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Underpaid professors and world-leading firms: academic pay stagnation as a plausible force behind the flow of research talent into Korean industry

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Abstract

South Korea's semiconductor boom rests on the technological capability of its leading firms, and that capability was built by corporate researchers. This article argues that a key reason, and one that has received little attention, why so many of the country's ablest researchers built their careers in industry rather than in universities was the prolonged stagnation of academic pay. Since 2009 a government-led tuition freeze has cut off the main source of university revenue, and faculty pay has been the most direct casualty. Using official statistics, market data and published pay figures, the article shows that the real salary of full professors at private universities did not rise after 2015 and fell by about 12% between 2019 and 2024, while the average pay of employees at large firms grew by 4.3% a year in nominal terms. The premium full professors once earned over the average large-firm employee shrank from about 42% to about 7%, and executives at large firms, who are typically the same age as full professors, earned 3.4 to 6.6 times as much. Over the same years real business R&D expenditure rose by 87%, firms came to employ 72.7% of the country's researchers, and Korean firms captured about 83% of the global market for high-bandwidth memory. The article argues that pay deserves particular weight among the features of academic work because it was the one that changed most: job security, autonomy and prestige continued to favour universities, whereas the financial gap moved from rough parity to a multiple of academic pay. It concludes that raising academic pay should be a priority if Korea is to secure the flow of talent on which its industrial strength depends.

Introduction

South Korea is in the middle of an export boom. In June 2026 semiconductor exports reached USD 44.8 billion, a record 43.8% of all exports, and total monthly exports exceeded USD

100 billion for the first time (Dailian 2026). The Korea Development Institute expects the economy to grow by 3.2% in 2026, mainly because of the global semiconductor upturn (Korea Development Institute 2026). The immediate cause is plain: investment in artificial intelligence has created enormous demand for memory chips, and above all for high-bandwidth memory (HBM), the stacked DRAM used in AI accelerators.

Global demand, however, does not explain why so much of it has flowed to Korea. Every memory producer faced the same market. What distinguished Korean firms was that they could supply the products the market wanted, in volume and ahead of their competitors. In the second quarter of 2026 SK hynix and Samsung Electronics together accounted for 83% of global HBM revenue (Counterpoint Research 2026), and both firms were first to bring successive generations of the product to mass production (SK hynix 2026; Samsung Electronics 2026). This article starts from the premise that the root cause of the boom is this technological capability, and asks where it came from.

Capability of this kind is built by people. Designing and manufacturing advanced memory depends on large teams of experienced engineers and scientists working over many years, much of whose knowledge is tacit and specific to the firm. Korea's leading firms were able to assemble and keep such teams because, for a large number of highly able researchers, a corporate career became far more attractive than an academic one. This article argues that, among the factors behind this shift, pay played a central role that has been largely overlooked, and that it mattered more than changes in the research environment, prestige or job security. Since 2009 the government has pressed universities to freeze tuition, which is their main source of revenue. As recently as 2024, 166 of the 193 four-year universities kept tuition unchanged, and only in 2025 did a majority raise it (Ministry of Education and Korean Council for University Education 2024, 2025). Adjusted for consumer prices, average tuition in 2023 was about 20% below its 2011 level (Korean Council for University Education 2023), and by 2021 about three-quarters of private universities were running deficits (Hankook Ilbo 2023b). The most direct casualty was faculty pay, which at private universities has barely moved for more than a decade (Hankyung 2018; Seoul Economic Daily 2019; Hankook Ilbo 2023a; Hankyung 2025).

The article makes its case in three steps. It first documents how far academic pay has fallen behind, in real terms and relative to pay in large firms at the same career stage. It then shows how corporate research grew over the same period and how that growth translated into

Korean leadership in advanced memory. Finally, it argues that pay was a key factor in the allocation of research talent, on the grounds that it is the feature of academic careers that changed most, that the size of the change is large enough to matter, and that both the international literature and Korea's own history show researchers responding to pay in exactly this way. The evidence is descriptive and drawn from official statistics, market data and published pay figures; the argument is interpretive, and the article sets out the main objections to it.

Literature review

Technological capability and catch-up in Korean semiconductors

Korea's rise in semiconductors is one of the best-studied cases of technological catch-up. Kim (1997) describes how Korean firms moved from imitation to innovation through deliberate, crisis-driven learning inside the firm, and how Samsung's entry into memory chips relied on recruiting experienced engineers and on intensive in-house development. Mathews and Cho (2000) show how Korean and other East Asian firms built semiconductor industries by combining state support with aggressive corporate learning, and Lee and Lim (2001) argue that in memory chips, where the technological trajectory was relatively predictable, Korean firms were able not only to catch up but to leapfrog incumbents. A common thread in this literature is that the decisive capabilities were accumulated within firms, through their own research organisations, rather than acquired ready-made from outside.

The concept of absorptive capacity helps explain why this matters. Firms that invest in their own R&D are better able to recognise, assimilate and apply external knowledge (Cohen and Levinthal 1990). Academic research remains an important input to industrial innovation (Mansfield 1991; Cohen et al. 2002), but firms can only use it if they employ researchers capable of doing so. Industrial R&D is also a central driver of growth in endogenous growth theory (Aghion and Howitt 2009). The size and quality of a country's corporate research workforce is therefore a key determinant of whether it can turn a surge in global demand into domestic output and income.

Pay and the choice between academic and industrial careers

A long line of research treats the choice between an academic and an industrial research career as a trade-off between money and the non-pecuniary rewards of science. Academic science rewards priority and disclosure, while industrial research is organised around appropriation and secrecy (Dasgupta and David 1994). Scientists who value the freedom to choose their own problems and to publish appear willing to accept lower pay to do so. Stern (2004) found that biologists accepted substantially lower wage offers from firms that allowed them to publish, and Roach and Sauermann (2010) showed that doctoral students with a stronger taste for science were more likely to seek academic positions.

These preferences are not fixed, and the size of the pay gap matters at the margin. Sauermann and Roach (2012) reported that interest in academic careers declines over the course of doctoral training, while Agarwal and Ohyama (2013) found that scientists sort between academia and industry on both ability and preferences, with markedly different earnings paths in the two sectors. In a choice experiment with European researchers, Janger and Nowotny (2016) showed that salary, job security and research autonomy all influence which positions are attractive. Stephan (2012) and Ehrenberg (2003) both stress that the academic labour market responds to relative pay. The implication for this study is that when academic pay stagnates while corporate pay rises, more of the most capable researchers can be expected to build their careers in industry, and to stay there.

Academic pay, tuition regulation and the mobility of Korean researchers

Academic salaries vary widely across countries and depend heavily on how universities are financed (Altbach et al. 2012). Korean universities depend heavily on tuition, which makes up about 65% of revenue at most institutions (Lee et al. 2020), so faculty pay is unusually sensitive to tuition policy. Studies of tuition control suggest that caps and freezes are most effective when tied to state funding (Kim and Ko 2015), and this is the mechanism Korea adopted. Shin et al. (2014) trace the political origins of tuition restraint in Korea to student activism and the “half-tuition” campaigns of the 2000s, and Lee et al. (2020) found that tuition growth at private universities slowed markedly after 2011 while government subsidies expanded.

Research on the mobility of highly skilled workers shows that economic conditions play a central role in where scientists choose to work (Docquier and Rapoport 2012; Franzoni et al. 2012). Song (1997) documented how Korean scientists and engineers with American

doctorates returned home in large numbers once conditions in Korea improved, with economic factors dominating their decisions. More recent work suggests a partial reversal, with Korean doctorate holders in the United States delaying their return (Song and Song 2015), although family and cultural ties remain decisive for many (Lee and Kim 2010). Knowledge that is tacit and embodied in people moves with them (Zucker et al. 1998), which is why the question of where researchers work matters for national capability. What has not been examined is how the domestic choice between academia and industry has shifted in Korea, and how that shift relates to the capability of Korean firms.

Analytical framework: why pay matters

A researcher choosing between a university and a firm weighs a bundle of attributes. Universities have traditionally offered security of tenure, freedom to choose research problems, the right to publish, and social prestige; firms have offered higher pay, larger research budgets and the chance to see work turned into products (Dasgupta and David 1994; Stern 2004; Roach and Sauermann 2010). A change in the share of talent going to each sector must be explained by a change in some part of this bundle. The framework used here therefore asks which attributes changed over the period in which Korean firms built their lead, and by how much.

Three considerations point to pay. First, the non-pecuniary advantages of academia did not disappear. Tenure, academic freedom and the prestige of a professorship remain features of Korean universities, and many of the deteriorations that professors complain of, such as crumbling laboratories and the replacement of full-time posts by contract staff, are themselves consequences of the same financial squeeze that froze pay (Hankook Ilbo 2023a). Second, the change in pay was very large. A generation ago a senior professor earned roughly as much as a manager in a large firm (Kyosu Shinmun 2026); today a full professor earns little more than the average employee of a large firm and a fraction of what executives of the same age receive. Third, pay is the attribute to which researchers are known to respond most reliably at the margin (Agarwal and Ohyama 2013; Janger and Nowotny 2016), and Korean scientists have done so before: when economic conditions in Korea improved in the 1980s, scientists who had stayed in the United States for economic reasons came home in large numbers (Song 1997). If a large and sustained change in pay coincides with a large shift in the allocation of talent, while the other attributes of the choice are broadly stable or are

themselves products of the same financial pressure, pay is the most plausible candidate for a central explanation.

Methods

Research design

The study uses a descriptive, longitudinal design. It does not estimate the causal effect of academic pay on researchers' career decisions or of corporate research on the boom, which would require linked data on individual careers that are not publicly available. Instead it assembles evidence on three sets of indicators and examines whether they are consistent with the argument set out above: indicators of corporate technological capability, indicators of the growth and location of the research workforce, and indicators of the relative pay of academic and corporate researchers. The observation window runs from 2012 to 2026, determined by the years for which comparable figures could be found.

Data sources

Corporate technological capability is measured by market position in HBM, taken from quarterly revenue shares published by Counterpoint Research (2026), and by the dates at which firms began mass production of successive HBM generations, taken from company announcements (SK hynix 2026; Samsung Electronics 2026). Business-sector R&D expenditure and the number of researchers by sector come from the national Survey of Research and Development, which the Ministry of Science and ICT and the Korea Institute of S&T Evaluation and Planning conduct every year following the OECD Frascati Manual (Ministry of Science and ICT and KISTEP 2014–2025; Korea Institute of S&T Evaluation and Planning 2021; Ministry of Science and ICT 2025).

Average salaries of full professors at private four-year universities are Ministry of Education figures. The ministry does not publish them routinely, but they have been released to members of the National Assembly or reported in the press for 2013, for 2015–2019 and for 2024 (Veritas Alpha 2014, 2017; Korea University News 2015; Seoul Economic Daily 2019; Hankyung 2025). Private universities account for most Korean four-year institutions and are the most dependent on tuition. Pay in large firms is taken from analyses of statutory business reports by two corporate research firms, CEO Score and Leaders Index, as reported in the press (Seoul Shinmun 2013; Financial Sinmun 2021; Seoul Economy News 2025; Sisa

Journal 2026). These cover listed companies among the 500 largest firms by sales and report average pay for employees and for unregistered executives, that is, executives who are not board members. The number of companies covered varies between years (211 to 366). Supplementary Table S1 lists every figure used, with its source.

Measures

Nominal values were converted to constant 2024 prices using a consumer price index (CPI) constructed by chaining the annual inflation rates published by Statistics Korea (Statistics Korea 2026); the rates are listed in Supplementary Table S2. The real value in year t is the nominal value multiplied by the ratio of the 2024 CPI to the CPI in year t, and real series are expressed as indices with 2013 = 100. Average annual growth rates are compound rates. The relative position of full professors is measured by the ratio of their average pay to the average pay of large-firm employees, and the gap with executives by the ratio of executive pay to professorial pay in the same year. No values were interpolated for missing years.

Results

Stagnation of academic pay

The central fact of the period is that the pay of senior academics stopped growing. The nominal average salary of full professors at private universities was KRW 84.8 million in 2013 and KRW 95.7 million in 2015. After that it hardly moved: it rose by about 2% between 2016 and 2018, less than the 3.4% rise in consumer prices over the same two years (Seoul Economic Daily 2019), and by only 0.8% between 2019 and 2024, when it reached KRW 101.4 million (Hankyung 2025). In real terms, pay was essentially unchanged from 2015 to 2019 and then fell by about 12% between 2019 and 2024 (−2.6% a year), ending slightly below its 2013 level (Table 1; Fig. 1). The fall rests on the 2019 and 2024 observations alone, because no figures were published for 2020–2023. The apparent rise between 2013 and 2015 should be treated with caution, because some institutions reported zero values in 2013. National universities, whose staff costs are funded largely by the state, raised pay steadily, and by 2018 their full professors earned more on average than those at private universities (KRW 104.2 million against KRW 98.9 million) (Seoul Economic Daily 2019). Professors interviewed by the press have described annual raises of 0.5–2% since the freeze began (Hankook Ilbo 2023a), and as early as 2018 it was reported that most universities had frozen faculty salaries since 2011 (Hankyung 2018).

Table 1 Academic pay and business-sector R&D expenditure in South Korea, 2013–2024.

Year	Full-professor salary, private universities (KRW million, nominal)	Real salary index (2013 = 100)	Business-sector R&D (KRW trillion, nominal)	Real R&D index (2013 = 100)	CPI (2024 = 100)
2013	84.79	100.0	46.56	100.0	81.5
2015	95.73	110.7	51.14	107.7	83.1
2016	96.70	110.7	53.95	112.5	83.9
2017	96.31	108.2	62.56	128.0	85.5
2018	98.90	109.5	68.83	138.7	86.8
2019	100.62	110.9	71.51	143.5	87.2
2020	–	–	73.60	147.0	87.6
2021	–	–	80.81	157.5	89.8
2022	–	–	89.42	165.8	94.4
2023	–	–	94.3	168.8	97.8
2024	101.39	97.4	106.70	186.7	100.0

– no official figure published. Salaries are Ministry of Education averages for full professors at private four-year universities, as reported by Veritas Alpha (2014, 2017), Korea University News (2015), Seoul Economic Daily (2019) and Hankyung (2025); the 2013 figure may be understated because some institutions reported zero values. Business-sector R&D is from the national R&D survey (Ministry of Science and ICT and KISTEP 2014–2025; Ministry of Science and ICT 2025); the 2023 value is rounded. Real values are deflated with a CPI series constructed from Statistics Korea's annual inflation rates (Statistics Korea 2026).

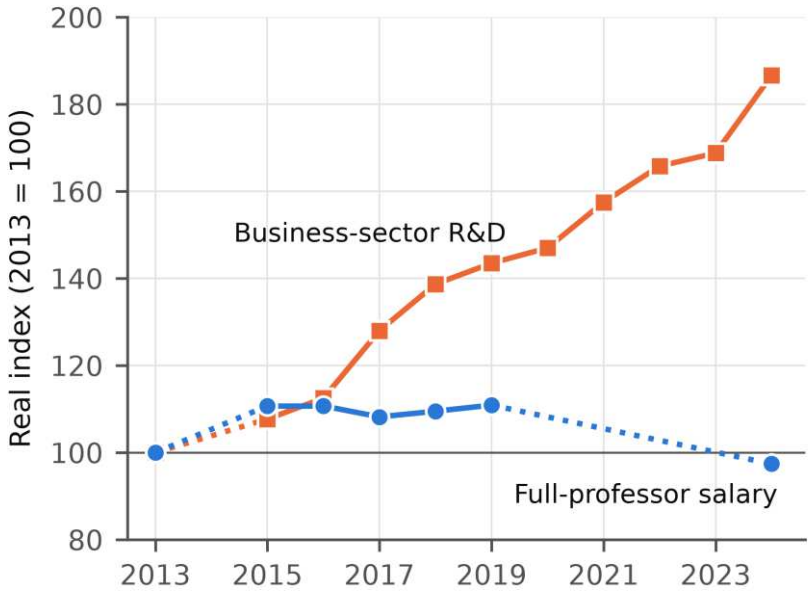

Fig. 1 (see Figure legends)

Academic and corporate pay

The more direct measure of the choice facing researchers is the pay of people who could plausibly have followed the other path. Promotion from first appointment to full professor typically takes about ten years in Korean universities (the author's observation over 25 years as a faculty member at Hanyang University; no systematic source was found), which places most full professors in their late forties or fifties. The average age of executives at the 100 largest firms by market capitalisation was 54.2 years in 2026 (CEO Score 2026). The two groups are therefore at a similar stage of their careers.

The gap between them is large. In 2019 unregistered executives at large firms were paid on average KRW 342.7 million, about 3.4 times the average salary of full professors at private universities (Financial Sinmun 2021). At Samsung Electronics the average for unregistered executives was KRW 671 million in 2024, about 6.6 times the professorial average in the same year (Seoul Economy News 2025; Fig. 2b). At SK hynix, total annual pay for senior staff was reported in 2026 to be in the region of KRW 350 million, combining a base salary of about KRW 100 million for department heads with profit-sharing bonuses of KRW 100–200 million (Asia Economy 2026).

The gap has also widened over time. The average pay of employees at large firms rose from KRW 59.8 million in 2012 to KRW 102.8 million in 2025 (Seoul Shinmun 2013; Sisa Journal 2026), an average nominal growth of 4.3% a year, while full-professor pay rose by 1.6% a year in nominal terms between 2013 and 2024 (a slightly different window, because no professor figure exists for 2012 or 2025). The premium of full professors over the average large-firm employee therefore fell from about 42% to about 7% (Table 2; Fig. 2a). Because executive pay at these firms is a multiple of employee pay, about 4.4 times for unregistered executives in 2020 (Financial Sinmun 2021), the absolute gap between full professors and executives has almost certainly grown as well. A longer view points the same way: in 1992 a 45-year-old full professor earned about 10% less than a manager at a large firm, whereas by 2025 a 50-year-old associate professor at a national university was estimated to earn about 19% less than a department head at a large firm (Kyosu Shinmun 2026).

Table 2 Pay of full professors and of employees and executives at large firms in South Korea (KRW million, nominal).

Year	Full professors, private universities	Employees, large firms	Unregistered executives, large firms	Professor pay ÷ employee pay
2012/2013	84.79 (2013)	59.8 (2012)	–	1.42
2019	100.62	78.8	342.7	1.28
2020	–	81.2	358.9	–
2024	101.39	95.1	–	1.07
2025	–	102.8	–	–

– no comparable figure found. Professor salaries as in Table 1. Large-firm figures are averages for listed companies among the 500 largest firms by sales, compiled from business reports by CEO Score and Leaders Index: 366 firms for 2012 (Seoul Shinmun 2013), 294 firms for 2019–2020 (Financial Sinmun 2021), 284 firms for 2024 (Seoul Economy News 2025) and 211 firms for 2025 (Sisa Journal 2026). Employee averages for 2024 and 2025 exclude unregistered executives. Because the samples differ, the series are indicative rather than strictly comparable.

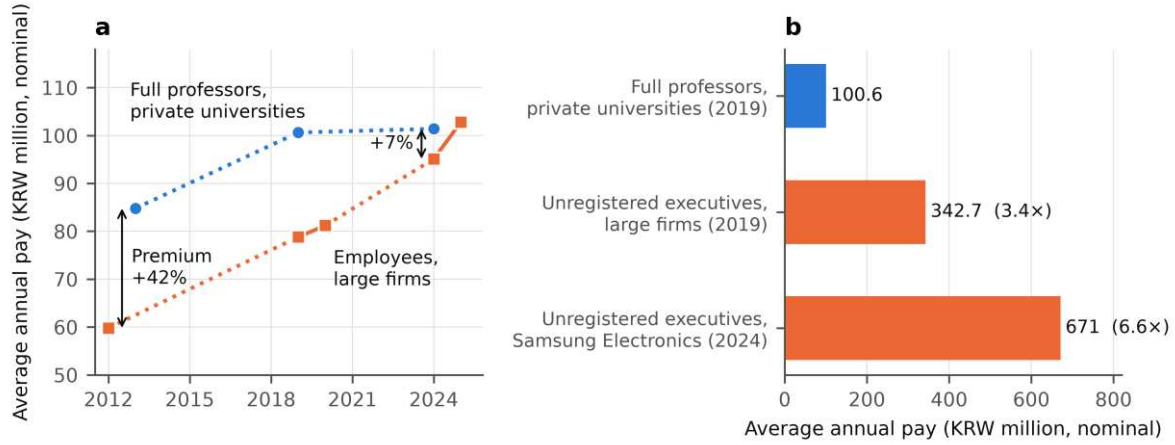

Fig. 2 (see Figure legends)

Growth of corporate research

While academic pay stagnated, corporate research grew rapidly. Real business-sector R&D expenditure rose in every year for which data are available and in 2024 was 87% above its 2013 level, an average real growth rate of 5.8% a year (Table 1; Fig. 1). In nominal terms it reached KRW 106.7 trillion in 2024, 81.4% of all R&D performed in Korea (Ministry of Science and ICT 2025). The growth was concentrated in the largest firms: the ten largest companies by sales raised their R&D spending from KRW 35.9 trillion in 2023 to KRW 50.1 trillion in 2024 (Ministry of Science and ICT 2025).

The research workforce followed the money. In 2024 firms employed 447,351 researchers, 72.7% of the national total, while universities employed 120,974, or 19.7% (Ministry of Science and ICT 2025). In 2020 the corresponding figures had been 401,116 (71.9%) and 115,924 (20.8%) (Korea Institute of S&T Evaluation and Planning 2021). Over those four years the number of researchers in firms rose by about 46,000 and the number in universities by about 5,000. The ten largest firms alone added 9,455 researchers in 2024, reaching 79,622 (Ministry of Science and ICT 2025).

Market leadership in advanced memory

The result of this expansion is visible in the market that has driven the boom. In the second quarter of 2026 SK hynix held 50% of global HBM revenue and Samsung Electronics 33%, leaving 18% for Micron, the only other significant producer (Counterpoint Research 2026). SK hynix's lead reflects more than a decade of development: the company developed the first HBM in 2013 and was the first to mass-produce the fourth generation, HBM3, in June 2022 (Baek 2023). It held 62% of HBM shipments in the second quarter of 2025, and in September 2025 became the first company to establish mass production of HBM4, the sixth generation of the product (SK hynix 2026). Samsung Electronics began shipping mass-produced HBM4 in February 2026 (Samsung Electronics 2026) and has since narrowed the gap, raising its revenue share from 21% to 33% between the first and second quarters of 2026 (Counterpoint Research 2026). In the first quarter of 2025 SK hynix also overtook Samsung in the overall DRAM market, with a 36% share against 34%, the first change of leadership since 1992 (Global Economic 2025). Competition between the two Korean firms has thus kept both at the technological frontier.

Discussion

The evidence is consistent with the argument that the stagnation of academic pay was an important force behind the flow of research talent into Korean industry, although the descriptive design cannot establish that it was the cause. The magnitude of the change is the first reason. Within a single academic career, the relationship between a professor's income and that of a contemporary in industry has been transformed. In 1992 a senior professor was paid roughly as much as a manager at a large firm (Kyosu Shinmun 2026). By 2024 a full professor at a private university earned only 7% more than the average employee of a large

firm and between a third and a sixth of what executives of the same age were paid. No other attribute of the academic career changed on anything like this scale.

The timing is the second reason. Real academic pay stopped rising around 2015 and fell sharply after 2019. These were the years in which business R&D almost doubled in real terms, firms absorbed most of the growth in the national research workforce, and Korean firms built and extended their lead in high-bandwidth memory. The researchers who designed successive generations of HBM were, for the most part, people at the stage of their careers when an academic post would once have been a natural and financially reasonable next step. For many of them it no longer was.

The third reason is that the alternatives explain less. The non-pecuniary advantages of academic life, including tenure and research freedom, remained in place, and the literature suggests that researchers are willing to pay a considerable price for them (Stern 2004). What changed was the price. Once the pay gap grew from modest to several-fold, the academic premium on freedom became too expensive for many to afford. The deterioration of research conditions in universities reinforced the effect, but it was driven by the same financial squeeze as pay itself (Hankook Ilbo 2023a). Korean history offers a parallel: in earlier decades the balance between staying abroad and returning home was decided mainly by economic conditions (Song 1997), and today the same logic is drawing Korean professors to universities in Hong Kong that offer several times their salary (Hankyung 2025).

Seen in this light, the current boom has an uncomfortable foundation. The researchers who built Korea's corporate capability were trained in universities, and the tacit knowledge they now carry was accumulated in firms (Zucker et al. 1998; Kim 1997). In effect, the tuition freeze subsidised Korean industry by making it cheap for firms to attract and keep talent that universities could no longer afford to compete for. That subsidy cannot be drawn on indefinitely. If academic pay continues to fall behind, universities will struggle to recruit the people who train the next generation, and the supply of researchers on which firms depend will eventually weaken.

Three objections deserve a response. The first is that the boom reflects global demand and memory prices rather than anything specific to Korea, and the Korea Institute for Industrial Economics and Trade has indeed warned that record exports owe much to price rises (Etnews 2026). But demand and prices were common to all producers; what allowed Korean firms to capture the demand was their capability, which is the outcome this article seeks to explain.

The second is that firms' own strategies, not academic pay, determined their success. Corporate strategy clearly matters, but no strategy in memory can be executed without a large, experienced research workforce, and the relative attractiveness of corporate careers determined how easily that workforce could be assembled and retained. The third is that the aggregate data cannot show individual decisions, and data on new science and technology doctorates for 2017–2021 do not show a rising share taking first jobs in firms (Korea Institute of S&T Evaluation and Planning 2023). This suggests that the effect of pay worked mainly on mid-career decisions and on retention, which is precisely where the gap between academic and corporate pay is largest. A direct test would require linked data on individual careers, and once such data are available, time-series methods such as vector autoregressions (Sims 1980) could be used to examine the lead–lag relationships between academic pay, corporate pay and research activity.

Several limitations should be kept in mind. First, the design is descriptive: the data are aggregates and cannot show individual career decisions, so the argument rests on consistency between the pay, workforce and market indicators, not on a causal estimate, and other factors such as research funding, working conditions and global demand are not controlled for. Second, the salary series is sparse. Official figures for full professors at private universities exist for only seven of the twelve years between 2013 and 2024 (2013, 2015–2019 and 2024); the 2013 figure may be understated because some institutions reported zero values; and the 2019–2024 fall rests on two observations. Third, the salary and large-firm pay figures come from press reports of Ministry of Education data and of analyses by CEO Score and Leaders Index, not from primary tables, and the large-firm samples differ across years (211 to 366 firms), so the pay ratios are indicative rather than strictly comparable. Fourth, average pay hides differences between fields and institutions, and pay in strategic fields such as engineering may differ from the all-field average. Fifth, the comparison of professors with executives assumes that the two groups are at a similar career stage, which is supported by average age but not by individual-level matching.

Conclusions

Korea's semiconductor boom is usually explained by global demand and corporate strategy. This article has argued that behind both lies a less visible factor: for more than a decade, Korean universities have been unable to pay their senior researchers enough to compete with industry, and this probably played an important part in determining where the country's

research talent went. The real pay of full professors at private universities stopped rising around 2015 and has fallen by about 12% since 2019; their premium over the average employee of a large firm has almost vanished; and executives of the same age earn several times as much. Over the same years firms nearly doubled their real research spending, came to employ almost three-quarters of the country's researchers, and took about 83% of the world market for high-bandwidth memory.

If this argument is accepted, a policy implication follows. Raising academic pay should be treated not as a concession to universities but as an investment in the supply of talent on which Korean industry depends. Tuition regulation should be reformed so that it no longer holds down faculty salaries, and public funds outside tuition should be used to bring the pay of senior researchers in strategic fields back into a reasonable relationship with pay in industry. The government should also publish faculty pay data regularly and in a consistent form, so that the relationship between academic and corporate pay can be monitored. A country whose prosperity rests on the ability of its researchers should not leave the pay of those who train them to be set by a tuition freeze.

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Figure legends

Fig. 1 Real salaries of full professors and business-sector R&D expenditure in South Korea, 2013–2024. Indices in constant 2024 prices (2013 = 100) for the average salary of full professors at private four-year universities (circles) and business-sector R&D expenditure (squares). Markers show years with official figures; solid lines join consecutive years and dotted lines bridge years without data. Sources are listed in Table 1.

Fig. 2 Pay of full professors compared with pay at large firms in South Korea. a Average annual pay of full professors at private four-year universities and of employees at large firms (KRW million, nominal); arrows mark the professors' pay premium in 2012/2013 and 2024. b Average annual pay of full professors at private universities (2019), of unregistered executives at large firms (2019) and of unregistered executives at Samsung Electronics (2024); multiples are relative to the professorial average of the same year (KRW 100.6 million in 2019 and KRW 101.4 million in 2024). Large-firm samples differ across years. Sources are listed in Table 2.

Data availability

All data analysed in this study are publicly available aggregate figures. The compiled dataset (professor salaries, large-firm employee and executive pay, business-sector R&D expenditure, researcher counts, HBM market shares and the CPI series), the variable definitions, the transformations applied (CPI deflation, indices with 2013 = 100, compound growth rates and ratios) and the Python script that reproduces every derived figure in the text and in Tables 1 and 2 are available at https://github.com/ooklee-sudo/fluffy-

meme/tree/main/pay_stagnation and in Supplementary Tables S1 and S2. The primary sources are the published reports cited in the article. No restricted, personal or individual-level data were used, and there are no obstacles to sharing.

Author contributions

O.L. conceived the study, compiled and analysed the data, and wrote the manuscript.

Competing interests

The author declares no competing interests.

Ethical approval

Ethical approval was not required as the study did not involve human participants.

Informed consent

Informed consent was not required as the study did not involve human participants.