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Short- and long-term drivers of China's high-tech export leadership: empirical analysis

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Abstract. It is widely acknowledged that the People's Republic of China has emerged as a major player in the global arena of high-technology product exports. In the preceding 15-year period, high-tech exports have exhibited an average annual growth rate of 6%, though this trend is stochastic in nature. Consequently, the growth rate is not consistent but is acutely responsive to external shocks. The Granger causality test and the Engle — Granger cointegration test are utilised to identify the long-run effects of the variables under consideration. The Error Correction Model (ECM) is employed to estimate the long-run and short-run response to changes in the main drivers. The results demonstrate that despite changes in economic policy and the launch of the Made in China 2025 programme a decade ago, the primary long-term driver of export growth remains foreign capital. While expenditures on research and development (R&D) have shown a tendency to positively influence high-tech exports in the short term, international investment, particularly in the form of foreign direct investment, has a more significant long-term impact on high-tech exports from China. In the short term, a decline in net foreign direct investment inflows is likely to be balanced by an increase in R&D. Nevertheless, in the long term, the impact of accumulated international investment proves to be considerably more significant. New Chinese policy priorities are expected to shift the main driver of high-tech export growth from foreign capital to domestic R&D.

Keywords: China, high-tech export, international investment, stochastic trend, Granger causality, Error correction model

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Краткосрочные и долгосрочные факторы лидерства Китая в экспорте высоких технологий: эмпирический анализ

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Аннотация. Широко признано, что Китайская Народная Республика стала крупным игроком на мировой арене экспорта высокотехнологичной продукции. В течение предыдущего 15-летнего периода экспорт высокотехнологичной продукции демонстрировал среднегодовой темп прироста в 6 %, хотя эта тенденция носит стохастический характер. Следовательно, темпы роста не являются постоянными, но остро реагируют на внешние шоки. Тест причинности Грейнджера и тест на коинтеграцию Энгла — Грэнжера использованы для выявления долгосрочных эффектов рассматриваемых переменных. Модель коррекции ошибок (ECM) применена для оценки долгосрочной и краткосрочной реакции высокотехнологичного экспорта на изменения основных факторов. Результаты показали, что, несмотря на изменения в экономической политике и запуск программы «Сделано в Китае 2025» десять лет назад, основным долгосрочным фактором роста экспорта остается иностранный капитал. В то время как расходы на научно-исследовательские и опытно-конструкторские работы (НИОКР) показали тенденцию к положительному влиянию на экспорт высокотехнологичной продукции в краткосрочной перспективе, международные инвестиции, особенно в форме прямых иностранных инвестиций, оказывают более существенное долгосрочное влияние на экспорт высокотехнологичной продукции из Китая. В краткосрочной перспективе снижение чистого притока прямых иностранных инвестиций, вероятно, будет компенсировано ростом НИОКР. Тем не менее, в долгосрочной перспективе влияние накопленных международных инвестиций проявило себя значительно более существенным. Ожидается, что новые приоритеты китайской политики сместят основной драйвер роста экспорта высокотехнологичной продукции с иностранного капитала на внутренние НИОКР.

Ключевые слова: Китай, экспорт высоких технологий, международные инвестиции, стохастический тренд, причинность по Грейнджеру, модель коррекции ошибок

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Introduction

In the context of rapid technological progress, each country is seeking its own strategies to ensure sustainable economic growth. In the modern world, innovation and high technology are becoming key factors in determining the competitiveness of countries in the international arena. This trend is especially evident in the case of China's economic growth, which is rapidly transforming from a producer of low-tech goods to a leading economy capable of developing and implementing advanced technologies (Reshetnikova, Balashova, 2024).

The Chinese economy has undergone massive changes, moving from traditional industries to high-tech sectors. Since the implementation of economic reforms and the opening of the Chinese economy in 1978, the country has consistently achieved growth rates that have exceeded 10%. This transformation can be attributed to the transition from a planned economy to a mixed economy, wherein the market assumes a predominant role in resource allocation. A substantial portion of China's notable economic growth between 1978 and 2000 can be ascribed to these reforms. However, the more recent and accelerated growth observed in 1990th — 2010th has been predominantly driven by exports. For an extended period, the People's Republic of China has pursued policies that have enabled it to acquire, adapt, and disseminate technologies to enhance its export competitiveness (Chandra, 2006). In early 2000th China became the largest recipient of foreign direct investment (FDI) among developing countries. It is well documented that FDI contributed to GDP growth in China in at least two ways: through increased capital formation and higher total factor productivity.

Nevertheless, in recent years, China has sought to reduce its reliance on foreign capital and technology. The Made in China 2025 initiative (MIC 2025), which was originally announced in 2015, is a programme with the objective of modernising China's industrial capabilities. This research-and-development-driven plan is regarded as a critical element in China's sustained growth and competitiveness for the coming decades as it transitions into a developed economy.

Statistical data has indicated that China's export of high-tech products has exhibited a consistent growth trajectory over the past 15 years. Utilising contemporary econometric methodologies, the present study seeks to ascertain whether this trend is deterministic, indicating a heightened resilience to external shocks, or stochastic, implying greater variability. The extensive body of literature dedicated to the subject of China's economic developments has asserted that foreign direct investment has been instrumental in the growth of the high-tech industry within China. The objective of the present study is to assess the impact of research and development (R&D) and foreign investment on the growth of high-tech exports from China, taking into account the rate of economic growth. The Granger causality test and the cointegration test are used to identify the long-run effects of the variables under consideration. The Error Correction Model (ECM) is applied to estimate the long-run and short-run response to changes in the main drivers.

Literature review

The high-tech export of Chinese products has attracted the interest of numerous researchers over the past 20 years. The earliest studies explore how the role of China's high-tech industry in the Asian region has evolved within the context of globalization (Gaulier, Lemoine, Ünal-Kesenci, 2007), as well as the role of high-tech product (HTP) exports and foreign direct investment (FDI) in economic growth (Ekananda, Parlinggoman, 2017), and the relationship between foreign investment and the high-tech sector (Liu, Gao, 2020). In their 2011 work, authors Kelly Liu and Kevin James Daly (Liu, Daly, 2024) examined how China transitioned from low-tech to high-tech production. Subsequent studies have increasingly focused on the high-tech indicator itself, investigating factors influencing China's high-tech industry. Some authors have explored how intellectual property impacts the productivity of Chinese exporters (Lee, Wang, 2023). A significant number of studies have been dedicated to exploring the links between the high-tech sector and R&D. For instance, the efficiency of Chinese R&D was analyzed using firms from Changzhou as a case study (Chen, Zhang, Zheng, 2017). The effectiveness of R&D investments has also been examined both broadly, beyond Changzhou (Han et al., 2017), and at the firm level (Fu, Wu, Tang, 2012). In conjunction with other indicators, specific industries, such as the automotive and electronics sectors, have been studied (Wignaraja, 2012).

More specific indicators were addressed in the work of Stelian Sandu and Bogdan Ciocanel (Sandu, Ciocanel, 2014), who investigated the relationship between R&D and high-tech exports, rather than the high-tech sector as a whole. There is also research that attempts to link broader indicators, such as R&D and the overall export of Chinese products (Kittová, Družbacká, 2023). Approaches to the topic vary; for example, the relationship between R&D and the high-tech sector has been examined using a geographical approach, with Chinese provinces serving as the spatial framework (Han, Feng, 2023). Other researchers have approached the issue from the perspective of sustainability (Hao, Qiu, Cervantes, 2016). Authors of a subsequent publication questioned the applicability of similar models across different countries, proposing a universal framework for empirical research on the links between R&D and the high-tech sector (Rauf, Ma, Jalil, 2023). The impact of R&D on the export competitiveness of HTP has also been explored (Hu, Zhang, Zhu, 2024). However, China is not the only country of interest to researchers. Similar studies have been conducted on select Eastern European countries (Domazet et al., 2021), and comparative analyses have been carried out between developed and developing nations (Bayraktutan, 2018). Researchers Yanying Chen and Yijun Yuan raised an intriguing question: what influences a firm's development strategy (Chen, Yuan, 2007)? Should firms conduct R&D in-house or outsource it? Will these innovations help a company survive in the market (Zhang, Zheng, Ning, 2018)?

In addition to China's high-tech exports, the strategy of China's technological progress has been actively discussed. Researchers have examined the relationship between innovation and imports (Chen, Zhang, Zheng, 2017), as well as the connection between technology transfer and exports (Ma, Rauf, 2020). Some studies have focused not on HTP exports directly, but on related indicators, such as the impact of FDI on organizational innovation (Cheung, 2010), the channels of innovation diffusion (Liu, Buck, 2007), and how various factors influence innovation (Zhu, Wang, Wang, 2019).

The effects of FDI, mergers, and acquisitions on innovation in the HTP sector have also been analyzed (Liu, Zou, 2008). Some works have addressed not only HTP exports but also the overall export of Chinese products, the influence of FDI on production (Liang, 2008), and other factors, including government policy (Zhang, 2015), as well as the impact of FDI and government intervention. The influence of HTP exports on other indicators has also been examined (Zhang, Zhao, Wang, 2019). An interesting study on stereotypes about the quality of Chinese products has been conducted (Xiong, Qureshi, 2013). Among the most recent works, the impact of the Chinese government's "dual circulation" strategy on HTP exports has been explored (Shmarlouskaya et al., 2023).

The present study contributes to this vast literature by focusing on the statistical properties of the variables under investigation and by using state-of-the-art econometric techniques to assess the log-run impact of R&D and foreign investment, not limited to FDI, on China's high-tech exports over the last 15 years.

Data and Methodology

In this study, a deterministic and a stochastic trend model are fitted to data on the export of high-tech products from China between 2007 and 2023 to ascertain the most suitable model to use in analysing this data.

In order to develop a model that illustrates the dynamics of China's high-tech exports depending on funding sources, the following factors are considered: R&D expenditure, foreign direct investment and international investment position (liabilities). The definition of variables and data sources are given in Table 1.

Table 1

Description of variables

Variable notation	Variable definition	Source
HTECH	High-technology exports (current US$)	The World Development Indicators, TX.VAL.TECH.CD
FDI	Foreign direct investment, net inflows (BoP, current US$)	The World Development Indicators, BX.KLT.DINV.CD.WD
XRD	Research and development expenditure (% of GDP), R&D intensity	The World Development Indicators, GB.XPD.RSDV.GD.ZS
GDP	GDP (current US$)	The World Development Indicators NY.GDP.MKTP.CD
IIPL	International Investment Position, Liabilities (current US$)	IMF Data Warehouse

Source: The World Bank. Retrieved 11 November, 2024, from https://wdi.worldbank.org/; International Monetary Fund. Retrieved 9 November, 2024, from https://data.imf.org/

We describe the dynamics of China's high-tech exports using a trend model, taking into account that log-transformation should proceed an estimation of linear trend parameters. There are two different ways of modelling a linear trend. A deterministic trend is obtained using the regression model

$$\mathrm{Log}(HTECH_t) = \alpha + \delta t + ut, \tag{1}$$

where u_t is an error term and follow an ARMA (p,q) process. In a simplest case it is an ARMA (1,0) and

$$u_t = \rho u_{t-1} + v_t, \tag{2}$$

where v_t is a white noise.

A stochastic trend is obtained using the model (1), where u_t is an ARIMA (p,d,q) process with d = 1 (non-stationary process which become stationary after first differencing). In this case we can rewrite equation (1) as follows:

$$\mathrm{Log}\left(HTECH_t\right) = \mathrm{Log}\left(HTECH_{t-1}\right) + \delta + \left(u_t - u_{t-1}\right), \tag{3}$$

thus, $(u_t - u_{t-1})$ is ARMA (p,q) and we can use regression techniques to asses parameters of equation (3).

The coefficient, designated as δ, in Equations (1) and (3), provides an average annual growth rate for *HTECH*, evaluated under the two different assumptions about the error term u_t.

Before building the regression model when working with time series, it is necessary to check our variables for (weak) stationarity. We utilise the ADF test (Dickey, Fuller, 1981).

To analyse the impact of international investment and R&D expenditure on high-tech export we use two approaches.

Following the existing literature, we regress *HTECH* (In log form) on FDI and R&D intensity, controlling for GDP. For those time series which occurred to be I (1) (stationary in first difference), we apply differencing. This approach allows to asses the association between changers in explanatory variable on the dependent variable.

The second approach is based on the hypothesis that the time series *HTECH* have a long-term, stable relationship with one or more time series variables, even if those variables themselves are individually non-stationary. In a more formal context, if considered time series are individually integrated of order d (i.e. they require d differences to become stationary) but a linear combination of them is integrated of a lower order, then it is said that the time series are cointegrated (Engle, Granger, 1987).

This approach in tern is comprised of multiple steps. The Granger causality test is utilised to ascertain which variable can be regarded as explanatory for *HTECH*. Then Engle-Granger two-step method is used.

The initial step in the Engle-Granger process is the assessment of the cointegration equation, in which Log(*HTECH*) is a dependent variable.

The general form of the cointegration equation between the dependent variable Y_t and the explanatory variable X_t is the following:

$$Y_t - \beta X_t = u_t. \tag{4a}$$

In modern econometrics Fully Modified Ordinary Least Squared (FM OLS) estimator for the parameter β is used, which employed a semi-parametric correction to OLS estimator (Phillips, 1995). If u_t is stationary according to ADF test, then variables considered to be cointegrated.

A second-stage regression is a regression of Y_t on the lagged regressors, X_t, and the lagged residuals from the first stage,

$$\Delta Y_t = \alpha + \gamma \Delta X_t + \lambda \hat{u}_{t-1} + v_t. \tag{4b}$$

In equation (4b) $\hat{u}_{t-1}$ denotes the residuals from equation (4a), v_t is a white noise.

This model is referred to as an error correction model (ECM), a tool that is employed to estimate the short-term and long-term effects of one time series on another.

Results

Key facts on China's High-Tech Exports. China's leadership in high-tech exports is confirmed by World Bank data. According to the World Bank classification, high-tech exports are products with high R&D intensity, such as aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. The share of high-tech products in China's exports over the past 20 years has significantly exceeded the figure for industrially developed countries such as France and Germany, exceeded the figure for the United States (although in 2007 these shares were about 30% in both countries) and is slightly inferior to Great Britain, but only for 2023 (Fig. 1).

With respect to value, China's high-tech exports exhibited a marked superiority over those of all other countries in 2007, a position it subsequently retained 15 years later. However, the gap between China and other nations has widened considerably (Fig. 2).

Over the past 15 years, there has been negligible change in the composition of China's exports. In 2007, electrical machinery and electronics accounted for almost 25% of total exports; by 2023, this group accounted for almost 30% of total exports[1]. According to the World Bank classification, high-tech exports consist of the following main groups of products: aerospace, computers-office machines, pharmacy, electrical machinery. The composition of China's export in 2023 is presented in fig. 3.

[1] The Observatory of Economic Complexity. Retrieved January 25, 2025 from https://oec.world/en/profile/country/chn?yearSelector1=2023&depthSelector1=HS2Depth

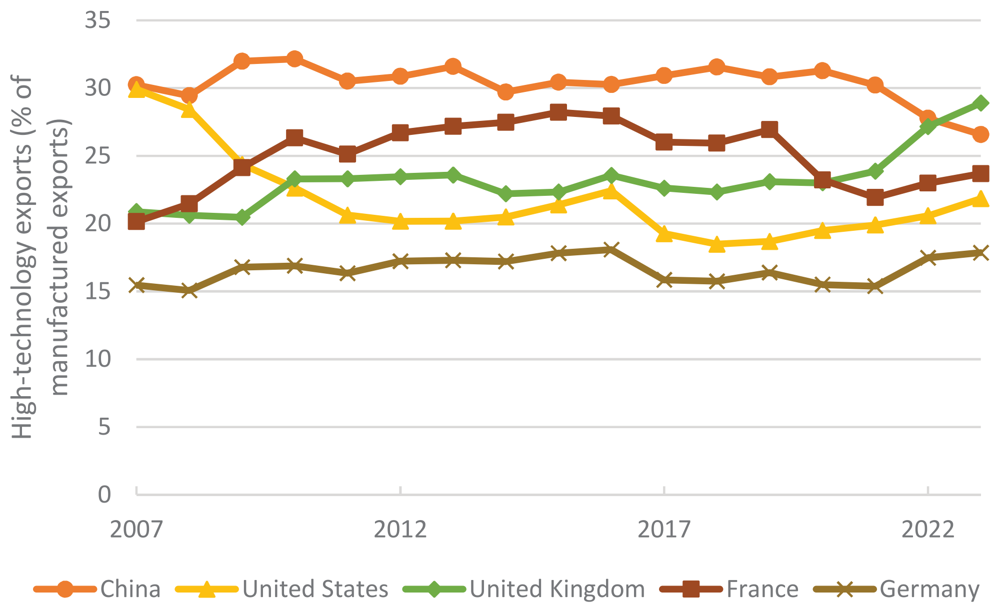

Figure 1. Dynamics of high-technology export (% of manufactured export) for China and its main competitors

Source: World Development Indicators[2].

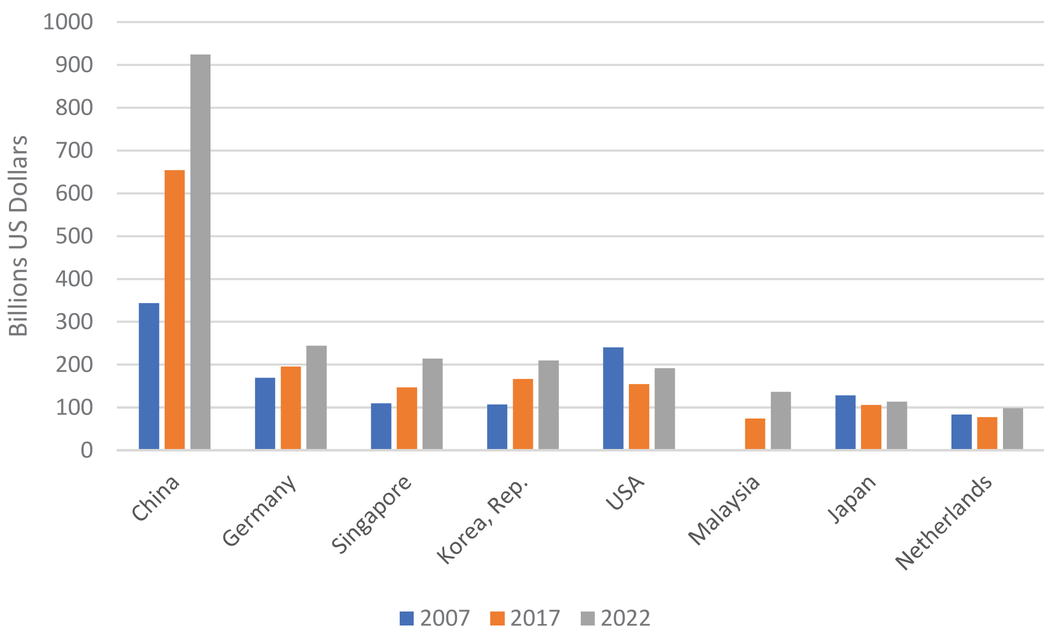

Figure 2. The largest exporters of high-tech products

Source: World Development Indicators[3].

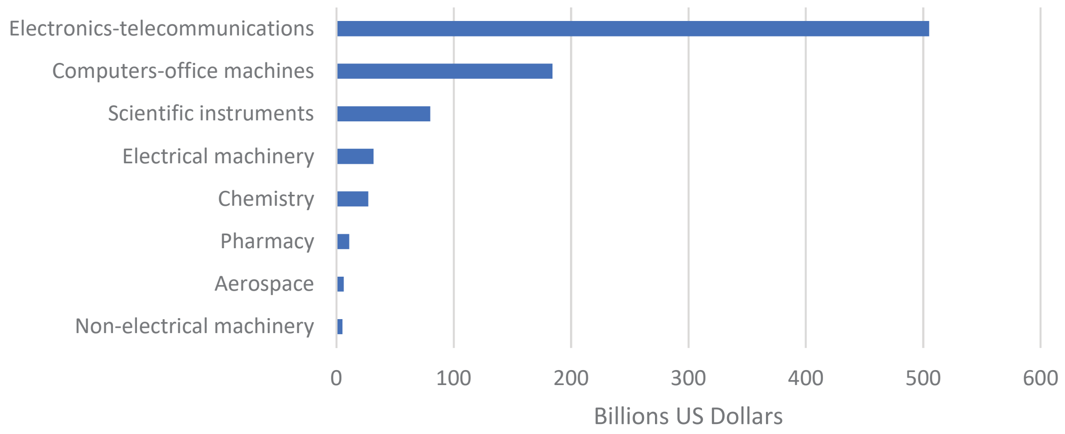

Figure 3. Top exports of China in 2023
Source: UN Comtrade Database[4].

Trends in high-tech export

The ARMA Maximum Likelihood method is used to estimate the trend parameters in equation (1). Results for the deterministic trend under the assumption (2) are as follows:

$$\text{Log}\left(HTECH\right)^{\wedge} = 26.16 + 0.06t + \left[AR\left(1\right) = 0.51\right].$$

The R-squared equals to 0.91, all coefficients are significant at the 1% significance level. It is anticipated that China's high-tech exports will exhibit a growth trajectory of 6% annually, according to the equation.

The estimation of the growth in high-tech export from the stochastic trend (3) is similar. However, the stochastic trend has much wider prediction intervals because the errors in (1) are not stationary (fig. 4). It is important to note that the augmented Dickey-Fuller (ADF) test supports the hypothesis that the examined series exhibits a stochastic trend rather than a deterministic one.

The data obtained for the year 2023 demonstrates a decline in high-tech exports, a phenomenon that was not anticipated by trend models. However, it should be noted that the observed data falls within the 95% confidence interval of the prediction. It is worth to note, that the employment of stochastic trends for the purpose of prediction is subject to considerable constraints, as the confidence intervals are known to expand in proportion to an increase in the time span under consideration.

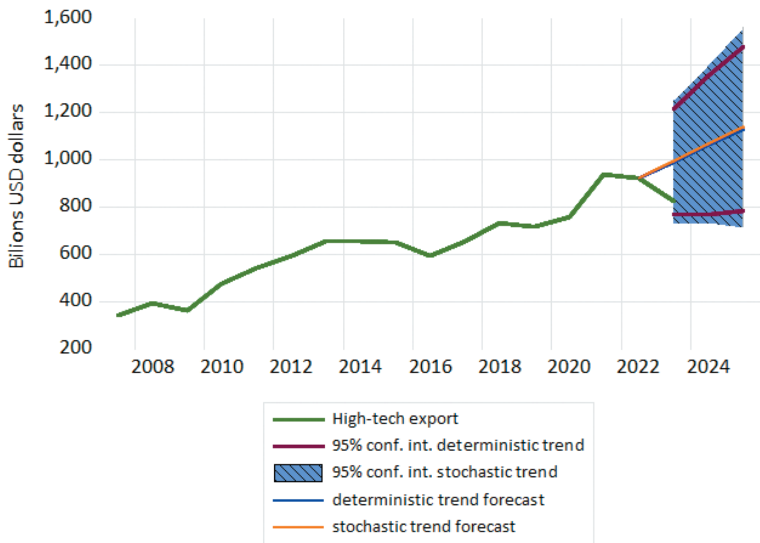

Figure 4. High-tech export from China: actual and forecast (2023–2025)
Source: calculated by S.A. Balashova, R.A. Abramian, N.V. Lazarev based on WDI.

Short-run and long-run drivers of high-tech export. The hypothesis that the growth rate of high-tech exports is influenced by the growth rate of the economy, the growth rate of FDI, and the share of R&D in the previous GDP period, is tested. Employing the ordinary least squares (OLS) method results in the following findings

$$\Delta \text{Log}\left(HTECH_t\right) = 0.97 * \Delta \text{Log}\left(GDP_t\right) + 0.14 * XRD_{t-1} +$$

$$+ 0.12 * \Delta \text{Log}\left(FDI_t\right) - 0.30. \quad (5)$$

Despite the modest sample size (n = 16), the equation is noteworthy and possesses a high degree of goodness of fit ($R^2 = 0.85$). The coefficients associated with the variables are statistically significant at the 5% level. The Durbin-Watson statistics (DW = 2.6) indicate the absence of autocorrelation. The calculations of standardized coefficients from equation (5) demonstrate that high-tech exports are the most sensitive to annual changes in GDP (In current USD), followed by net inflows of FDI (also in current USD), and the least sensitive to changes in the share of R&D in GDP.

Using estimates for China GDP in 2024 to be 18.2 trillion USD, taken from Trading Economics[5], and R&D intensity to be 2,68% as reported by The State Council Information Office[6] and assuming the FDI has not changed in 2024 compared to 2023, the estimated value of high-tech export is 888 billion USD, which is higher

[5] Trading Economics. *China GDP.* Retrieved September 10, 2024 from https://tradingeconomics.com/china/gdp

[6] The State Council Information Office, The People's Republic of China. *China's R&D spending reports rapid growth in 2024.* Retrieved February 10, 2025 from h http://english.scio.gov.cn/pressroom/2025-01/23/content_117681815.html

then in 2023, but lower then in 2021 and 2022. The growth in high-tech exports from China in 2021 and 2022 can be attributed to an increased demand for electronics and telecommunications products, which was delayed due to the pandemic. Consequently, these products remain the primary category of high-tech exports from China (Fig. 3). Further growth is therefore expected to be in line with the growth of the global market for such products.

Recent years have seen China attach great importance to fundamental research, with significant progress being made in the construction of major scientific apparatus and infrastructure. A number of original achievements have been made in fields such as quantum technology, life science, materials science and space science (Reshetnikova, Mikhaylov, 2023). It is anticipated that these developments will lead to breakthroughs in key and core technologies. However, it should be noted that the R&D effect is prolonged and not straightforward.

The Granger causality test is utilised in order to assess the hypothesis that R&D and foreign investment have the capacity to predict high-tech exports in the long term. Rather than employing current foreign direct investment (FDI) net inflows, we consider China assets owned by foreign nations from the international investment position (denoted as IIPL). This is predicated on the assumption that not only direct investments, but also portfolio and other investments, may exert influence on high-tech production and exports (Navarro Zapata, Arrazola, de Hevia, 2024). Following the validation of the considered time series as I (1) (stationary in first differences) through the Dickey-Fuller test, the Granger test for first differences is employed, with the consideration of only two lags due to the relatively limited length of the time series. The results obtained are outlined in Table 2.

Table 2

Results of the Granger causality test

Null Hypothesis	F-Statistic	P-value
D(HTECH) does not Granger Cause D(IIPL)	0.80	0.47
D(IIPL) does not Granger Cause D(HTECH)	7.80	0.01
D(HTECH) does not Granger Cause D(FDI)	0.05	0.95
D(FDI) does not Granger Cause D(HTECH)	2.85	0.11
D(HTECH) does not Granger Cause D(RD)	0.33	0.72
D(RD) does not Granger Cause D(HTECH)	1.90	0.20

Note. The symbol D(X) is used to denote the first difference in the series X.
Source: calculated by S.A. Balashova, R.A. Abramian, N.V. Lazarev.

The presented results show that foreign investment, when accumulated, exerts a significant impact on the prediction of high-tech exports. However, the impact of research and development (R&D) and net current foreign direct investment (FDI) appears to be less pronounced.

The e Granger test indicate the presence of a cointegration relationship between high-tech exports and foreign investment, with foreign investment acting as an exogenous variable.

The Fully Modified Least Squares (FMOLS) is utilised for assessing the cointegration relationship between HTECH and IIPL in log form (6). Then the residuals (denoted as RESID) are obtained from this equation to estimate an Error Correction Model (ECM). The results are as follows.

$$\text{Log}\left(HTECH_t\right) = 0.67 \cdot \text{Log}\left(IIPL\right) + 16.9; \tag{6}$$

$$\Delta\text{Log}\left(HTECH_t\right) = 0.69 \cdot \Delta\text{Log}\left(IIPL_t\right) - 0.83 \cdot RESID_{t-1}. \tag{7}$$

The coefficient of cointegration equation (6) show that in a long-run a 1% increase in international investment is associated in 0.67% increase in export of high-tech products. The short-run impact of change in *IIPL* on *HTECH* is almost the same (0.69). The second term in equation (7) explains long-run gravitation towards the equilibrium relationship between the variables. A significant and negative coefficient implies a strong corrective force. It means that 83% of disbalance between current and equilibrium level is corrected.

Discussion

The study shows that foreign capital has had a strong impact on the dynamics of China's high-tech sector, not only in the early days but also today.

In the early stages of development in the 1980s, the growth of the high-tech industry was actively supported by open market reforms that focused on attracting foreign investment through special economic zones and lucrative joint venture agreements. However, it was after joining the World Trade Organisation in 2001 that the high-tech sector really began to grow. It is almost impossible to list all the foreign companies that have invested in China because of the sheer number and the difficulty of obtaining complete data. However, it is possible to highlight the largest and most notable investments.

- Intel was one of the first major investors in Chinese chip manufacturing. Its presence helped develop the Chinese semiconductor industry, although it now faces competition from local manufacturers and restrictions due to sanctions.
- Samsung also has significant manufacturing capacity in China and plays an important role in the supply of semiconductors and other electronic components.
- IBM was one of the first foreign investors in China's IT market. It provided enterprise solutions, consulting services and technology.
- Procter & Gamble opened its doors in China in 1988 and has since significantly increased its investment in the country.

- General Motors began manufacturing in China in 1997 and quickly became one of the largest automakers in the Chinese market.
- Although Apple was founded in 1976, it began actively expanding its business in China after the reforms, opening factories and stores.

Although China's economic growth rate has slowed from pre-COVID levels, its technology ecosystem remains a priority for international companies in a variety of sectors. Moderna and AstraZeneca, for example, are investing heavily in China's biotech and healthcare sectors. Moderna is building its pharmaceutical manufacturing plant with a hefty investment of US$3.6 billion, while AstraZeneca is investing US$1 billion to expand its pharmaceutical R&D centres. German chemical giant BASF has received final approval to build a Verbund plant in China's Guangdong province in 2022. The project is estimated to cost €10 billion. The site will be located in the city of Zhanjiang and is expected to be completed by 2030. In 2023, US biotech company Moderna Inc. will start building its first pharmaceutical plant in China with a total investment of RMB 3.6 billion ($501 million).

Will pharmaceuticals and biotech be the new driver of China's high-tech exports? Possibly. R&D investments in the industry are slow to pay off, but they do bring big profits to the pharmaceutical giants (Balashova, Volgina, 2021).

Following the adoption of MIC 2025, China has been even more active in increasing its R&D spending, both through increased intensity and through economic growth. New Chinese policy priorities are expected to shift the main driver of high-tech export growth from foreign capital to domestic R&D.

Conclusion

Recent observations indicate a positive trend in the export of high-tech products, with an average annual growth rate of 6% over the past 15 years. However, this trend is stochastic and does not mitigate the impact of short-term fluctuations. Consequently, a substantial decline in high-tech exports from China in 2023 may result in a protracted period of low growth, particularly under unfavourable external conditions.

While expenditures on R&D have shown a tendency to positively influence high-tech exports in the short term, international investment, particularly in the form of foreign direct investment, has a more significant long-term impact on high-tech exports from China. In the short term, a decline in net FDI inflows is likely to be balanced by an increase in R&D. However, in the long-run, the impact of the accumulated foreign investment is much greater.

Released in 2015, the "Made in China 2025" government initiative outlined a decade-long strategy aimed at modernising China's manufacturing infrastructure through accelerated development of ten high-tech sectors. While the initiative did not aspire to fully displace international investment, it sought to impose certain restrictions and regulations that would favour the development of the Chinese high-tech industry. The success of this initiative would result in China assuming a leadership position in new high-tech markets.

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