

Has the Chinese Government Set Themselves on a Path of an Inevitable Real Estate Crisis?

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Introduction

Abstract - The notion of China being a ‘sleeping dragon’ has historically been used as a whim for sarcasm, but recent years may have proved that this dragon awoke. Today, China has catapulted itself into being the 2nd largest economy in the world with a GDP of nearly \$14.7* trillion with a 30-year average YoY GDP growth of roughly 13.2% [23]. With this massive economic growth, many journalists, economists, and political theorists have now turned their research into focusing on the main economic catalyst: Chinese real estate. As one of these many researchers, I aim to dissect the Chinese real estate market to see if this economic driver of growth is a palpable stimulant for global economic dominance or has been artificially expanded to mask a weak, inefficient economy that will eventually burst. To answer this question, I aimed to collectively view the market from a variety of different sources to compile a ‘flow’ that starts with the history of the Chinese real estate market to then moving towards the current market setting in China, and then hypothesizing what a real estate crisis could result in for both the world and the Chinese Communist Party (CCP). My analysis concluded that there is currently a real estate bubble in China that was spurred on by the government’s ambitious plans to wield global economic influence combined with financial incentive from both Chinese households and businesses alike. The CCP has begun to rein in on this real estate boom as global economic catastrophe and internal political stability risk is likely to emerge if this bubble were to suddenly burst. Although Evergrande’s recent turmoil may signify that the crash is right around the corner, there is hope that the CCP will isolate, and eliminate this doomsday.

I. Motivation

There are two key motivations for writing this research essay. The first is the sheer magnitude of the Chinese real estate market. We will be discussing later how deeply entrenched real estate is to the Chinese economy, but the key takeaway is that there has never been a single industry with the potential to sway such a massive economy, as China is today, while also having the raw potency to demolish decades of carefully crafted CCP initiatives focused on economic prosperity. The second motivation is because of Evergrande's recent restructuring announcement in December 2021. Evergrande, being one of the largest real estate developers in the world, is not only a perfect example of showcasing how large, well-established companies can still fail but also that Evergrande's failures may serve as a first step towards a full-blown Chinese real estate crisis. With these two motivations in hand, I first began my research by examining already well-established articles and papers about the Chinese real estate market.

Literature Review

Existing research around the Chinese real estate market is already quite extensive, but I argue is a bit fragmented to assess if the market is a bubble. Existing literature revolving around the history, growth, and current state of the Chinese real estate market will be embedded throughout my research, but it is important to first understand what they focus on and how it fits into my research flow.

With China's real estate market being relatively young, researching its urbanization trends over time serves as a great foundation to comprehending the market today. In the latter half of the 19th century, China has had considerably political changes and initiatives to promote urbanization in a rapidly industrializing economy. Much has been written on these changes including Lai's *Housing Reforms at Fifty* (2000) where he breaks down how precisely the CCP initiated economic policy that made individuals gradually move from the rural Chinese landscape into more urban areas, prompting naturally high demand for real estate in these major cities [30].

Another key growth factor was also in the works of the *Danwei* housing system that Joyce Yanyun Man (2011) discusses in depth with its direct relationship to massive demand in the market for

real estate as both companies and individuals sought to reap massive profits [52]. In recent years, these real estate profits have gone up considerably with construction projects in every corner of China. These projects have encouraged a wave of international journalists to investigate the success of these projects and attempt to discover why and how they were built. The *New York Times*'s David Barboza (2010) and *Forbes*'s Wade Shepard (2016) have both covered this topic extensively from a macro-perspective where they discuss some simple statistics such as vacancy rates and what they also saw themselves when visiting [4][40]. These journalists, when paired with the research of economic journals such as *A Real Estate Boom with Chinese Characteristics* (2017), can provide a full holistic picture of the current real estate market in China – combining academic, economic research with real eyewitness testimony [18]. Now when it comes to understanding how exactly the real estate market has gotten to the point described by Shepard, Barboza, and Glaeser et al. in *A Real Estate Boom with Chinese Characteristics*, focus can then be turned to the findings of South China Morning Post as well as Michael Cole (2016). The arguably state-run newspaper, South China Morning Post has consistently been a vehicle for explaining and showing Beijing's current economic attitude towards real estate, such as their willingness to ease fiscal policy to encourage growth. The CCP's reason to do so, is best explain by Michael Cole who pieces this growth of the real estate market to a longer vision by China to become a global economic powerhouse, besting that of even the US [35].

Evaluating the risks of this ambitious vision by Beijing, research by Yifan Xie, Jeong, and Cherney (2021) as well as with Ball's (2020) Chinese security review, clearly lay out the magnitude of the risks that come with wild growth in Chinese real estate. Yifan Xie, Jeong, and Cherney take it from an economic perspective where they evaluate the world's reliance on China's massive industrialization to produce international goods. On top of the global economic catastrophe of a potential Chinese real estate crash, Ball's security assessment explains an overview of how financial peril may turn the CCP on its head when hundreds of billions of dollars in real estate would be loss because of a crash, likely weakening the CCP's grip on China [3].

With my own extensive research, I have taken inspiration, and even utilized a considerable amount of these works just mentioned, to research the Chinese real estate market with an infusion of very recent financial failures and its risk to both the world and the Chinese government – putting all the pieces together to ultimately address the feasibility and risk of a Chinese real estate bubble burst.

Analysis

I. History of Real Estate in China

A key understanding to learning about the Chinese real estate climate today must first start with a brief explanation on its history and how it came to be, specifically with real estates correlated growth with urbanization.

With the Communist Party's extremely young and new government taking power in the late 1940s, there were radical policies and ideologies that demanded rapid economic growth and thus naturally led to a strong push for urbanization. A push by the CCP was to increase urbanization that would have workers have their labor become more productive and subsequently spur "rapid urban industrial development which is and will be the principal growth for the national economy" [37]. In the past 50 years, there were a variety of efforts towards urbanization by the CCP to move workers to more productive urban areas that were quickly becoming economic global centers, or *megapolises*, such as Beijing, Shanghai, Nanjing, and the Central Liaoning metropolitan area [50]. The initial push began in the 1950s where the CCP pushed for greater entanglement amongst cities and towns and then once more with the 'Great Leap Forward'. This encouragement eventually led to an increase of 57.65 million to 130.73 million urban workers in the decade between 1949 to 1960, or an increase of 126.8% [50]. An important note, however, is that the land itself that was used and worked on by the workers were not used for any sort of financial incentive, as the government's focus was on economic output and not individual wealth creation, such as asset appreciation.

Investments in Chinese real estate for financial gain only appeared years later in the 1970s and 1980s. Prior to this period, Chinese real estate was completely owned by the state where units were given

out based on seniority, status, or job title by the government [52]. A key issue with this government management was the massive operating costs and liabilities that came with these SEOs (state-owned-enterprises) owning all the land that ultimately shifted CCP policy to become more pro-market to remove these costs. It was only in the late 80s that “the Chinese government introduced a nationwide reform starting the commercialization and privatization of urban public housing to encourage home ownership,” as they now began shifting the management, liabilities, and future capital gains to individuals and companies [52]. This decoupling, along with Deng Xiaoping’s pro-market ideologies, exploded the real estate market with an increase in real estate investment by 117% from 1991 to 1992 alone [46]. With this massive boom in this newly created market, there quickly came a downturn. While the Chinese government turned towards free market**, they subsequently increased their inflation rate that peaked at 24.26% in 1994 [13]. This rapid growth in inflation forced the CCP to tighten monetary policy by increasing interest rates, increasing down-payment requirements, and taxing short-term capital gains; all eventually cooling the ‘hot’ real estate market for a short time [46][52]. By quickly squashing this fast-growing industry, many projects, buildings, and even entire cities became unfinished with a lack of financing, particularly from state-owned banks.

II. Current Real Estate Climate in China

The Chinese real estate market in 2021 is littered with seemingly alarming signs of a massive real estate bubble that is ready to burst yet is also continuing to be infused with massive capital investment. Eerily echoing the pre-crash real estate market in the 1993-1994 period, today there are massive real estate investments that have failed to materialize, most prominently exemplified with ‘ghost’ cities. Cities such as Ordos Kangbashi (usually referred to as just Kangbashi) were these massive, new era utopians that were created from the ground-up to deal with the increasing urbanization of China’s massive population. In 2004, Kangbashi was built on completely vacant land just 15 miles South of its sister city, Ordos proper, that was meant to be a city of the future that capitalized on the discovery of nearby coal reserves and serve as the new seat of local government from the original sister city [4]. As soon as land

auctions and real estate sales went live in the region, investors saw it as a brilliant financial opportunity to get in on a new city before it's potential became fully realized. The inpouring of capital increased the square footage price in Ordos from around \$20 in 2005 to \$59 in 2010. Still, the city that was meant for 300,000 new residents (originally for 1,000,000 at start of construction but scaled down due to lower coal prices), had some estimates placing the population at a measly 20,000 in 2010, 6 years after construction and at the time its real estate was most expensive [40]. This seemingly contradictory idea of increasing real estate prices with such a low level of residents may have some reasoning behind it.

One such reason may be that Kangbashi, and other ghost cities like it, may merely be situated at the start of a development timeline. Large scale projects, such as entire cities, usually take quite a long time to fully develop with multiple stages of progression before becoming a fully developed and lively city with bustling activity, similar to the likes of Shanghai. Glaeser et al. (2017) explains these stages of growth based on supply, demand, and overall economic activity within each of the multiple stages. According to Glaeser et al. , a city like Shanghai would be considered as Tier 1 where "...demand is most robust and supply is most likely to be restricted," while a city such as Kangbashi may be considered as much more infant, at being even below a Tier 4, which is a city with active economic activity but a large population [18]. Now while Kangbashi is still largely unpopulated with little shown business, an argument can be made that it still hasn't had time yet to mature sharing the sentiment of its currently sparse residents such as Mr. Zhang who explains that "it's a new town, let's give it some time" [4].

After nearly 15 years from its construction, the city has seen some improvements with an estimated 15% capacity of permanent residents yet is still considered a ghost town by outsiders with some suggesting it may stay that way for the decades to come [51]. Even while knowing that it may be decades for any sort of capital gains to actualize, why is it that locals continue to invest so heavily into Chinese real estate? Everyday Chinese workers, from both blue- and white-collar jobs flock to real estate as an investment tool for a variety of reasons that make 70% of total Chinese wealth be concentrated in real estate as of 2019 [31].

Firstly, Chinese real estate is historically a safe bet. A recent 2017 survey concluded that 64% of those surveyed in China believe that real estate prices will continue to increase over the next 2 years [28]. This assurance comes with consistently strong real estate growth with an average YoY Chinese housing price increase of 8% from 1999 to 2021 [12]. Now comparing real estate returns with the Shanghai Composite Index of YoY returns of only 3.4% from that same period, it is clear to see why only 7% of the Chinese population own stocks compared to 90% owning real estate [22][29][26].

Secondly, there is also a limited number of investment opportunities in China. With a relatively young trading market in China, there is evidently not much popularity with trading commodities, options, and even cryptocurrency in China, relatively compared to the activity of the US. In reference to the crypto market in China, it was only recently that Chinese regulators cracked down on both mining and trading, eliminating an increasingly popular investment vehicle, particularly around Gen Z [2].

Thirdly, there is also a cultural incentive to purchasing real estate. In China it is seen as practically an absolute necessity to own property for marriage [25]. Chinese parents have been notorious for pushing their sons to invest in real estate and often even give money to help support such a big investment. Now obviously most parents would opt to financial support their adult children if financially stable enough, but since many parents in China are focused on creating ‘generational wealth’, it isn’t uncommon to see parents go to significant extents to entirely fund properties for their children, even if that means stretching their own finances [18]. Chinese parents have seen the risk with investing in the stock market while also seeing the safety of Chinese real estate, and with already limited investment vehicles, it is of no surprise that Chinese real estate investment has been growing considerably over the past 20 years with support from the Chinese public.

III. How has the CCP Cultivated this Boom?

Now that we have looked at the mania of the Chinese general population investing in real estate, we can now examine why and how the ruling CCP party cultivated its expansion.

The bottom line of the Chinese government, and truthfully the rest of the world's governments, is for economic power. The ruling economic indicator of a strong economy is its Gross Domestic Product that measures the total amount of finished goods within an economy at a given point [16]. China has always been, in the words of Paul Sheard the Chief Economist of S&P Global says, "obsessed" with GDP growth, particularly about the short-term at the expense of long-term gains [41]. Earlier in 2021, Premier Li Keqiang stated how an ambitious 6% GDP growth in 2022 would "contribute to a solid start of the start of the 14th Five-Year Plan and is closely related to China's long-term goal of fully building a modern socialist society," as global GDP forecast sits at only 3.4% for the following year [27][49]. Chinese real estate has been a massive feed to satisfy China's consistently ambitious GDP growth goals where an estimated 29% of China's GDP is related to real estate [38]. With this massive contribution to GDP and an ambitious GDP growth goal, local governments are also feeling this pressure.

Local Chinese governments have very little choice but to keep up with this real estate mania. The way that China organizes its governments is that there are multiple layers that are responsible for different sections of the country, such as a local level or state level [10]. What is unique about the layering of these governments within China is that each layer is responsible and oversees the layer underneath with performance assessed annually by superiors. Alluding back to the top-level ambitions of hitting high GDP growth, local governments are then assessed at these same levels where now lower government officials must also hit these ambitious goals in their governing regions. Patrick Chovanec of Tsinghua University explains the situation as "who wants to be the mayor who has to report that he didn't get 8% GDP growth that year? Nobody wants to come forward with that so the incentive in the system is to build" [1]. Even at times, the premier himself has directly told local governments to spend more on construction to boost further economic growth [33]. To add to the pressure, Chinese local governments have about 20% of their total revenue coming from land sales, giving them all but no choice to participate in growing the Chinese real estate market [39]. This huge revenue contribution gives the local governments very "strong incentive to encourage development instead of limiting it" according to senior lecturer of Chinese and East Asian Business, Sun Xin of Kings College London [6].

With the goal set to build more, there are two methods that the government has taken to catalyze this real estate growth: fiscal policy and land auctions. With fiscal policy it is a rather straightforward method with the CCP introducing property tax reductions (such as lowering first time purchase property tax by 5%), lower mortgage down-payment requirements (from 30% to only 20% of purchase price), and even rewarding developers for selling their properties at a discount [14][15]. A very fair and important note, however, is that just recently in 2021 the CCP has announced an attempt to curb the real estate market and limit the country's reliance on it for economic growth. Instead, the CCP is announcing initiatives to try to pour more money into high-tech and manufacturing rather than real estate [20]. With land auctions, it was insinuated earlier that local governments rely heavily on selling land for revenue. The process starts with the local government planning a set plot of land's use and formulating other specific requirements for its future development [9]. After the local government readies the land, they then hold auctions that are often aggressively bid on by large developers with the proceeds then being given to the government to then reinvest into the next potential plot of land to sell, continuing this cycle. One distinction to this cycle is that it has become commonplace for developers to sell these properties before they even get fully constructed, giving them more early capital to quickly start developing elsewhere, regardless of the end success of the project they just started [20]. One of these developers has become rather infamous recently and can serve as a great study for understanding if the real estate burst is happening today.

IV. Is the Bubble Bursting Today?

Evergrande has been one of the most dominant players in real estate development in China for the past 2 decades with total assets at Summer 2021 being estimated at \$350 billion, but its recent financial troubles potentially may be an early warning side for the Chinese real estate market.

Evergrande was founded in 1996 by Hui Ka Yan and they have been consistently purchasing undeveloped land by the government and then turning that land into primary commercial use or residential use [24]. In November 2021, their real estate portfolio boasted 1,300 projects and over 565

million square meters of developed land, but they also have their portfolio into other industries as well such as healthcare, entertainment, and even sports where they purchased Guangzhou Evergrande F.C. back in 2010 [32][5]. With their primary focus still on real estate, they decided to ride the trend of the increasingly high urbanization in China by continuously borrowing huge sums of cash from both companies and financial institutions, so that they could win auctions, develop that land, and then sell it to eager investors before construction even finished, with estimates that Evergrande has sold \$200 billion in unfinished apartments already [34]. Eventually, however, this aggressive growth strategy expanded with an increasingly high debt obligation that eventually came due.

In 2021, Evergrande had been looking increasingly unlikely to pay back its debts. In total, analysts put their total debt liabilities at \$300 billion, as they struggle with paying back high interest rates to their bond holders due to this high-risk exposure [43]. Just this September, Evergrande had a coupon payment of \$83.5 million come due to bondholders that they were only able to pay in October, almost missing the 30-day grace period [34]. Now, just this December, Evergrande formerly announced they will be pursuing a restructuring of the company with practically no way to meet future coupon payments on their debts [43]. A large player in this restructuring and the future of Evergrande is the Chinese government, as investors are eagerly awaiting their actions to address this failure.

A strong sentiment that Evergrande's bondholders and investors shared was that the government would see this company as being far too large and integrated with the Chinese economy to allow it to default on its debt and declare bankruptcy. As we discussed earlier, we saw how willing the CCP was in spurring real estate growth, particularly with fiscal policy, but with Evergrande it appears that their relationship has been strain, with a reluctance by Beijing to financially save Evergrande [34]. Just recently, Beijing has tightened its hold on risk-heavy companies and demanded that banks raise interest rates for these same companies to 'teach them a lesson' about borrowing large amounts of cash [44]. The CCP's sentiment today now has been characterized as essentially containerizing busts to not let one company's failures, such as Evergrande, affect the rest of the economy, made clear by the government

sending officials to directly help assess and contain the risks at Evergrande [34]. Overall, global investors are very wary of Evergrande's coming future and what the government's role in that future would be.

Now that we have analyzed Evergrande's current financial peril, we can now establish how its failure may reflect and even catalyze a Chinese real estate bust. Even though Evergrande may just resemble a single, isolated company going bankrupt, it is extremely integrated with China's economy. Evergrande has many suppliers, design firms, and material suppliers that have been promised future payments for their already completed work, but now that Evergrande is not in any financial position to pay back these obligations, these integrated companies are looking very likely to incur deep financial losses [24]. Estimates of this strain are difficult to measure, but that itself poises a massive risk as nobody really knows how many companies are affected and at what losses they are writing down with some preliminary estimates at just over \$100 billion owed to suppliers alone by Evergrande [42]. One very important note is that Evergrande's failure to pay back these companies are not even considering the overall employment of these affected industries as well. Construction, being an obvious synergetic partner with real estate companies, has a Chinese industry-wide employment number between 50-60 million workers whose careers are likely to be at risk with a lack of real estate projects to work on, and some salaries that have yet to be repaid [36]. Not only are other businesses affected, but also China's general population is also likely to incur massive losses. Since these unfinished Evergrande projects have already been sold to the public and are now unlikely to finish, that nearly \$200 billion of already sold, unfinished apartments are likely uncopiable [34].

From a more holistic view, Evergrande's failures are also now scaring investors away from the real estate market that will then heavily decrease confidence in the Chinese market, that would lead a credit crunch. A credit crunch is when credit becomes far more difficult to obtain as lenders drastically curb lending to a select few [47]. Credit crunches are a huge warning sign for an economy as the market is forced to slow down to minimize risks and are often seen as an early sign of an incoming recession. Other Chinese real estate companies are also under pressure such Fantasia Holdings, a luxury real estate developer, who is now under more scrutiny as they appear to also have financial trouble, missing a \$206

million coupon payment in October [34]. Even land auctions which have often showed aggressive bids by developers to get a one up on the other, have also slowed. Bloomberg and the China Real Estate Information Corp report that “about 27% of land parcels offered by local governments went unsold in September as no developer submitted bids – the highest rate since at least 2018”, indicating a massive real estate slowdown in the Chinese market because of Evergrande’s trouble [7]. With market trouble beginning to brew in China we must also take a step back and now view what effects this continued real estate trouble may have on the global market.

V. What Would a Bust Look Like for the Rest of the World?

A potential Chinese real estate collapse would have three very key critical effects on the global economy.

The first is the potential for global reliance on China to falter. Multinational companies have historically invested heavily into China to enhance their own manufacturing process by taking advantage of a growing economy with cheap labor, but recent years are seeing a drastic shift in this reliance. With trade tensions between China and the US remaining high, many of these multinational companies such as Lego, Nike, and Lululemon have already begun to diversify their manufacturing facilities to other markets such as in Southeast Asia [17]. If the Chinese real estate market were to continue with developer’s missing coupon payments and the market begins to recede, then foreign confidence in China would diminish that would prompt these multinational companies to continue looking elsewhere for manufacturing where economic risk is not nearly as high.

The second effect a real estate bust would have on the world is that it would completely rattle supply chains. China is the world’s largest exporter of goods while also the largest source of imports for 65 countries, so with a Chinese real estate crisis and tightening monetary policy, these trading partners may see a quick increase in export costs and feel the inflationary pressures as well, regardless of the willingness of firms to diversify their manufacturing away from China [48]. Moving production often takes years and companies are not able to move quick enough to adjust to a Chinese economic crisis.

With real estate being so integrated with the Chinese economy, businesses and individuals would potentially lose key clients and life savings, respectively, as everyone attempts to recover their losses in real estate investment and its related expenses. Large losses in the Chinese market would force any countries relying on Chinese trade to have delayed or cancelled orders at a large magnitude, with their own countries suffering.

The third effect a Chinese real estate bust would have on the world is that it would make other countries and investors scrutinize their own real estate markets. While it is true that China is more reliant on real estate compared to that of other developed countries, naturally holding a higher risk exposure, countries such as the US have had their own experiences with real estate crisis such as that in 2008 that shook both the US market and the world, clearly indicating that even a smaller real estate market relative to China can still have disastrous effects on the economy if not cautious. With global countries examining their own real estate markets, there may then be a push for stronger local regulation of these markets to prevent any sort of crash that is similar to the extent that China may face, like the US's sweeping regulatory policy over real estate after 2008, such as banning abusive naked short selling [21].

Although these 3 critical effects on the global economy from a Chinese real estate bubble burst will be catastrophic to the world, a bust would also likely be a threat to the Chinese government as well.

VI. How Would a Real Estate Bust Affect the CCP?

To prevent social unrest and a threat to the CCP's hold in China, it is in Beijing's best interest to prevent a real estate crisis. Over the past 20 years, we saw a clear correlation between the increase in the CCP's grip of China and the economy that continued to grow with it. The increase in power was only natural as the public saw clear monetary benefits between 2000 and 2020 with GDP per capita growing at a rapid pace from \$959 to \$10,500 over this period [11]. Now with 70% of Chinese wealth being tied into real estate and over \$200 billion of unfinished, purchased property from Evergrande alone, a Chinese real estate crash would quite likely devastate the average Chinese family's wealth [31]. With the luxury of retrospect, we have seen time and time again how growing economies make the public favorable towards

the government, but a bad economy often turns the public against that same establishment such as with Venezuela in 2021 and Germany after World War I [45][8]. Unrest in China is not quite difficult to conceptualize with the potential of billions in household savings erased, huge inflationary concerns, as well as the risk to employment for all industries, particularly those related to real estate, such as construction [36]. Now while it is difficult to speculate how the Chinese public will react to the government during a real estate crash, these trends may serve as a dark future for China if the crisis were to take place.

Conclusion

Now that we have greatly examined the real estate market in China, let us now go back to the main question: is there a Chinese real estate bubble and is it going to pop? From the analysis and examination done throughout this research, I believe there is sufficient evident to suggest that there is a massive real estate bubble currently brewing in China. This young market has been recklessly used as a tool to pump GDP growth at little underlying value that created massive debts for real estate developers' aggressive expansions. While there have been some signs by Beijing to curb this real estate growth, it seems that Evergrande may be an early warning sign of the already-impending crisis to come as real estate companies have piled on debt. This crisis would greatly harm global trade with China becoming a massive liability, but the real damage would be internal to China with so much of the economy and wealth built into real estate that its fall can threaten the China Communist Party's carefully built power.

Like other literature before, this research only is a piece of the puzzle as more research would need to be done as policy, companies defaulting, economic reports, and other factors that affect the Chinese real estate market would continue developing in the future. This bubble and its potential burst will not be a singular event in history but rather a part of a continuous string of economic initiatives that would force the Chinese real estate market to be regularly evaluated and researched for further risks and growth opportunities.

In conclusion, while there may be future trouble with China's current real estate market, and by relation the Chinese economy, there yet there may still be optimism down the road if China acts aggressively and carefully to deflate this bubble. If there is a possibility to prevent the biggest financial crisis in history, then we must be hopeful that sound individuals and their policies make it to the decision table.

** it should be noted that all financials are in USD unless otherwise mentioned and were considered as of December 2021. These numbers are obviously likely to change in the future.*

*** for the sake of this research, I am merely defining 'pro-market' and 'free-market' to be when the government takes a hands-off approach for certain industries, in this case real estate. Any sort of attempt to dissect if policies like the one mentioned are really 'pro-market' or 'free-market' are beyond the scope of this essay.*

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