

# The Role of Foreign Direct Investment in Strengthening Nigeria's Healthcare System

BY

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## ABSTRACT

This study is motivated by the persistent challenges facing Nigeria's healthcare system and the growing expectation that external capital can strengthen health sector performance, this study investigates the role of Foreign Direct Investment (FDI) in improving healthcare outcomes between 1980 and 2024. Specifically, it evaluates how FDI influences healthcare infrastructure, service delivery, and long-term population health sustainability. The study adopts a Vector Autoregressive (VAR) model to examine dynamic interactions among FDI, out-of-pocket health expenditure, life expectancy, trade openness, and physician supply. Empirical findings indicate that FDI has a positive but statistically weak effect on both out-of-pocket spending and life expectancy, suggesting that although foreign investment contributes to capital formation and infrastructural expansion, its short-run influence on affordability and access to care remains limited. Results also reveal a negative relationship between physician availability and trade openness, implying that globalization pressures may intensify medical brain drain. Policy implications emphasize aligning foreign investment with national health priorities through targeted incentives, workforce development, health education, and strategic infrastructure financing. Improving welfare conditions for medical professionals is also essential to curb migration and strengthen service delivery.

**Keywords:** Out-of-pocket health expenditure, life expectancy, trade openness, and physicians per 1000 people.

## 1. INTRODUCTION

### 1. INTRODUCTION

As nations of the world are becoming technologically inclined, the rate of globalization has tremendously increased. Trade openness which is a component of globalization also has a direct link with foreign direct investment (FDI) because as countries of the world becomes susceptible to international trade, this often creates a more attractive environment for foreign investors (Sanusi & Eita, 2023). When a country

reduces trade barriers such as tariffs and quotas, it signals a commitment to market liberalization, making it easier for multinational companies to access local and international markets from that country. This openness can enhance investor confidence, improve the efficiency of resource allocation, and increase the potential returns on investment. As a result, countries with higher trade openness typically experience higher inflows of FDI, as foreign firms seek to take advantage of favourable trade conditions and integrate into global value chains (Mudiyanselage *et al.*, 2022). Foreign Direct Investment (FDI) has

become a major tool on which countries, especially those in developing regions, seek to rely upon in order to ensure sustainable economic development. The concept of FDI, which implies the cross-border investment by a firm or individual into business assets or operations in another country, and which often reflects the interconnectedness of global economies. FDI serves as an important source of external capital for host countries, especially developing economies with limited domestic savings (Albahouth & Tahir, 2024; Chtioui & Boushib, 2025). It supplements local investment by bringing in funds that are used to build infrastructure, establish industries, or support services. One of the most significant benefits of FDI is the transfer of advanced technologies, modern equipment, and innovative practices from developed countries to developing ones.

Furthermore, foreign investments play a crucial role in the development of any industry, including the healthcare sector. Investments directed towards healthcare bring numerous advantages, such as an increase in financial resources, the introduction of advanced technologies, the establishment of new hospitals and laboratories, and the application of international expertise (Ayenagbo, 2022). These factors collectively elevate the quality and accessibility of healthcare services to new levels. In recent years, the importance of foreign investments in the healthcare industry has become more pronounced due to the growing demand for high-quality medical services and innovative treatment methods. Despite the laudable contributions of FDI towards development and a better healthcare system, Nigeria has not really maximized its full potential.

According to World Bank (2024), Nigeria recorded the highest FDI inflow to be 1.8% of GDP in 1989 and ever since then, there has been no significant contribution of FDI to Nigeria's economy. Some of the factors attributed to these are kidnapping, erratic power supply, bad road network, unfavourable government policies among many others. Health sector is also one of the vulnerable sectors suffering from the lack of FDI inflow (Siddique *et al.*, 2021). FDI often brings in advanced medical technologies and equipment through foreign health companies and partnerships. The lack of substantial FDI in Nigeria's health sector limits access to modern diagnostic tools, life-saving machines, and efficient treatment options, which contributes to poor patient outcomes and outdated medical

practices (Emeka, 2024). Furthermore, foreign investments often come with training programs and knowledge transfer to local health professionals. Nigeria's low FDI levels have limited opportunities for such capacity building. Many doctors and nurses leave the country in search of better training and working conditions abroad, exacerbating the brain drain and weakening the health system. Reduction in the level of FDI inflow in Nigeria also negatively impacts the distribution and availability of physicians, as foreign doctors or health specialists are leaving Nigeria for their countries and also attracts indigenous skilled doctors to their countries by offering better salaries and working conditions (Japa syndrome). This internal migration of healthcare professionals creates shortages in public hospitals, as the majority of Nigerians now depend on out-of-pocket health spending which consequently limits access to quality care thereby contributing to poorer health outcomes.

Based on these narratives, the study examined the role of FDI in strengthening Nigeria's healthcare system and the scope covered from 1980 to 2024. The rationale for writing this topic was because of the persistent challenges the sector faces, including inadequate infrastructure, poor funding, brain drain, and limited access to quality medical services. Despite Nigeria being the most populous country in Africa and having significant economic potential, its health indicators remain among the lowest globally. The scope of the study, covering the period from 1980 to 2024, captures the historical evolution and key turning points in Nigeria's political economy that have influenced FDI flows. This period includes significant policy shifts such as the Structural Adjustment Programme (SAP) of the 1980s, the liberalization of the economy in the 1990s, and the growing attention to public-private partnerships and health sector reforms in the 2000s and beyond. It also encompasses global events that impacted investment trends, such as the rise of globalization, the 2008 financial crisis, and the COVID-19 pandemic, which exposed the vulnerabilities of Nigeria's healthcare system.

## 2. LITERATURE REVIEW

The neoclassical growth models developed by Robert Solow and Trevor Swan (1956) showed that the output of an economy grows in response to larger inputs of capital and labour (all physical inputs). This theory revealed how capitals including technology leads to increase in

productivity and efficiency of workers and expand production of goods and services. In economic lexicon, this simply means that the technological progress is “exogenous” to the system. In the context of healthcare, FDI acts as a source of external capital that can supplement domestic investment, facilitating the construction of modern hospitals, acquisition of advanced medical equipment, and expansion of healthcare infrastructure. By increasing the stock of physical capital, FDI aligns with the Solow framework, where additional investment leads to higher output and improved welfare, provided that complementary labour and efficient institutions are in place. Furthermore, the Solow-Swan model highlights the principle of diminishing returns to capital, which underscores the importance of technological transfer embedded in FDI. For Nigeria’s healthcare system, foreign investors often bring not only financial resources but also innovations in medical technology, training, and management practices. Thus, the Solow-Swan model is relevant as it links FDI-driven capital accumulation and technological transfer to long-run health sector sustainability in Nigeria.

Recent empirical research has increasingly explored the nexus between Foreign Direct Investment (FDI) and healthcare outcomes. For instance, Jiyanboev (2024) examined the effects of foreign investment on the medical industry through a comprehensive literature review and concluded that FDI plays a pivotal role in enhancing the healthcare sector by infusing financial capital, modern technologies, and global managerial expertise. Similarly, Emeka (2024) utilized a desk research approach and found that FDI contributes positively to Nigeria’s economic expansion by promoting capital formation and facilitating the transfer of advanced technologies. However, the study also emphasized that the magnitude of this relationship largely depends on institutional quality and governance efficiency.

In a related study, Ayenagbo (2022) employed a dynamic panel model covering 44 Sub-Saharan African countries from 2002 to 2019 and applied the Generalized Method of Moments (GMM) to address endogeneity concerns. The findings indicated that FDI significantly reduces infant and child mortality rates across the region. Supporting this, Mustapha *et al.* (2023) analyzed data from 1980 to 2018 for Sub-Saharan Africa and reported that FDI inflows have a positive effect on child health outcomes. Likewise, Siddique *et al.* (2021) investigated the influence of FDI on public health in Bangladesh using the Autoregressive

Distributed Lag (ARDL) approach and discovered a long-run equilibrium relationship among the variables. The study further revealed that foreign investment and economic output jointly enhance health performance in the country.

Conversely, Chiappini *et al.* (2022) found that while developing economies substantially benefit from inward FDI, more advanced economies experience weaker or even adverse effects. The authors attributed this disparity to differences in labor market dynamics, noting that countries with strong employment protection mechanisms tend to mitigate the negative consequences of FDI. In another investigation, Burns *et al.* (2017) presented mixed evidence, indicating that FDI improves overall health outcomes measured by life expectancy, yet exerts limited influence on infant and child mortality rates. The study revealed that the beneficial effects of FDI are more pronounced in adult mortality reduction than in early-life health indicators. Similarly, Zayyana and Kwara (2024) utilized both Panel-Corrected Standard Errors (PCSE) and Feasible Generalized Least Squares (FGLS) techniques to assess the impact of FDI on environmental quality in West Africa. Their findings showed that FDI initially exerts a negative influence on environmental conditions but transitions into a positive effect after surpassing a specific threshold level.

Collectively, these studies affirm the potential of FDI as a critical driver of improved health outcomes, particularly in low and middle-income regions. Nevertheless, the literature reveals notable disparities in FDI’s impact across varying economic contexts and population groups. For example, Chiappini *et al.* (2022) highlight that developing economies derive greater health benefits from FDI inflows, while developed nations may face neutral or even detrimental outcomes, especially in the absence of robust labour protections. Similarly, Burns *et al.* (2017) reported that while adult health outcomes improve with FDI, infant and child mortality rates remain largely unaffected. In contrast, Zayyana and Kwara (2024) identified a short-term negative association between FDI and environmental quality. These divergent findings underscore the need for more context-sensitive research that integrates mediating factors such as trade openness, private health expenditure (out-of-pocket health spending), numbers of physicians, and demographic-specific health indicators (life expectancy) and how they interact with foreign direct investment in Nigeria over the years.

### 3. METHODOLOGY

The study is premised upon the Solow-Swan model (1956) which showed that the output of an economy grows in response to larger inputs of capital and labour (all physical inputs). Mathematically, the Solow-Swan model is a nonlinear system consisting of a single ordinary differential equation that models the evolution of the per capita stock of capital. The mathematical equation of Solow-Swan model was based on Cobb-Douglas production function, represented as:

$$Y = AL^\alpha k^\beta$$

Labour grows at rate n:  $L(t) = L_0 e^{nt}$

Technology grows at rate g:  $A(t) = A_0 e^{gt}$

Steady state:  $s \cdot k^\alpha = (n+g+\delta)k$

Solve for  $k^*$ , the steady-state capital per effective

$k^*$  = steady-state capital per worker (including

healthcare capital),  $s$  = savings rate (includes FDI inflows),  $\delta$  = depreciation,  $n$  = population growth,  $g$  = tech growth.

Higher FDI into healthcare raises  $s \Rightarrow$  increases  $k^* \Rightarrow$  strengthens healthcare capital stock.

From per-worker production:  $y^* = A \cdot (k^*)^\alpha$

$k^* \Rightarrow y^*$  (steady-state healthcare output per worker)

Thus, FDI boosts long-run healthcare productivity and capacity, reinforcing the healthcare system toward sustainable growth.

This study adopted and modified the model of Ayenagbo (2022), who studied empirical analysis of the effect of foreign direct investment on health status in Sub-Saharan Africa: What role for governance?. The model for this study is stated below which is specified in a VAR framework as;

$$PHY_t = \alpha_0 + \sum_{i=1}^k \alpha_{1i} FDI_{t-i} + \sum_{i=1}^k \alpha_{2i} LE_{t-i} + \sum_{i=1}^k \alpha_{3i} TO_{t-i} + \sum_{i=1}^k \alpha_{4i} OOP_{t-i} + \mu_{1t}$$

$$FDI_t = \beta_0 + \sum_{i=1}^k \beta_{1i} LE_{t-i} + \sum_{i=1}^k \beta_{2i} PHY_{t-i} + \sum_{i=1}^k \beta_{3i} TO_{t-i} + \sum_{i=1}^k \beta_{4i} OOP_{t-i} + \mu_{1t}$$

$$LE = \gamma_0 + \sum_{i=1}^k \gamma_{1i} PHY_{t-i} + \sum_{i=1}^k \gamma_{2i} FDI_{t-i} + \sum_{i=1}^k \gamma_{3i} TO_{t-i} + \sum_{i=1}^k \gamma_{4i} OOP_{t-i} + \mu_{1t}$$

$$TO_t = \varphi_0 + \sum_{i=1}^k \varphi_{1i} PHY_{t-i} + \sum_{i=1}^k \varphi_{2i} FDI_{t-i} + \sum_{i=1}^k \varphi_{3i} LE_{t-i} + \sum_{i=1}^k \varphi_{4i} OOP_{t-i} + \mu_{4t}$$

$$OOP_t = \vartheta_0 + \sum_{i=1}^k \vartheta_{1i} PHY_{t-i} + \sum_{i=1}^k \vartheta_{2i} FDI_{t-i} + \sum_{i=1}^k \vartheta_{3i} LE_{t-i} + \sum_{i=1}^k \vartheta_{4i} OOP_{t-i} + \mu_{5t}$$

Where; PHY = Physician per 1000 people, OOP = Out of pocket Health Spending, LE = Life Expectancy, TO = Trade Openness and FDI = Foreign Direct Investment

#### 4. RESULTS AND DISCUSSION

##### Stationarity Test

The unit root result or stationarity test for the variables used is shown in table 1. The variables are physician per 1000 people, out of pocket health spending, life expectancy, trade openness

and foreign direct investment. The result shows a mixed order of integration where physician per 1000 people, out of pocket health spending, life expectancy and trade openness were stationary at first difference using both Augmented Dickey Fuller test and Phillips-Perron. However, foreign direct investment was stationary at level.

**Table 1: Unit Root Test (Augmented Dickey Fuller (ADF) and Phillips-Perron (PP))**

	ADF		PP				
Variables	Critical values		Critical values		P-Value	Order of Integration	Remark
FDI	1%	-3.588509			0.0020	I (0)	Stationary at Level
	5%	-2.929734					
	10%	-2.603064					
LE			1%	-4.186481	0.0115	I (1)	Stationary at 1 <sup>st</sup> difference
			5%	-3.518090			
			10%	-3.189732			
OOP	1%	-3.592462			0.0000	I (1)	Stationary at 1 <sup>st</sup> difference
	5%	-2.931404					
	10%	-2.603944					
PHY	1%	-3.592462			0.0000	I (1)	Stationary at 1 <sup>st</sup> difference
	5%	-2.931404					
	10%	-2.603944					
TO	1%	-4.186481			0.0002	I (1)	Stationary at 1 <sup>st</sup> difference
	5%	-3.518090					
	10%	-3.189732					

Source: Authors' Computation, 2025.

##### Correlation Matrix

The correlation matrix shows a positive and strong correlation between physicians per 1000 persons and life expectancy. That is, an increase in numbers of physician leads to an increase in life expectancy. Conversely, there exists a negative but weak correlation between out of pocket expenditure and life expectancy which

means that an increase in out of pocket expenditure reduces life expectancy which implies that as individual household continue to bear health cost, it yield a negative impact on life expectancy. Also there is a positive but weak correlation between trade openness and life expectancy that is, an increase in trade openness leads to increase in life expectancy.

**Table 2: Correlation Matrix**

Variables	FDI	LE	OOP	PHY	TO
FDI	1.0000				
LE	-0.1796	1.0000			
OOP	0.0351	-0.4381	1.0000		

<b>PHY</b>	0.0315	0.8933	-0.4898	1.0000	
<b>TO</b>	0.1119	0.4676	-0.4147	0.3847	1.0000

Source: Authors' Computation, 2025.

### Vector Autoregression Estimates

The VAR result provides important insights into the role of Foreign Direct Investment (FDI) in strengthening Nigeria's healthcare system. The findings show that lagged FDI has a positive but statistically weak impact on out-of-pocket health spending (OOP) ( $FDI(-1) = 0.755206$ ,  $t = 1.657$ ) and life expectancy (LE) ( $FDI(-1) = 0.024767$ ,  $t = 0.525$ ), suggesting that while foreign investments contribute to capital accumulation and potential infrastructure development, their immediate translation into affordable healthcare access remains limited. This weak pass-through effect reflects Nigeria's structural challenge, where FDI is concentrated in capital-intensive sectors like oil, manufacturing and telecommunications rather than health-related industries. The positive relationship implies that FDI can improve the financial capacity of the healthcare sector through technology transfer and employment generation, but without effective government policy alignment, its benefits on healthcare affordability and outcomes are delayed. Moreover, the negative influence of  $OOP(-1)$  on LE ( $-0.036843$ ,  $t = -2.081$ ) highlights the health financing inefficiency in Nigeria, where high personal healthcare payments reduce access to quality services, undermining the potential health benefits that could be derived from FDI inflows. Similarly, the strong persistence in life expectancy ( $LE(-1) = 0.887808$ ,  $t = 3.148$ ) indicates that improvements in public health outcomes are gradual, requiring sustained investment in healthcare infrastructure and human capital rather than short-term financial inflows.

The negative effects of physicians per 1,000 people ( $PHY(-1) = -3.932635$ ,  $t = -0.19975$ ) and trade openness shows that increased trade openness leads to decreased numbers of physicians. The negative relationship between the numbers of physicians and trade openness indicates that as international trade expands, the availability of medical professionals within the country tends to decline (brain drain) where skilled health workers migrate to other developed countries. However, the coefficients of  $FDI(-1)$  and  $FDI(-2)$  in the PHY equation are 0.003036 and 0.002812, respectively, both of which are positive, though statistically insignificant given their low t-statistics of 1.18039 and 1.12188. This implies that previous inflows of foreign direct investment exert a mild but positive effect on the number of physicians. Conversely, the  $PHY(-1)$  variable in the FDI equation shows a positive and large coefficient of 6.484692, with a statistically strong t-statistic of 5.31933, indicating that previous increases in the number of physicians per 1,000 people substantially enhance future FDI inflows. The moderate explanatory power for FDI ( $R^2 = 0.40$ ) compared to life expectancy ( $R^2 = 0.99$ ) and physicians ( $R^2 = 0.97$ ) indicates that while macroeconomic factors such as trade and investment matter, internal system efficiency, governance, and health workforce capacity are more crucial in determining health outcomes.

Table 3: Vector Auto-regression Estimates

	FDI	LE	OOP	PHY	TO
FDI(-1)	0.182318 (0.17706) [ 1.02969]	0.024767 (0.04717) [ 0.52501]	0.755206 (0.45578) [ 1.65696]	0.003036 (0.00257) [ 1.18039]	-0.128142 (0.29610) [-0.43276]
FDI(-2)	-0.087002 (0.17256) [-0.50418]	0.021730 (0.04598) [ 0.47265]	-0.488152 (0.44420) [-1.09895]	0.002812 (0.00251) [ 1.12188]	-0.146535 (0.28858) [-0.50778]
LE(-1)	0.875082	0.887808	-4.659071	-0.013836	0.391066

	(1.05858) [ 0.82666]	(0.28204) [ 3.14784]	(2.72491) [-1.70981]	(0.01538) [-0.89980]	(1.77028) [ 0.22091]
LE(-2)	-1.329732 (1.10455) [-1.20387]	0.210479 (0.29428) [ 0.71522]	4.879173 (2.84324) [ 1.71606]	0.020340 (0.01604) [ 1.26776]	-0.414196 (1.84716) [-0.22423]
OOP(-1)	0.051936 (0.06646) [ 0.78149]	-0.36843 (0.01771) [-2.08079]	0.906721 (0.17107) [ 5.30034]	-0.001343 (0.00097) [-1.39162]	0.015442 (0.11114) [ 0.13894]
OOP(-2)	0.019446 (0.05829) [ 0.33364]	0.004266 (0.01553) [ 0.27471]	-0.215163 (0.15003) [-1.43409]	-0.000626 (0.00085) [-0.73973]	-0.084495 (0.09747) [-0.86685]
PHY(-1)	6.484692 (11.7730) [ 0.55081]	-0.255388 (3.13668) [-0.08142]	0.779078 (30.3051) [ 0.02571]	0.909666 (0.17101) [ 5.31933]	-3.932635 (19.6883) [-0.19975]
PHY(-2)	3.834999 (11.2625) [ 0.34051]	-1.940886 (3.00068) [-0.64682]	-7.229698 (28.9911) [-0.24938]	-0.170618 (0.16360) [-1.04292]	8.699122 (18.8346) [ 0.46187]
TO(-1)	0.119630 (0.12560) [ 0.95244]	0.040857 (0.03346) [ 1.22090]	-0.579930 (0.32332) [-1.79367]	0.001155 (0.00182) [ 0.63308]	0.795939 (0.21005) [ 3.78928]
TO(-2)	0.070067 (0.10978) [ 0.63822]	-0.039190 (0.02925) [-1.33983]	0.586176 (0.28260) [ 2.07423]	-0.002704 (0.00159) [-1.69589]	-0.296764 (0.18360) [-1.61640]
C	13.82488 (7.95405) [ 1.73809]	-1.522179 (2.11920) [-0.71828]	14.52882 (20.4747) [ 0.70960]	-0.082128 (0.11554) [-0.71083]	7.970203 (13.3017) [ 0.59919]
R-squared	0.400635	0.993636	0.835781	0.977350	0.612441
Adj. R-squared	0.213333	0.991648	0.784463	0.970272	0.491328
Sum sq. resids	37.32928	2.649825	247.3479	0.007876	104.3975
S.E. equation	1.080065	0.287762	2.780220	0.015689	1.806218
F-statistic	2.138984	499.6613	16.28617	138.0809	5.056799
Log likelihood	-57.97378	-1.100163	-98.63067	123.9950	-80.08498
Akaike AIC	3.208083	0.562798	5.099101	-5.255582	4.236511
Schwarz SC	3.658623	1.013338	5.549640	-4.805043	4.687050
Mean dependent	1.438372	49.10628	74.32209	0.313256	5.313953
S.D. dependent	1.217740	3.148713	5.988496	0.090992	2.532511
Determinant resid covariance (dof adj.)		0.000194			
Determinant resid covariance		4.42E-05			
Log likelihood		-89.48624			
Akaike information criterion		6.720290			
Schwarz criterion		8.972988			
Number of coefficients		55			

Source: Authors' Computation, 2025.

The finding from this study provides an insight into the role of Foreign Direct Investment (FDI) in Nigeria's healthcare system, aligning in part with prior empirical research while revealing context-specific dynamics. Consistent with Jiyanboev (2024) and Emeka (2024), the positive, albeit statistically weak, impact of lagged FDI on

out-of-pocket health expenditure and life expectancy suggests that foreign capital contributes to infrastructure development and technology transfer, supporting healthcare financing capacity and sectoral growth. Similarly, the positive relationship between prior physician availability and subsequent FDI inflows echoes

the notion that human capital can attract investment, reinforcing findings from Ayenagbo (2022) and Mustapha *et al.* (2023) that FDI improves health outcomes such as child mortality and life expectancy across Sub-Saharan Africa. However, the weak pass-through of FDI into immediate healthcare accessibility in Nigeria shows the mediating influence of structural and governance constraints, reflecting the conditional role of institutional quality emphasized by Emeka (2024) and Siddique *et al.* (2021). The observed negative effect of trade openness on physician density highlights the brain drain phenomenon, extending Chiappini *et al.* (2022) argument that labour market dynamics can diminish the domestic health workforce despite investment inflows. In line with Burns *et al.* (2017) and Zayyana and Kwara (2024), the results suggest that while FDI has the potential to enhance overall health outcomes, its effects are uneven across population groups and require sustained policy alignment, workforce development, and sector-specific targeting to translate capital inflows into tangible improvements in healthcare access, affordability, and long-term population health.

## 5. CONCLUSION AND RECOMMENDATIONS

In conclusion, the VAR results reveal that while Foreign Direct Investment (FDI) plays a potentially supportive role in enhancing Nigeria's healthcare system, its direct and immediate impact remains weak and constrained by structural and institutional inefficiencies. The positive but statistically insignificant influence of FDI on out-

of-pocket health spending, life expectancy, and the number of physicians suggests that foreign investments have yet to be effectively channeled into the healthcare sector, limiting their transformative potential. The strong positive feedback from physician density to FDI inflows indicates that a robust healthcare workforce can attract and sustain higher levels of foreign investment. However, the negative relationship between trade openness and physician availability shows the challenge of brain drain, as global integration often draws skilled medical professionals abroad.

Based on the foregoing, the following recommendation were suggested, the government should develop policies that improve the working conditions, remuneration, and career advancement opportunities for physicians and other healthcare professionals to discourage emigration. Furthermore, trade and health policies should be harmonized to ensure that increased openness to trade does not undermine the health sector's human resource base. Additionally, this study suggests that government should adopt policies that strategically align FDI inflows with national health sector priorities, particularly in health education, professional training, and healthcare infrastructure development. Lastly, governments should establish policy frameworks and investment incentives that attract foreign investors to key areas of healthcare such as hospital and clinic infrastructure, pharmaceutical manufacturing, biotechnology, medical equipment production, and health insurance services.

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