



## MEDIA RELEASE

12 May 2021

### CCCS consults on the Proposed Acquisition by Advanced Micro Devices, Inc. of Xilinx, Inc.

1. The Competition and Consumer Commission of Singapore (“**CCCS**”) is inviting public feedback on the proposed acquisition by Advanced Micro Devices, Inc. (“**AMD**”) of Xilinx, Inc. (“**Xilinx**”) (collectively, “**the Parties**”) (the “**Proposed Transaction**”).
2. CCCS received an application from AMD for a decision on the Proposed Transaction and accepted the application as complete on 4 May 2021. CCCS is now assessing whether the Proposed Transaction would infringe section 54 of the Competition Act (Cap. 50B), which prohibits mergers which have resulted, or may be expected to result, in a substantial lessening of competition within any market in Singapore.

### The Parties

#### AMD

3. AMD is a global semiconductor company headquartered in Santa Clara, California, USA, with 40 offices in North America, South America, Asia, Australia, and Europe.<sup>1</sup> AMD primarily supplies central processing units (“**CPUs**”), also known as microprocessors, based on the x86 instruction set, and graphic processing units (“**GPUs**”). AMD also offers accelerated processing units (“**APUs**”) that combine a CPU with a GPU on one chip, and semi-custom System-on-Chip (“**SoC**”) products that comprise both CPUs and GPUs and are designed primarily for the gaming console market. AMD offers all products globally, including to customers in Singapore.
4. In Singapore, AMD’s registered entity is Advanced Micro Devices (Singapore) Pte. Ltd. and it only uses the trading or business name of “AMD”. AMD markets its products under a variety of brand names, including the Ryzen family of x86 microprocessor for desktops; the EPYC family of x86 microprocessor for servers; and the Radeon family

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<sup>1</sup> AMD’s common stock is listed on the NASDAQ Global Select Market under the symbol “AMD”.

of graphics cards. AMD's Singapore facility is a product development centre that conducts R&D activities for pre- and post-silicon development.

### Xilinx

5. Xilinx is a global semiconductor company headquartered in San Jose, California, USA, with 12 offices in North America, Europe and Asia Pacific.<sup>2</sup> Xilinx primarily designs and supplies field programmable gate arrays ("**FPGAs**") that customers programme to perform desired logic functions, as well as programmable FPGA-based SoCs, which combine processor-based systems with Xilinx FPGAs in a single device. Xilinx designs and develops FPGAs, FPGA-based SoCs, Adaptive Compute Acceleration Platform ("**ACAP**"), a fully software-programmable, multi-core heterogeneous compute platform, and Smart Network Interface Cards ("**SmartNICs**").
6. In addition to its programmable platforms, Xilinx provides design services, customer training, field engineering, and technical support. Xilinx offers all products globally, including to customers in Singapore.
7. In Singapore, Xilinx only uses the trading or business name of "Xilinx" and its registered entities are Xilinx Asia Pacific Pte. Ltd., Xilinx Sales International Pte Ltd., and Xilinx Singapore Holding Pte. Ltd.. Xilinx markets its commercialised FPGA technology under the following brand names: Alveo, Artix, Kintex, Spartan, Versal, Virtex, Zynq, and Zynq MPSoC. Xilinx's products are used by electronic equipment manufacturers in application segments, such as aerospace & defence, automotive, broadcast and consumer, industrial test and measurement and emulation, wired and wireless and data centre. Xilinx's Singapore facility is primarily used for manufacturing support and testing of products and services for customers in Asia Pacific/Japan, coordination and management of third parties in its supply chain and R&D.

### **The Proposed Transaction**

8. The Proposed Transaction will involve AMD acquiring Xilinx in an all-stock transaction. Thrones Merger Sub, Inc., an indirectly wholly owned subsidiary of AMD, will merge with Xilinx, with Xilinx surviving the merger as a wholly owned indirect subsidiary of AMD. As a result of the Proposed Transaction, AMD will acquire sole control of Xilinx. Post-Proposed Transaction, current AMD stockholders will own approximately 74 per cent of the combined company on a fully diluted basis, while Xilinx stockholders will own approximately 26 per cent.

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<sup>2</sup> Xilinx's common stock is listed on the NASDAQ Global Select Market under the "XLNX" symbol. No entity solely or jointly controls Xilinx.

9. AMD submits that both AMD and Xilinx are active in the supply of semiconductor technology, but each has a distinct focus and offering, and their activities are complementary.
10. AMD further submits that AMD's CPUs and Xilinx's FPGAs perform complementary functions in data centres and can be purchased by the same set of customers.<sup>3</sup> However, AMD submits that this association does not give rise to any competition concerns (including any conglomerate effects<sup>4</sup>) because:
  - a. Suppliers of CPUs and FPGAs compete on price, functionality, performance and power consumption. In general, there is strong interchangeability among CPUs and FPGAs from different suppliers within the data centre space. As a data centre customer purchases each product based on how the product's specification meets its need and budget, a supplier need not offer a broad range of data centre products across various categories in order to compete effectively against other suppliers;
  - b. There are no significant barriers to entry for any products or services the Parties sell, including CPUs and FPGAs for data centres, either in Singapore or globally;
  - c. Customers of AMD and Xilinx have strong countervailing buyer power, given that the customer bases of both Parties are concentrated, large and global. Customers are able to switch, and have switched easily between suppliers of CPUs and FPGAs for data centres, and there are no prohibitive costs and time involved in such switching;
  - d. The merged entity would have neither the ability nor the incentive to pursue bundling or tying strategies with FPGAs and CPUs in the data centres segment given the presence of (i) a much larger competitor on the CPU market and (ii) a strong, comparably sized competitor on the FPGA market. According to AMD, the key competitor to the Parties for (i) the supply of FPGAs for data centres; and (ii) the supply of both CPUs and FPGAs for data centres is Intel. Other

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<sup>3</sup> AMD submits that FPGAs can sometimes (although not in all instances) be interconnected with CPUs in data centres to accelerate certain tasks (i.e., computing, networking, and storage) that are normally performed by a CPU.

<sup>4</sup> Conglomerate effects arise where the products acquired are complementary to the acquirer's own products, giving rise to "portfolio power". For example, where a merger creates a firm with many brands under its control, and the brands relate to products that share sufficient characteristics to be considered a discrete group, customers may have an incentive to purchase the portfolio from one supplier to reduce their transaction costs. This circumstance may lead to a substantial lessening of competition if non-portfolio competitors, or those competitors that control only one or a few brands, do not impose an effective competitive constraint on the firm(s) with "portfolio power". (For more information, please refer to *paragraphs 6.22 and 6.23 of the CCCS Guidelines on the Substantive Assessment of Mergers 2016*.)

competitors for the supply of CPUs for data centres include Intel, IBM, Marvell, Ampere and Oracle.

11. In addition, AMD submits that the Proposed Transaction will not give rise to:
- a. Non-coordinated effects as the Proposed Transaction does not give rise to any horizontal overlaps between the Parties – AMD is active in CPU and GPUs, while Xilinx is active in FPGAs. AMD faces strong competition from other competitors with larger market shares in the markets for CPUs and GPUs respectively. Significant competitive constraint from other large competitors will continue post-Proposed Transaction in relation to both the supply of CPUs and FPGAs in data centres.
  - b. Coordinated effects as the Parties do not offer any horizontally overlapping goods or services indicating that the structure of the industry would remain unaffected by the Proposed Transaction and would not incentivise coordination of behaviour by other market players. Furthermore, suppliers of semiconductor products, including CPUs and FPGAs for data centres, compete on the basis of product differentiation and are constantly innovating to offer new and improved products in the market with no incentives to coordinate with each other; and strong countervailing buyer power from large customers facilitates the process of switching between different suppliers in response to price changes or any other reasons.
  - c. Vertical effects as there are no existing or potential vertical relationships between the Parties.

### **Public Consultation**

12. CCCS is inviting public feedback on the Proposed Transaction from 12 May 2021 to 2pm on 27 May 2021.
13. More information on the public consultation can be accessed and downloaded from the CCCS website at [www.cccs.gov.sg](http://www.cccs.gov.sg) under the section "[Public Consultation](#)". If the submission or correspondence contains confidential information, please also provide CCCS with a non-confidential version of the submission or correspondence.

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## **About the Competition & Consumer Commission of Singapore (CCCS)**

The Competition and Consumer Commission of Singapore (“CCCS”) is a statutory board of the Ministry of Trade and Industry. CCCS administers and enforces the Competition Act (Cap. 50B) which empowers CCCS to investigate and adjudicate anti-competitive activities, issue directions to stop and/or prevent anti-competitive activities and impose financial penalties. CCCS is also the administering agency of the Consumer Protection (Fair Trading) Act (Cap. 52A) or CPFTA which protects consumers against unfair trade practices in Singapore. Our mission is to make markets work well to create opportunities and choices for business and consumers in Singapore.

For more information, please visit [www.cccs.gov.sg](http://www.cccs.gov.sg).

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