferences. In such cases, strategic cooperation or showing support as a positive gesture might yield mutual benefits. However, when information about neighboring regions' preferences is limited or unavailable, adhering to one's true preferences becomes crucial to avoid the risk of attracting unwanted projects that could potentially reduce the region's overall payoff. This strategy of selective incentivization based on true preferences, coupled with informed decision-making and inter-regional cooperation when appropriate, allows regions to optimize their FDI attraction efforts and ensure that the investments they secure genuinely contribute to their economic development objectives.

3 Real-Life Examples

There are several examples of governments incentivising investments that are not always viewed favourably by the population, yet these investments paid off. In 2008, Volkswagen secured an unprecedented subsidy package for its Chattanooga, Tennessee plant. The company received $577, marking the largest taxpayer-funded incentive ever given to a foreign automaker in the United States. In return, Volkswagen promised to create 2,000 jobs at the facility, resulting in a cost of $288,500 per job to the state. Despite concerns about the high price tag, Tennessee Senator Lamar Alexander defended the investment, viewing it as a crucial step towards establishing Tennessee as the leading automotive state in the country.

Another example is when New York state provided IBM in year 2000 with a substantial incentive package totaling $660 million in tax breaks, grants, and other benefits for its chip factory in Dutchess County. This deal was designed to create 1,400 construction jobs and 1,000 permanent staff positions at the facility. State officials projected that the investment would generate approximately $1 billion in revenue for New York over the following seven years. This strategic investment in the semiconductor industry laid the groundwork for New York's future as a hub for chip manufacturing. Following IBM's project New York state incentivised Advanced Micro Devices (AMD) in 2006 with a $1.2 billion package that created 1,205 jobs. In a significant development that fur-

ther solidifies New York's position in the semiconductor industry, Micron Technology announced in 2022 a monumental $100 billion investment to build a semiconductor fabrication plant in the state. This massive project represents one of the largest private investments in New York's history and is expected to create thousands of jobs while strengthening the state's semiconductor supply chain.

Other examples include Boston and San Diego growing the life sciences sector through investing in infrastructure to attract FDI. In 2023, the Boston area opened 3.5 million square feet of new lab space, with an additional 5 million square feet under construction as of early 2024. This expansion of lab space has been crucial in attracting foreign companies looking to establish a presence in the U.S. in San Diego the Torrey Pines Science Park and the Sorrento Valley biotech hub added 1.8 million square feet of new lab space in 2023. These clusters provide a ready-made ecosystem for foreign companies to plug into. Besides creating the necessary infrastructure both regions still incentivise FDI through tax breaks and grants.

4 Future Work

Future research can explore additional complexities that arise in scenarios where regions are geographically distant, making workforce commuting impractical. In such cases, the risk of workforce migration becomes a significant factor that influences investment payoffs and alters the strategies of involved players. By incorporating this factor into the analysis, researchers can gain deeper insights into the dynamics of investment attraction and the interplay between regions.

Another interesting avenue for future work lies in studying varying levels of support for each region and examining the potential for regions to extend their maximum support levels through loans or bonds. This analysis would shed light on the strategies regions employ to secure investments and mitigate the risks associated with losing potential opportunities.

Furthermore, it is worthwhile exploring the implications of a region's FDI strategy on its brand as explained by Lee (2021). Regions that are perceived to be FDI friendly through financial incentives will have a higher chance in not only attracting new investments but also driving migration and labor pools to their boundaries. This is well demonstrated when Costa Rica offered Intel a very lucrative incentive package consisting of full exemption from income tax for the first 8 years and 50 percent exemption for the following 4 years to build its facility in 1996. Costa Rica was chosen as a the expansion site and subsequently tripled its FDI stock in the 3 years that followed the announcement, as explained by Larrain (2000).

Future work may also focus on local companies within a region looking to expand and the dynamics associated with retaining them through incentives or foregoing the support in order to free up local resources such as land, utilities and workforce. This scenario is of particular importance

especially when regions are redefining their economic development strategies and key strategic sectors. Regions might prefer for a local company that no longer aligns with the new economic ecosystem or branding to exit their community by de-incentivizing their expansion.

5 Further Discussion

In an environment characterized by limited resources, including constraints such as land, infrastructure, workforce, and funding, regions are compelled to adopt a strategic approach when making decisions concerning investment support. The unique nature of each investment opportunity and the potential for a diverse range of returns necessitate a careful evaluation of all available options. In doing so, regions should thoroughly assess the long-term implications of both supporting and forgoing foreign investments. In light of these considerations, it becomes imperative to explore alternative avenues for investment, such as local infrastructure development and talent cultivation, which hold the promise of yielding similar, if not superior, returns in terms of FDI attraction when compared to supporting specific company projects.

In this resource-constrained environment, it is essential for regions to exercise prudence in their resource allocation, seeking a balance between encouraging FDI through incentive packages and fostering organic economic growth from within. While the allure of landing immediate investments may be enticing, regions often overlook the latent benefits of foregoing support for a current opportunity in favour of reserving resources for future endeavours. This is mainly due to the absence of an economic development roadmap, and the political environment. By taking a more nuanced perspective, regions can identify opportunities with broader, sustainable impacts on their economic landscape.

By embracing a more holistic approach to investment support, regions can unlock the true potential of their resources, leveraging them to not only attract FDI but also foster a sustainable and resilient economic ecosystem. Such a transformative perspective may require overcoming political and short-term pressures, and embrace instead a more collaborative approach among commutable regions, wherein resource pooling and strategic planning can lead to increased success in attracting investments. In this partnership model, regions can optimize their incentive packages, eliminate information asymmetry, and rotate investments among them, thereby maximizing returns on their resources collectively.

However, the implementation of such an idealized scenario faces real-world challenges, as competitive dynamics among regions and the short-term focus of elected officials may deter collaborative efforts. Recognizing that FDI attraction and economic development are a long-term endeavour, regions must expand beyond transient political considerations to strategize collectively and secure mutually beneficial outcomes.

It is essential to approach incentivizing foreign direct investment (FDI) with caution, considering the potential drawbacks and hidden costs associated with it. While FDI can provide a quick solution to low capital stock levels, its long-term effects should be carefully evaluated to ensure sustainable economic growth. The lure of attracting foreign companies with incentives and tax breaks may come at the expense of lost opportunities for local businesses to grow organically and the potential for investment in local infrastructure and talent. Furthermore the value of incentives should be accurately calculated to ensure that the region is optimizing its utility from FDI.

Scholarly research has consistently highlighted the need for regions to strike a delicate balance between incentivizing FDI and developing their economy from within organically. For instance, Slesman (2021) emphasizes the importance of supporting local businesses and fostering domestic entrepreneurship alongside FDI attraction efforts. They argue that regions should have sufficient institutional capacities to be able to beneficially translate FDI spillovers into higher rates of domestic entrepreneurship. Findings also suggest that when policymakers maintain a healthy mix of local and foreign investments, this will lead to a more resilient and sustainable economic growth, reducing the risks associated with over-reliance on FDI.

Moreover, studies have identified the hidden costs of FDI and the importance of considering the long-term implications.A study conducted by the UN in 2000 backed by the outcome of a survey of tax incentives from 45 countries finds that FDI can have a negative impact on local firms, as they may not be able to compete with the resources and advantages that foreign firms bring. Several studies such as Medve (2014), Zeng (2014), and Scott (2004) shed light on the potential negative impacts on local industries and the loss of opportunities for economic diversification that can accompany a heavy reliance on FDI. Policymakers should carefully evaluate the trade-offs and implement measures to mitigate the risks associated with FDI while ensuring the long-term growth and stability of the region. Capitalizing on neighboring regions' projects and resources has also been recognized as a viable strategy for maximizing returns and enhancing regional competitiveness. In a study on underlying forces affecting the relationship between a service centre (Shanghai) and manufacturing bases (cities in the region surrounding Shanghai), Zhang (2006) argues that to foster regional collaboration among cities, it is crucial to identify shared interests and persuade local leaders about the necessity and advantages of collaborations. External challenges beyond the region's control can facilitate progress in this stage. Once member cities achieve consensus and institutional agreement, the integration of production factors, such as market sharing, financing resources, information, and technology, become essential. The final stage involves establishing unified regional governance through collaborative planning. Commutable regions can pool their resources and present a unified incentive package to increase their chances of attracting investments. This collaborative approach eliminates partial information, enhances bargaining power, and creates a win-win situation for the participating regions. By combining their strengths, such as infrastruc-

ture, talent pool, and industry clusters, regions can create a more attractive value proposition for potential investors.

However, the reality of politics and competition among regions often hinders collaborative efforts. As highlighted by Wolman (1996) in his article that article summarizes and critiques the literature around the politics of local economic development, elected officials offering tax abatements perceive them as a rational response to FDI attraction, even though tax abatements may be fiscally costly and have a low probability of working. Elected officials, driven by their limited term in office, may prioritize short-term gains and public recognition, leading to a fragmented approach to FDI attraction. This poses a significant challenge to the suggested ideal scenario of collaborative FDI attraction.

Recognizing that FDI attraction is a long-term endeavour, it is crucial to approach the site selection process and incentive negotiations with a comprehensive and forward-looking perspective. As explained by Charlton (2003), competition among regions to attract FDI can have positive and negative effects locally and globally. Negative outcomes typically occur when governments offer attraction packages that are larger than the value of the benefits to the host economy, or when governments resort to inefficient incentive instruments.

In conclusion, while FDI offers potential benefits, it is vital for regions to strike a delicate balance between attracting foreign investment and nurturing their domestic economy. The research by Munongo (2017), Morisset (2000), Nielsen (2017), and Dupasquier (2006) provides valuable insights into the challenges and opportunities associated with FDI attraction. By considering the long-term consequences, collaborating with neighbouring regions, and addressing the challenges posed by short-term political dynamics, regions can pursue a more sustainable path of economic development.

6 Use of Generative AI and AI-assisted tools

During the preparation of my thesis, I used Perplexity.ai for LaTeX troubleshooting and market research. After using this tool/service, I reviewed and edited the content as needed and take full responsibility for the content of my thesis.

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