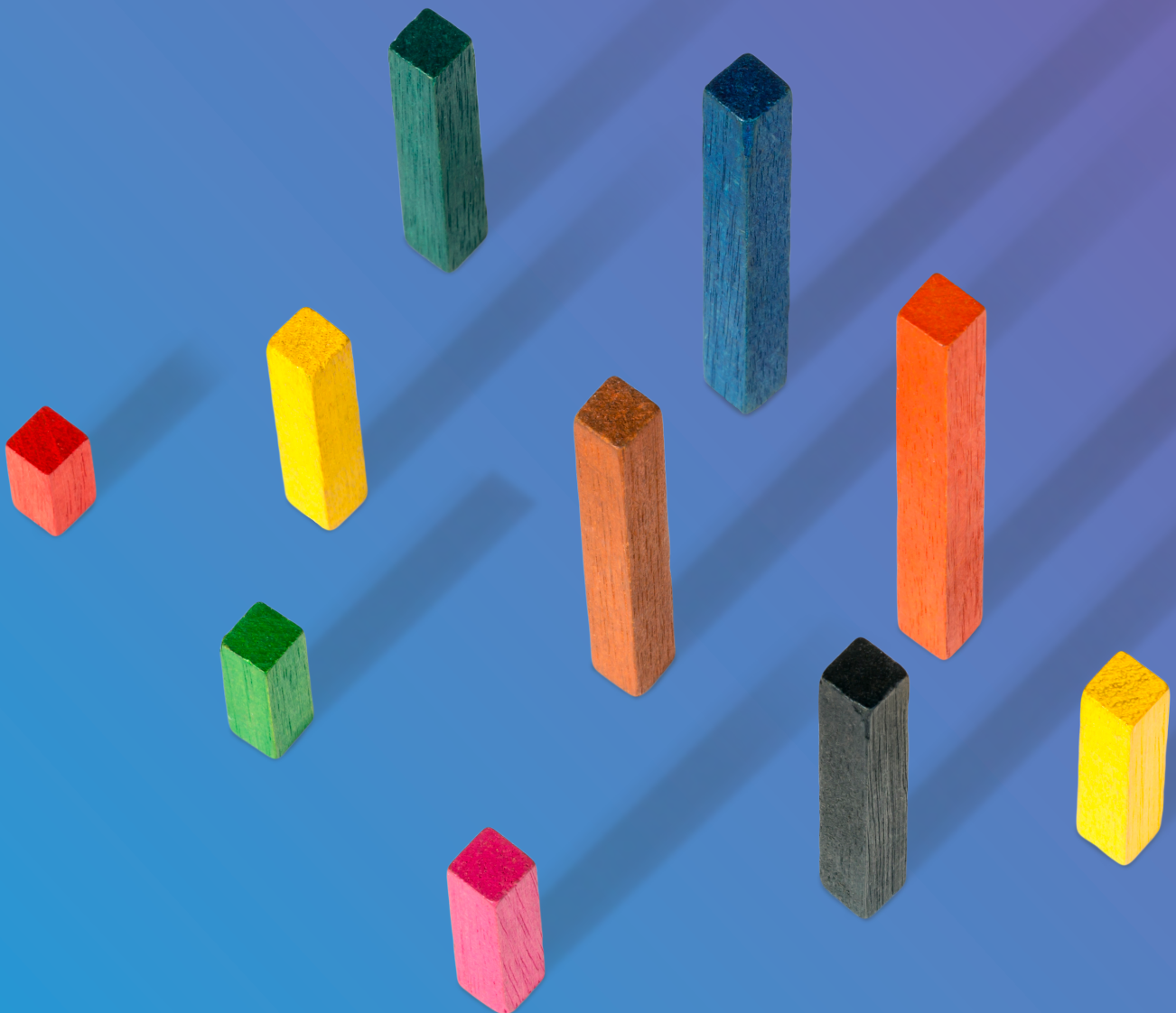


The truth about pay in the high-technology industry

An examination of high-tech pay practices, including variance within the industry and across organizations



Companies of all sizes and industries want to know how and why high-tech companies pay their people what they do. One of the main reasons for this interest is that companies outside the high-tech industry want to know how to pay their own tech workers. There's an air of mystery around pay practices in high tech, and leaders are curious about variations in pay for performance, location, job types and job levels.

Our objective in this study was to separate theory from reality and understand a few basic questions:

- What are the *real* reasons underpinning pay practices at high-tech organizations?
- How do pay drivers vary from segment to segment (for example, hardware versus e-commerce)?
- How much cross-company variation is there? (For instance, does pay for performance hold true across all types of tech?)

The dialogue about pay practices in high tech typically focuses on job-specific case studies or high-level trends. In sharing our findings, we aim to help your organization make better fact-based decisions about what to pay your tech workers.

Tech companies can use this research to compare their pay practices to others in their industry. Organizations looking to tech as an example can understand what really happens — beyond the theories and anecdotes.



About the data

We built regression models that explain variation in base salary and total direct compensation by controlling for various job and employee factors. We used the Mercer | Comptrix database for our research. The data include information such as an employee's job level, type of work, tenure and performance with a company, and pay.

The data architecture is standardized across the database, meaning that an entry-level professional in industrial design means the same thing across companies. This standardized architecture allowed us to conduct company-level analysis and make cross-company comparisons and resulted in the high explanatory power of our models.

We included only US workers who were actively employed, were not expatriates, and had general experience (proxied by age) and tenure information. The result was a dataset that included about 800,000 records. Additionally, we show segment-level effects only where there are at least five companies in the dataset.

The data models and why they're useful

We modeled the data in three ways for three different purposes:

1. Industry-level analysis

This approach shows us how each pay driver (for example, tenure, location or performance) is related to pay, on average, for all high-tech industry employees.

2. Segment-level analysis

This approach tells us the estimated relationships between the drivers and pay in 11 segments: aerospace/defense, computer/hardware systems, consumer technology, electronics, internet/e-commerce, networking, professional services/outourcing, semiconductor/chip, software/SaaS, telecommunications and other.

3. Company-level analysis

This approach shows the relationship between a pay driver and pay for each company included in the Comptryx dataset.

The first model is most useful when thinking about employees who are mobile across different segments. The second model is most beneficial for comparing geographic, general experience, tenure or performance pay differences across one segment at a time. The third model is most helpful in considering how different companies reward for factors such as experience, tenure, top performance, job level and location.





Industry-wide pay variation in high tech

The industry-wide approach gives us averages within a single labor market for all high-technology industry employees.

Overall, the statistically significant pay drivers for both base pay and total direct compensation (TDC) are age (a proxy for general experience), tenure (company-specific experience), performance, promotion, FLSA status, segment, location, level and function.

As Figure 1 shows, every five years of general experience increases a high-tech employee's base pay by 1% and their TDC by 0.6%. The pay-tenure relationship (for every five years of tenure) varies from -3% to 3% depending on the segment, averaging to almost zero: a 0.1% decrease in base pay and a 0.3% decrease in TDC.

These estimates suggest that general experience is more critical than company-specific experience for high-tech employees' pay and human capital. They also may reflect tech workers gaining significant increases in their pay through career transitions and job-hopping.

Figure 1. Industry-wide estimates of pay drivers: General experience, tenure, promotion, performance

Variable	Base effect	TDC effect
General experience (proxied by age): +5 years	1.0%	0.6%
Tenure: +5 years	-0.1%	-0.3%
Promotion received	-4.3%	-3.1%
Top performer*	1.9%	3.6%

* Estimates are from sample companies for which all employees' performance measures are reported.

Recently promoted employees are often paid at the lower end of that level's pay range, giving them room to grow within the level. The smaller gap for TDC may be because promoted employees receive larger amounts of bonus pay compared to other employees.

As you might expect, top performers receive higher pay than non-top performers, and the top performance premium is larger for TDC — as performance is often tied to bonus pay.

Average pay also varies significantly across segments, as shown in Figure 2. The difference between software/SaaS and other segments is generally wider for TDC, suggesting that the software/SaaS segment pay structure puts more weight on bonus programs than others.

Figure 2. Segment differences in average pay level compared to software/SaaS

Segment (versus software/SaaS)	Base pay effect	TDC effect
Aerospace/defense	-0.2%	-12.8%
Computer/hardware systems	-3.8%	-8.9%
Consumer technology	1.2%	-5.6%
Internet/e-commerce	-0.8%	-3.3%
Other	-0.5%	-8.3%
Professional services/outsourcing	-6.2%	-17.7%
Semiconductor/chip	5.4%	7.1%
Telecommunications	-7.2%	-14.2%

We chose to look at geographical variation in pay against the San Francisco Bay Area, where most tech employees are located. Both base pay and TDC are higher in the Bay Area — though not by much as you might expect. As Figure 3 shows, the geographic base pay differences range from only 6% in Seattle/Tacoma to 21% in Austin. However, the TDC pay differences are wider overall, possibly reflecting higher long-term incentives for jobs in the Bay Area.

Figure 3. Geographic differences in average pay level compared to the San Francisco Bay Area

Location (versus Bay Area)	Base pay effect	TDC effect
Seattle	-5.6%	-4.3%
New York	-6.5%	-11.7%
Los Angeles	-8.7%	-12.2%
Washington, DC	-10.4%	-16.3%
Chicago	-10.7%	-14.9%
Portland	-10.9%	-13.4%
Atlanta	-13.3%	-18.0%
Boston	-13.7%	-18.6%
Dallas	-16.1%	-21.1%
Austin	-20.5%	-24.7%



Career level has the expected effect on pay. Figure 4 shows comparisons in total direct compensation between the most populated career level, P4 (a professional with mastery in a discipline), and other job levels. This shows that although the most junior professionals make

less than the most junior managers, the most senior professionals can make more than the most senior managers. Senior individual contributors’ ability to earn more than senior managers is a unique feature of the high-tech industry that our modeling validates.

Figure 4. Differences in average TDC compared to level P4

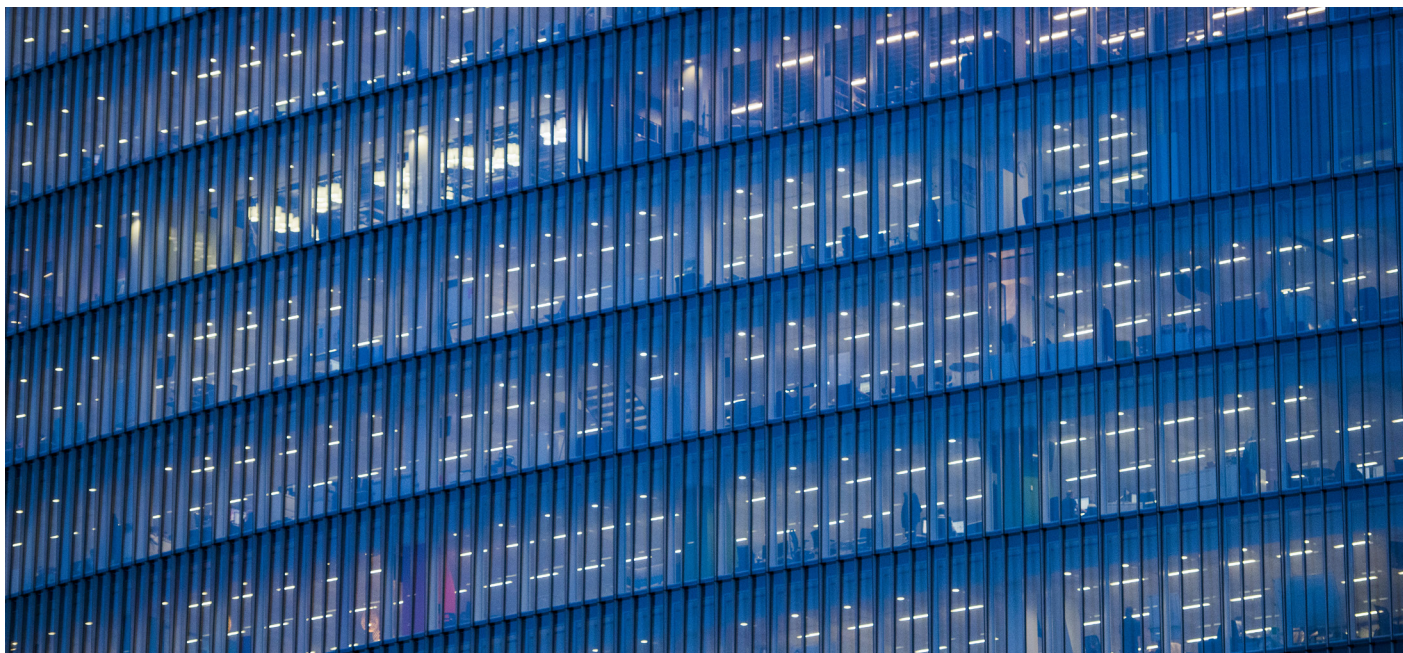


- ▼

 - S1 Support — associate
 - S2 Support — proficient
 - S3 Support — skilled
 - S4 Support — advanced
 - S5 Support — specialist
- ▼

 - P1 Professional — entry
 - P2 Professional — developing
 - P3 Professional — proficiency
 - P4 Professional — mastery
 - P5 Senior professional — expert
 - P6 Senior professional — advisory
 - P7 Senior professional — strategist
 - P8 Senior professional — fellow
- ▼

 - M1 Supervisor
 - M2 Entry manager/senior supervisor
 - M3 Manager
 - M4 Senior manager
 - M5 Director
 - M6 Senior director/associate vice president



Segment-specific pay variation in high tech

The segment-specific approach looks at the different labor markets for each segment. We compared the different ways that level, job function and geographic location related to pay across segments.

Base pay

Figure 5 shows the effects of general experience, tenure and performance on base pay. The general experience effect is similar across segments, suggesting that general experience is rewarded similarly across the tech industry.

However, tenure effects range from -1.6% to 1.4% after controlling for all other variables. Five out of 11 industries have a negative pay-tenure relationship, whereas the remaining six have a positive one. This suggests that in some segments, such as software/SaaS and internet/e-commerce, employees can earn higher pay by changing companies.

The pay-for-performance link is strong and more extensive than the general experience and tenure effects in almost all segments.

Figure 5. Differences in base pay based on general experience, tenure and performance within each segment

Segment	General experience (proxied by age: +5 years)	Tenure (+5 years)	Top performer (versus non-top performer)
Professional services/outsourcing	1.4%	-1.1%	N/R
Computer/hardware systems	1.5%	-1.1%	3.0%
Software/SaaS	2.0%	-1.6%	2.9%
Telecommunications	1.7%	0.3%	N/R
Semiconductor/chip	1.2%	0.2%	2.4%
Aerospace	1.1%	0.6%	3.8%
Internet/e-commerce	1.8%	-0.4%	3.1%
Consumer technology	1.8%	-0.3%	1.5%
Other	0.9%	1.4%	3.0%

* N/R denotes an effect with fewer than five companies, which is not reported. Results are not reported for segments with fewer than five companies.

Most sub-industries pay their employees less in every location relative to the San Francisco Bay Area, as you can see in Figure 6. One exception is consumer technology, which pays Atlanta employees 5.3% more than Bay Area employees, all else equal.

Figure 6. Location effects for base pay for selected segments, compared to the Bay Area

Segment	Computer/ hardware systems	Software/ SaaS	Professional services/ outsourcing	Internet/ e-commerce	Consumer technology	Semiconductor/ chip
Seattle	-5.1%	-0.3%	-9.2%	-2.4%	-0.1%	-6.8%
New York	-3.7%	-4.5%	-1.7%	-5.4%	-0.8%	-13.5%
Los Angeles	-5.5%	-6.5%	-6.0%	-6.6%	-8.6%	-6.2%
Washington, DC	-5.0%	-6.8%	-5.3%	-7.7%	-7.8%	-5.8%
Chicago	-8.8%	-9.5%	-10.0%	-11.3%	-0.3%	-2.4%
Portland	-11.8%	-11.6%	-10.8%	-12.1%	-3.3%	-13.1%
Atlanta	-17.1%	-12.8%	-11.8%	-11.5%	5.3%	-7.5%
Boston	-12.6%	-9.6%	-12.1%	-13.7%	-5.2%	-10.1%
Dallas	-12.7%	-10.3%	-12.8%	-14.0%	-4.7%	-14.5%
Austin	-21.1%	-12.9%	-19.3%	-21.4%	-9.8%	-12.0%

Total direct compensation

General experience (proxied by age) had positive effects on TDC in all segments, ranging from 0.8% to 1.8% (see Figure 7). The biggest differences compared with base pay are in software/SaaS (2.0% for base, 1.3% for TDC) and internet/e-commerce (1.8% for base, 1.3% for TDC). The weaker relation between general experience and pay for TDC (compared to base pay) shows that experience is less rewarded for bonus pay.

Tenure had negative effects on TDC in five segments and positive effects in six, just as with base pay. As expected, the range of effects is larger than that for bonus pay: -2.4% to 2.5%.

As you might expect, performance generally had larger effects on TDC than on base pay, ranging from 1.7% to 7.6%. However, in the computer/hardware systems, semiconductor/chip and software/SaaS segments, performance affects TDC by more than 6% — double its effect on base pay.



Figure 7. Differences in TDC based on general experience, tenure and performance within each segment

Segment	General experience (proxied by age: +5 years)	Tenure (+5 years)	Top performer (versus non-top performer)
Professional services/outsourcing	1.4%	-1.2%	N/R
Computer/hardware systems	1.5%	-1.4%	7.6%
Software/SaaS	1.3%	-2.4%	6.2%
Telecommunications	1.6%	0.4%	N/R
Semiconductor/chip	0.9%	0.9%	6.4%
Aerospace	1.1%	0.7%	4.6%
Internet/e-commerce	1.3%	2.5%	2.0%
Consumer technology	1.8%	-0.1%	1.7%
Other	0.8%	1.6%	4.5%

* N/R denotes an effect with fewer than five companies, which is not reported.

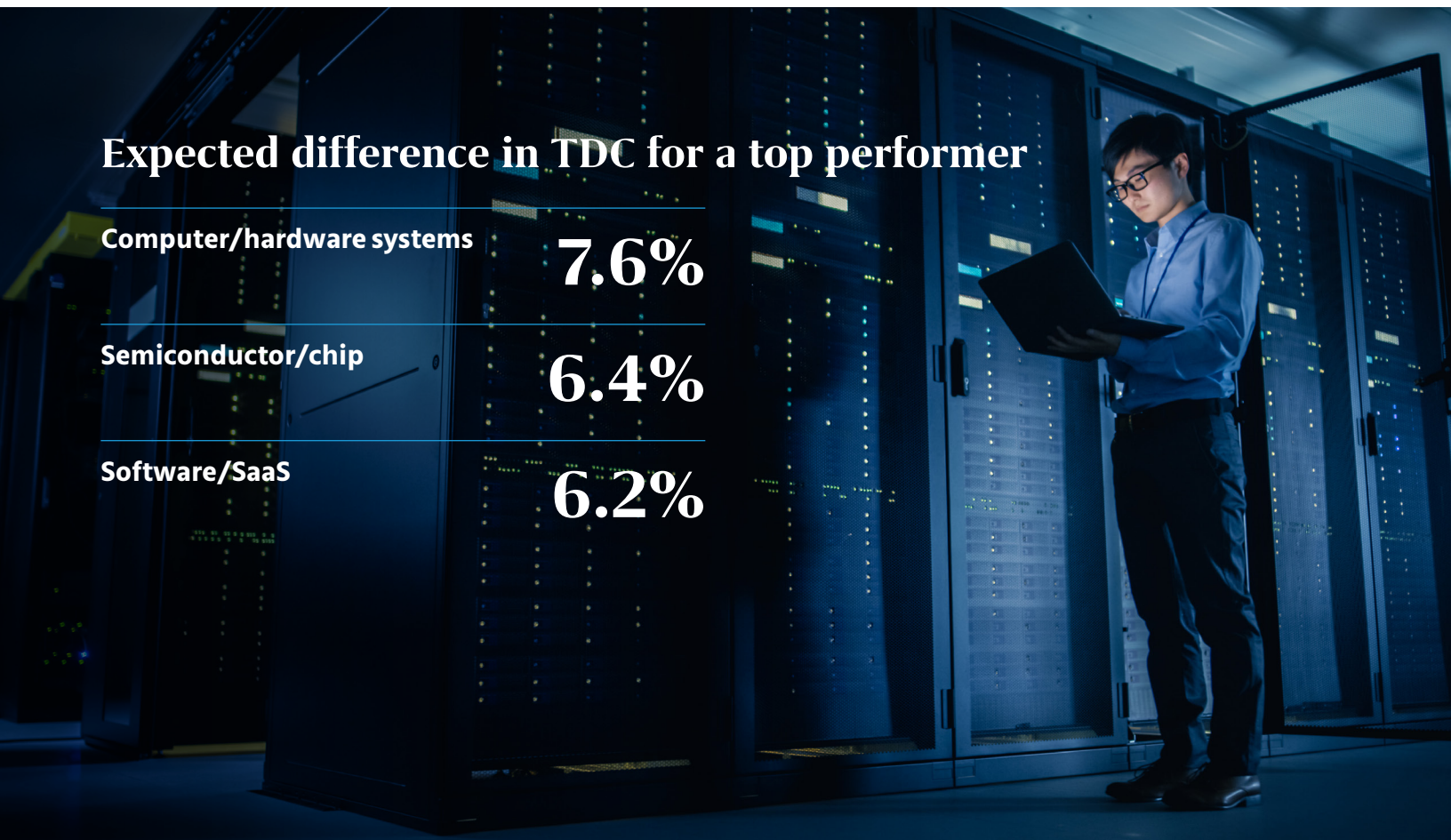
Computer/hardware systems, semiconductor/chip and software/SaaS segments are segments where performance is highly rewarded in the form of bonus pay: Performance affects TDC twice as much as it affects base pay in these segments.

Expected difference in TDC for a top performer

Computer/hardware systems **7.6%**

Semiconductor/chip **6.4%**

Software/SaaS **6.2%**



Company-level pay variation in high tech

Within segments, there are potential differences in pay philosophies across companies. So the company-level approach provides the best estimates for analyzing the internal labor market of a company. (Here, we exclude any companies with fewer than 100 in-scope employees.)

Figure 8 shows how different companies reward general experience, tenure and performance differently. General experience effects are almost all positive, tenure effects are a mix of positive and negative, and performance effects are generally positive. However, there is a wide range in the extent to which some companies reward (or punish) various characteristics.

Performance generally has a greater impact on base pay than general experience and tenure together.

Median general experience effect	1.7%
Median tenure effect	-0.2%
Median performance effect	2.2%

Figure 8. Experience, tenure, and performance drivers of base pay in tech companies

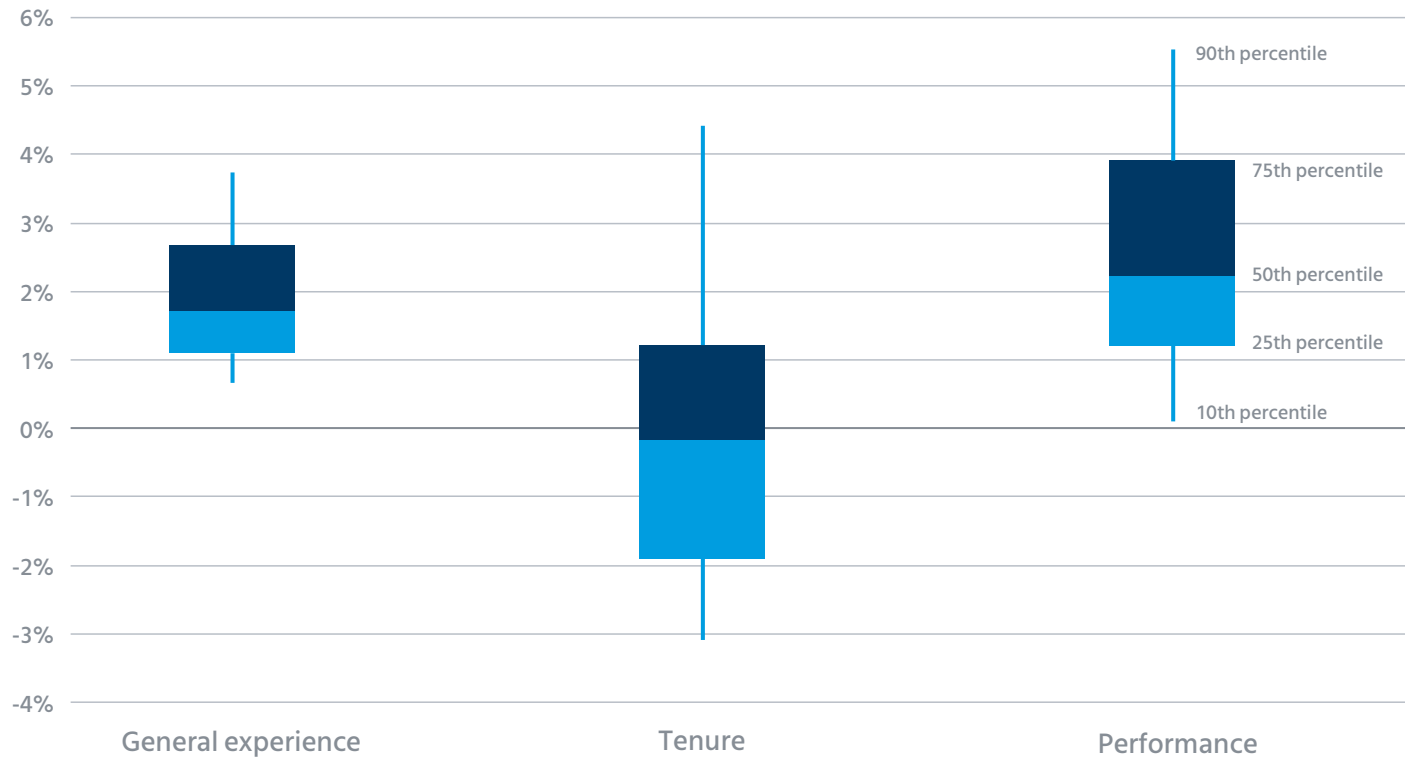
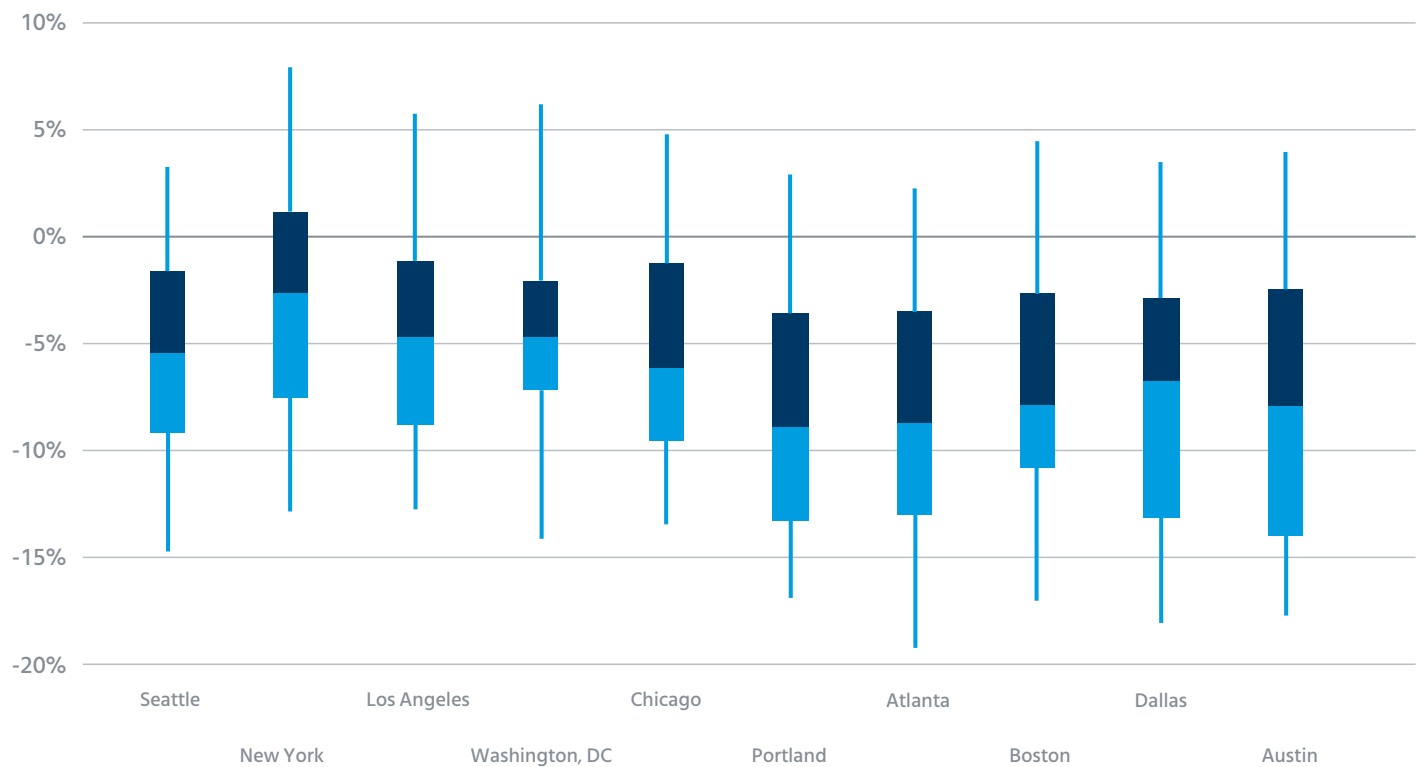


Figure 9 shows that Silicon Valley employees receive higher pay than all other geographic areas, except for New York. The boxes represent the 25th, 50th and 75th percentiles of effects. As with the above, the boxes show a wide range of different pay practices among companies, relative to companies in Silicon Valley. Although the

central tendency is to pay lower than Silicon Valley, the tops and bottoms of the boxes indicate the degree to which individual company practices vary. For example, when looking at Seattle, the 75th percentile company pays only 2% lower than Silicon Valley, whereas the 25th percentile company pays closer to 10% lower than Silicon Valley.

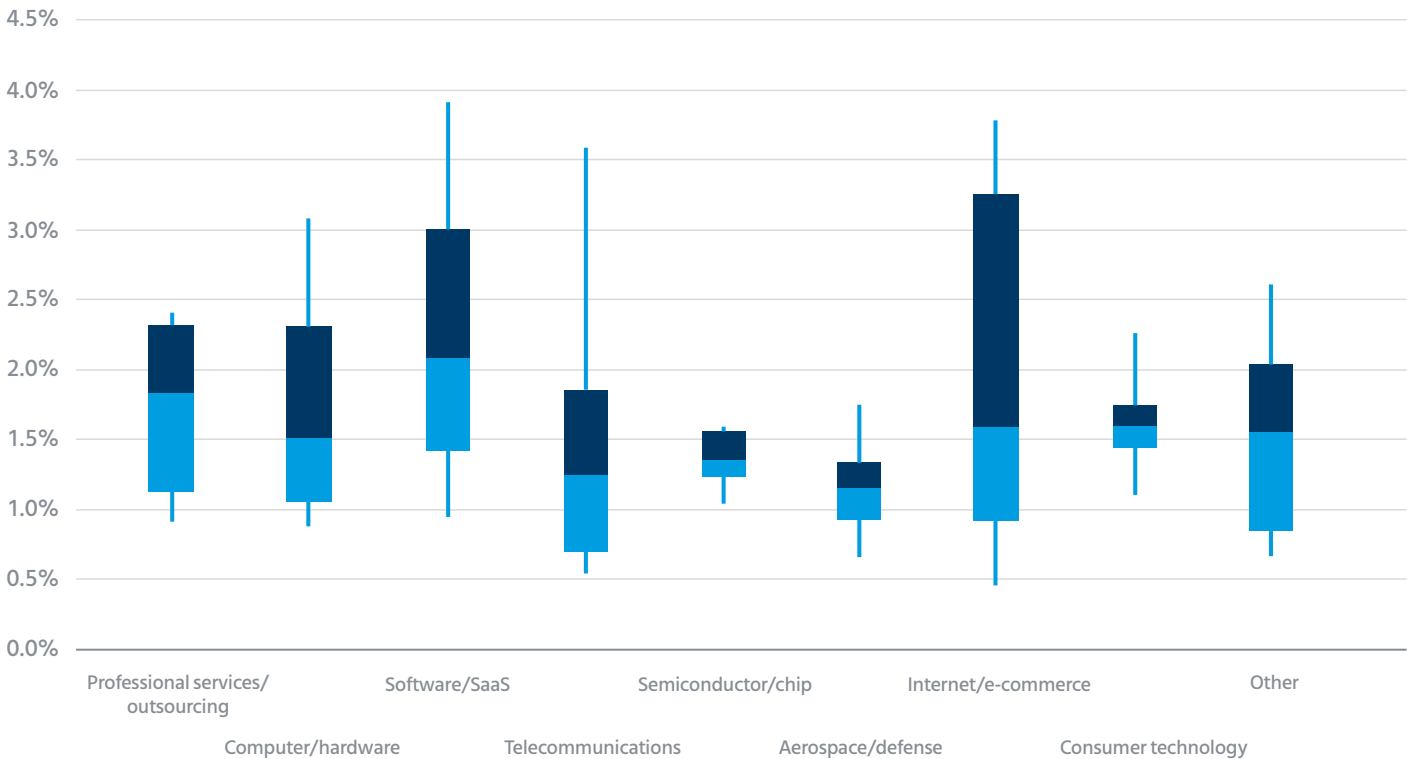
Figure 9. Company geographic base pay differentials relative to Silicon Valley



Company-level pay variation by segment

Typically, the effects of general experience on base pay are positive and similar within a company (see Figure 10).

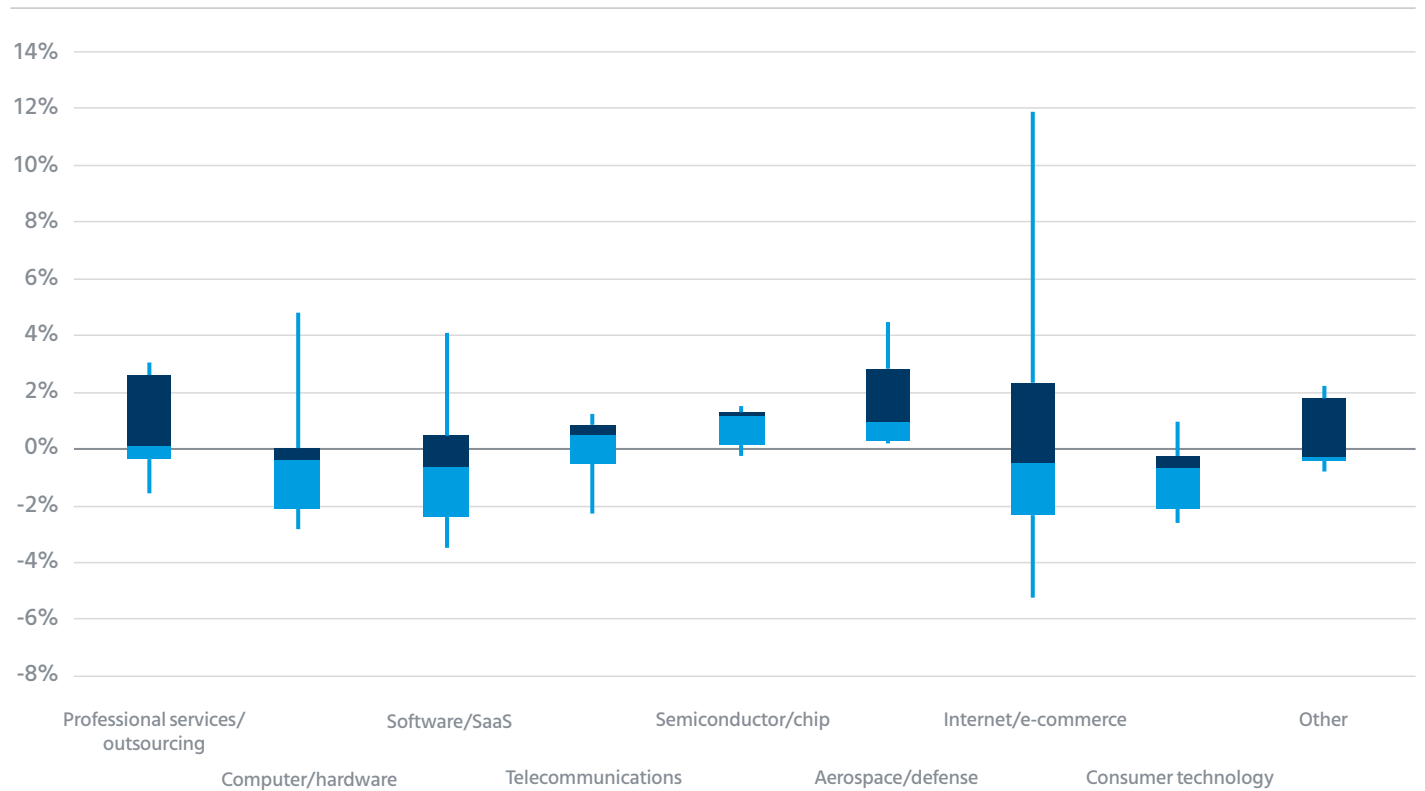
Figure 10. Effects of general experience on company base pay by segment



Compared to general experience, tenure has a wider range of effects, with some segments having a positive median effect and other segments having a negative median effect (see Figure 11).

The software/SaaS and internet/e-commerce segments have the widest ranges of tenure effects on pay.

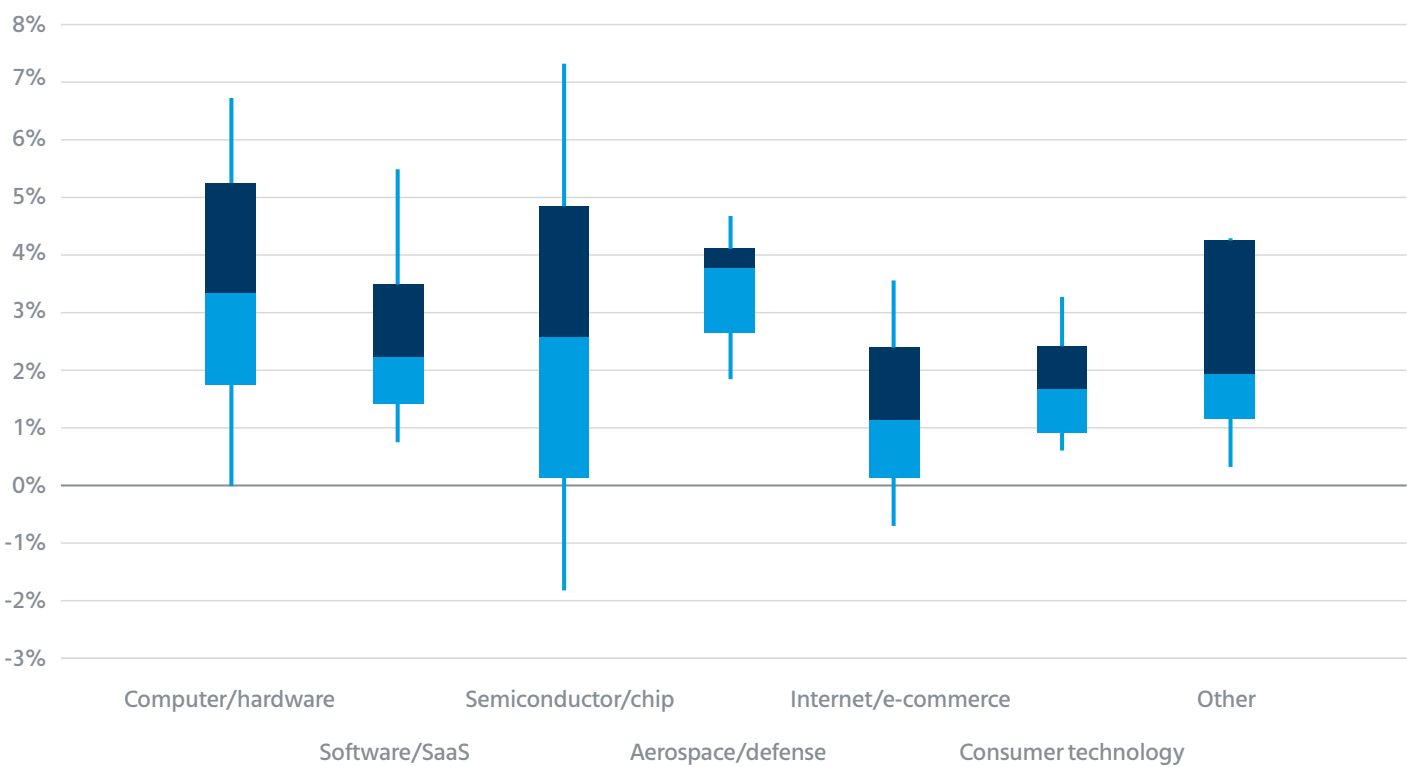
Figure 11. Effects of company tenure on base pay by segment



As shown in Figure 12, performance generally has a positive effect on pay but not always.

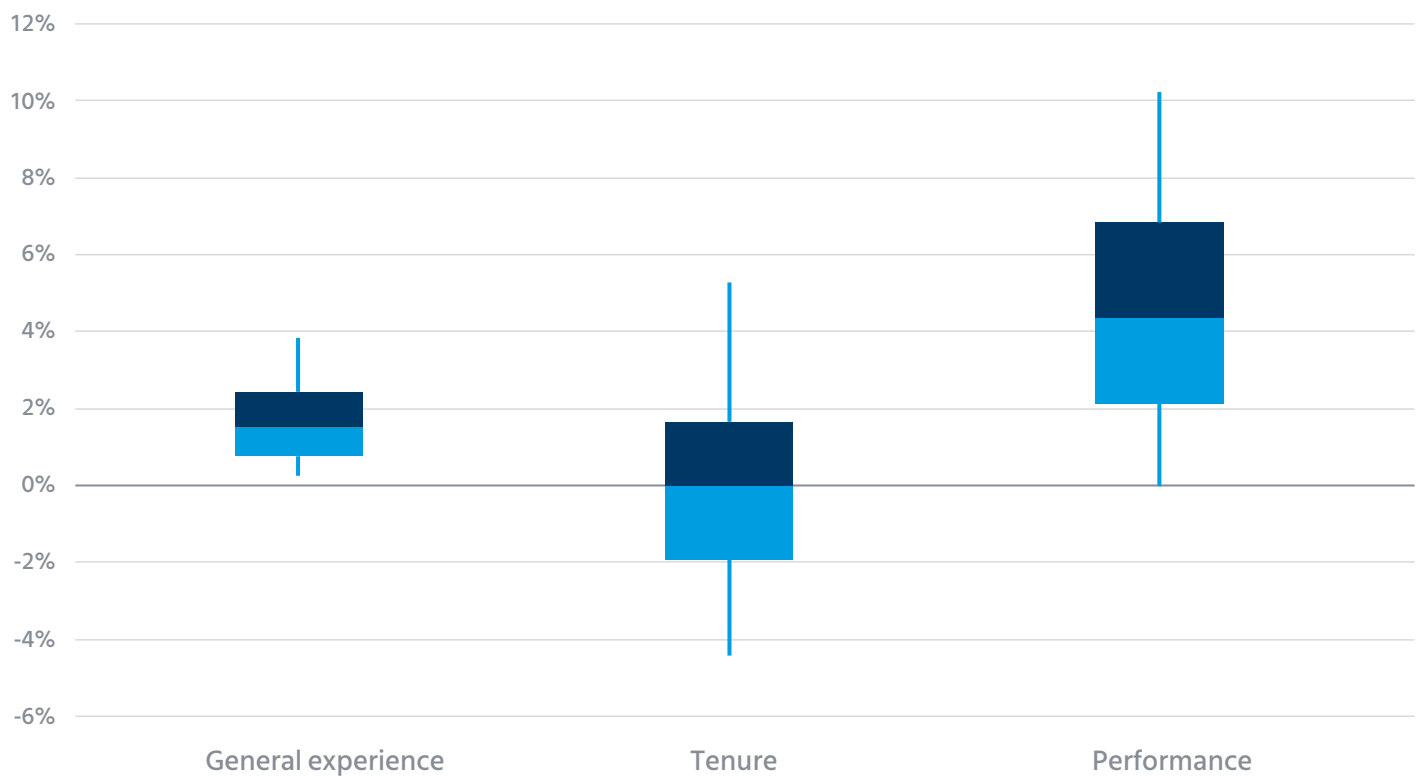
(Some industries provided insufficient performance data to be included.)

Figure 12. Effects of performance on company base pay by segment



Performance is a much more significant pay driver of TDC than general experience or tenure (see Figure 13).

Figure 13. Experience, tenure, and performance drivers of total direct compensation in tech companies



Median effect of general experience

1.5%

Median effect of tenure

0.1%

Median effect of performance

4.3%



Key findings and implications of high-tech pay practices

- 1** High tech rewards general experience, but different segments and companies value tenure very differently. For this reason, it's critical to consider how your organization values general experience and tenure compared to the organizations you compete against for talent. Candidates and recruiters may think about point-in-time benchmarking to get prospective employees hired. But once employees are hired, they will look at their pay trajectories and how they're valued relative to other firms.
- 2** High tech has a strong pay-for-performance model, but some segments, such as computer/hardware and software/SaaS, reward it more than others. These effects are the strongest in TDC. Be prepared to pay for performance if you want to compete against tech employers, and be sure to do so especially in bonus and equity awards.
- 3** Level and job function are major reasons for differences in pay. In particular, we see that pay begins to jump at the senior professional and senior manager levels. Don't shy away from paying senior professionals as much, if not more, than some managers and even executives.
- 4** Employees in the Bay Area typically earn more than those in other locations, though geographical differences aren't as large as you might think. When building salary structures, think about the competitive labor markets for talent when using any form of geographic differential. The premium or discount of pay from a national average will undoubtedly be different for software engineers than for less in-demand job types.

Conclusion

In this paper, we set out to help tech companies — and organizations that compete with them — cut through the theories and understand the realities of tech-industry pay practices. By quantifying these pay practices, you can make fact-based decisions about what, how and why to pay your tech workers to ensure competitive success.

Learn how to make these pay practices work for your organization.

As you're thinking through your organization's approach to paying tech workers, a Mercer consultant can help guide you through the decisions you need to make.

Reach out to us at mercer.us/contact-us.html.

About the authors

Tauseef Rahman is a partner with Mercer based in San Francisco. You can reach him at tauseef.rahman@mercer.com

Jonathan Cottrell is a senior associate with Mercer based in Washington, DC. You can reach him at jonathan.cottrell@mercer.com

Jin Woo Chang is a senior associate with Mercer based in Chicago. You can reach him at jin.woo.chang@mercer.com