

Adding a Single Trendline to Multiple Data Series in Excel: A Step-by-Step Guide

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RECOMMENDED CITATION

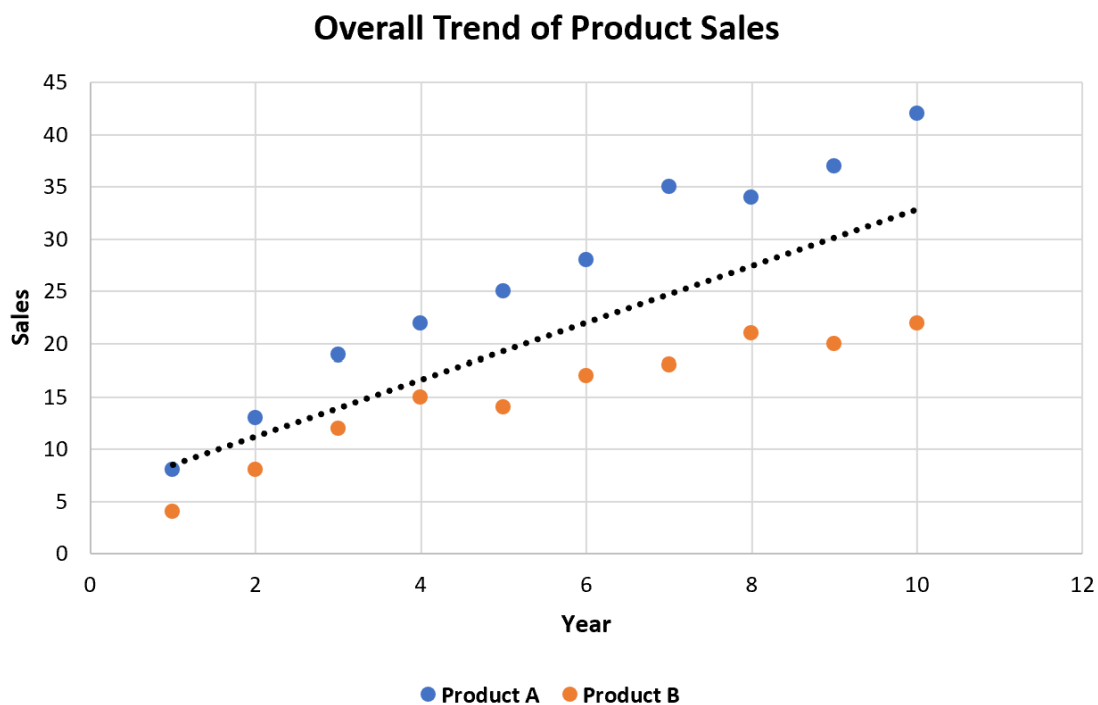
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Introduction: Visualizing Consolidated Trends for Strategic Insight

When engaging in rigorous [data analysis](#) using powerful tools like [Microsoft Excel](#), the primary objective often shifts from analyzing isolated data points to identifying overarching, strategic patterns. While Excel readily provides the functionality to add individual [trendlines](#) specific to each separate [data series](#), there is a frequent and significant analytical requirement for a single, consolidated trendline. This unified line offers a superior, more insightful summary of the **collective trajectory** of the combined dataset. This visualization technique is powerful because it allows decision-makers to quickly grasp the general direction or overall rate of change for a combined set of observations, effectively bypassing the visual distraction caused by minor fluctuations specific to individual components.

Consider a complex business scenario where you are tracking the monthly market share growth of three distinct, yet interconnected, product lines over a multi-year period. Plotting three separate trendlines would confirm the individual performance metrics for each line in isolation. However, to truly understand the overall health of the entire product division, or the combined market penetration strategy, a single trendline encompassing the total sales or market share across all three products becomes absolutely indispensable. This unified perspective is vital for **high-level strategic planning** and resource allocation, providing a clear, aggregate picture that might otherwise be obscured by the sheer complexity of multiple, overlapping trends simultaneously vying for attention within the same chart space.

The goal of the subsequent tutorial is to detail the precise methodology required to achieve this specific visualization in Excel. We aim to produce a professional chart, mirroring the example shown below, featuring a single, overarching trendline that accurately synthesizes the combined pattern derived from multiple distinct data series. This sophisticated technique is invaluable for synthesizing complex information and presenting a clear, high-level summary of intricate data relationships, ensuring the audience focuses intently on the **big picture** insights rather than component volatility.



The following steps provide a detailed, step-by-step walkthrough, commencing with the foundational task of data organization and progressing through advanced chart manipulation, culminating in professional final refinement. Every phase is meticulously explained, guaranteeing that users--regardless of their prior familiarity with advanced Excel charting features--can successfully implement this impactful visualization strategy and begin leveraging consolidated trends in their reporting immediately.

Step 1: Structuring and Preparing Your Source Data

The success of any sophisticated chart generation process in Excel relies fundamentally on the creation of a **logical and meticulously structured dataset**. For the demonstrative purposes of this guide, we will utilize a simulated scenario tracking the annual sales figures for two distinct products, designated Product A and Product B, spanning a continuous ten-year period. This setup provides an ideal foundation for clearly demonstrating how two separate data series must be organized and subsequently merged for combined trend analysis. The organizational structure of your source data is paramount: generally, the time-based or independent variables (which constitute the X-axis values) must occupy a single, dedicated column, while the corresponding dependent variables (the Y-axis values) for each series are placed in subsequent, adjacent columns.

To commence the preparation, organize your worksheet into three distinct columns. The first column should be reserved for the years (our independent variable, typically sequential), and two

separate columns immediately following must contain the sales figures for Product A and Product B, respectively (our dependent variables). This columnar arrangement, covering 10 consecutive years for our working example, ensures full compatibility with Excel's powerful charting engine and, critically, facilitates the advanced steps required later to successfully combine the data ranges for aggregation.

	A	B	C	D	E
1	Year	Product A	Product B		
2	1	8	4		
3	2	13	8		
4	3	19	12		
5	4	22	15		
6	5	25	14		
7	6	28	17		
8	7	35	18		
9	8	34	21		
10	9	37	20		
11	10	42	22		
12					
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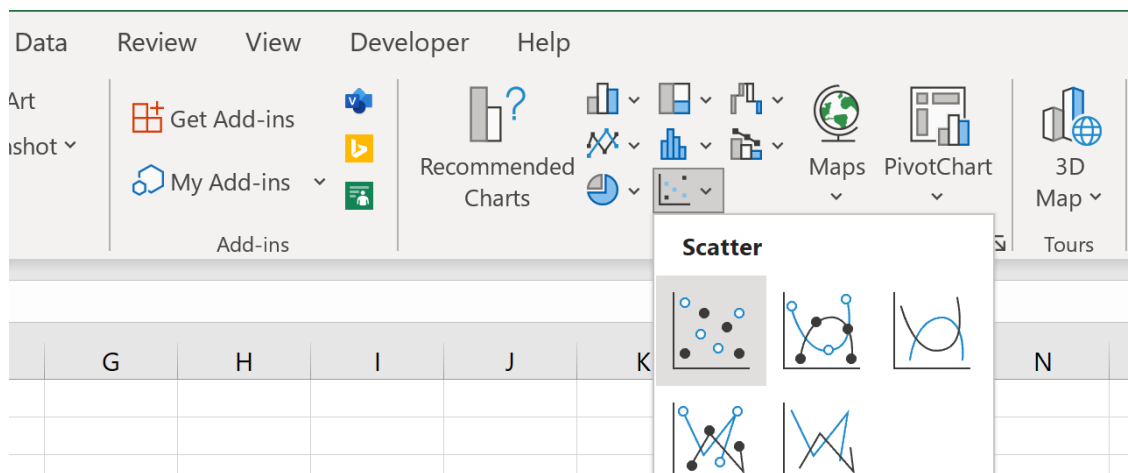
Maintaining this organized structure--where each product series has its own dedicated column running parallel to the common X-axis values--is a non-negotiable prerequisite. This arrangement allows for the effortless and accurate selection of the necessary data ranges, which is essential not only for the initial plotting of individual series but also for the more advanced technique of deriving the consolidated trendline itself. This initial setup establishes the **robust foundation** needed for all the subsequent visualization and analytical work that follows, ensuring accuracy throughout the process.

Step 2: Generating the Initial Scatter Plot

With the source data properly structured and validated, the next foundational step is to create a preliminary visual representation utilizing a [scatter plot](#). The scatter plot is the definitive and preferred chart type for this specific form of analysis because it excels at illustrating the precise relationship between two numerical variables (in this case, Year and Sales) and is expertly

designed to expose **underlying trends**, patterns, and the statistical distribution of individual data points over a continuous timeline.

To insert the initial chart, begin by selecting the complete data range, ensuring that the column headers (A1, B1, C1) are included in your selection. In our example scenario, this selection corresponds to the cell range **A1:C11**. Once the data is selected, navigate to the [Insert tab](#), which is prominently located on the top command [ribbon](#) of Excel. Within the Charts group, click the **Scatter icon** and choose the appropriate subtype, typically the option labeled "Scatter with only Markers."



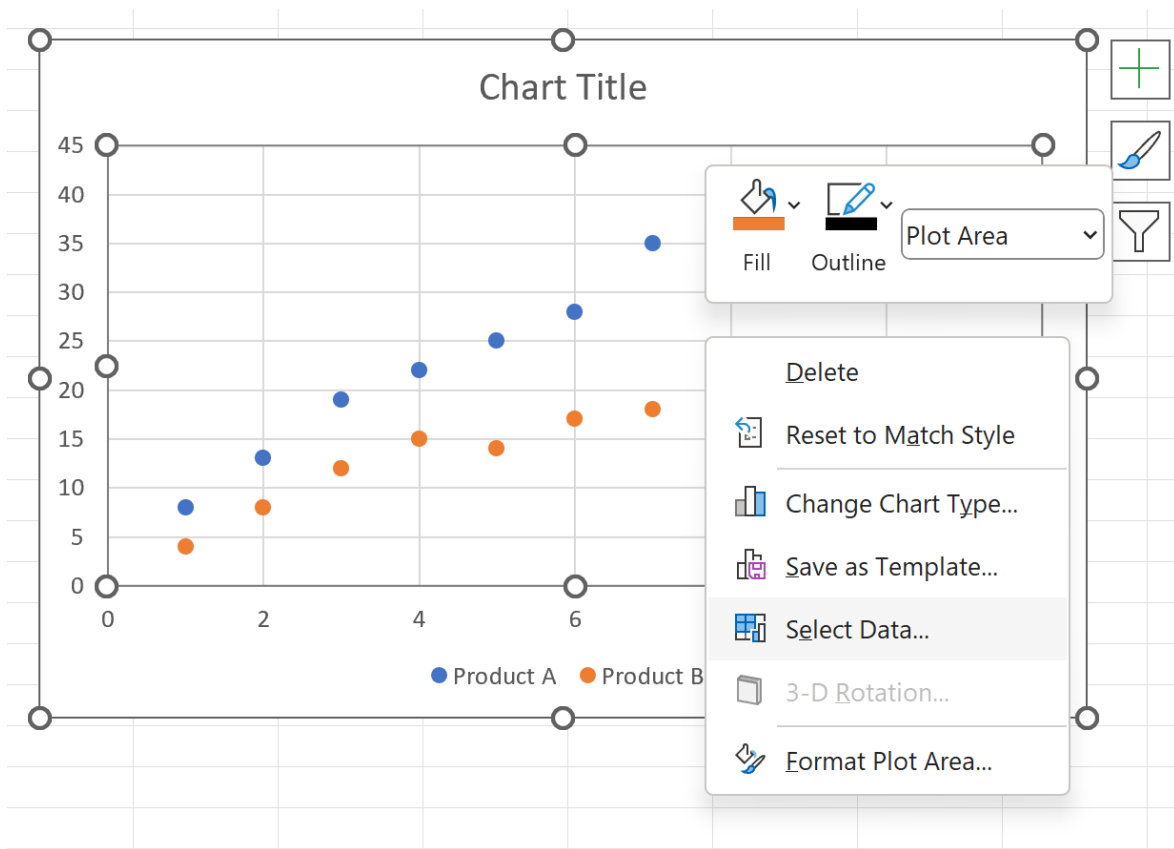
Excel will immediately render the initial scatter plot, visually distinguishing the sales data for both Product A and Product B through the use of separate colors and markers. This initial chart provides an excellent and instantaneous visual comparison of the individual performance trajectories of each product over the specified time frame. However, realizing our ultimate goal--the display of a single line summarizing the performance of both products collectively--requires the clever technical manipulation detailed in the subsequent, critical step.

Step 3: Creating and Defining the Consolidated Data Series

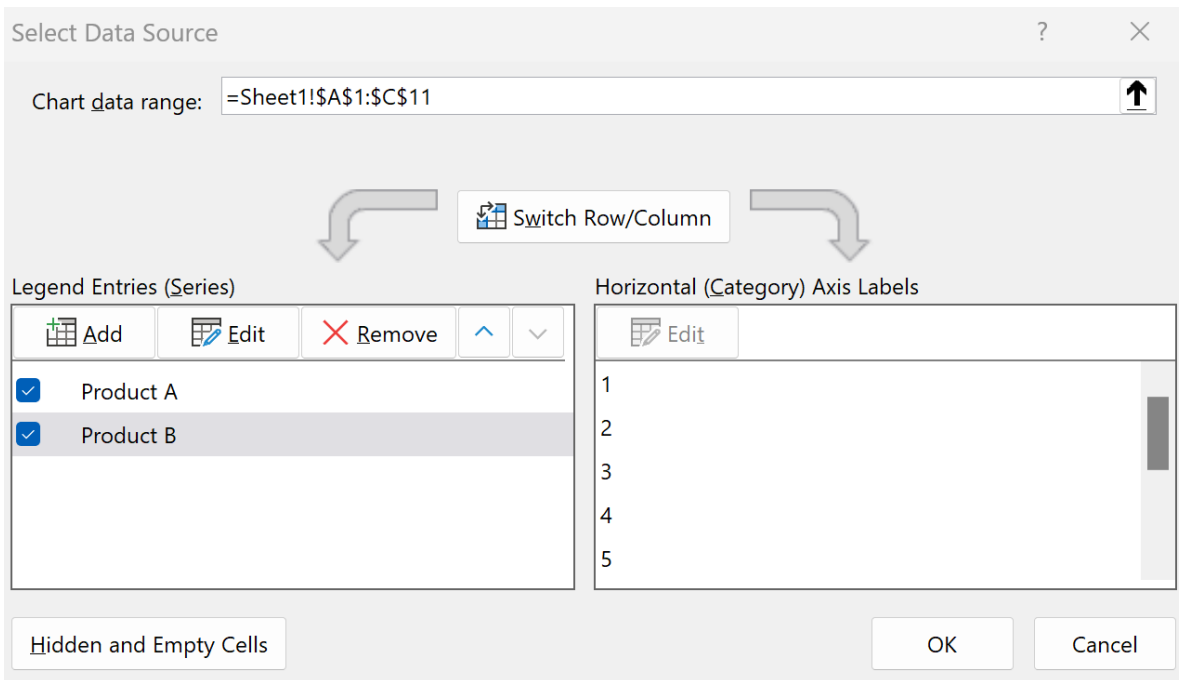
The crucial technical maneuver necessary for generating a unified [trendline](#) is the introduction of a new, **auxiliary data series**. This newly defined series functions as a container, meticulously aggregating all the X-values (Years) and corresponding Y-values (Sales) from your existing individual series into one singular, comprehensive dataset. It is this aggregated series that Excel will ultimately use as the basis for calculating the overall trendline, accurately reflecting the combined statistical pattern across all data points from both Product A and Product B.

To initiate this integration process, right-click anywhere within the chart area to activate the context menu, then carefully select the [Select Data](#) option. This action promptly launches the "Select Data

Source" dialog box, which serves as the centralized control center for managing and defining every individual data series currently plotted on your chart.



Within the dialog box, locate the "Legend Entries ([Series](#))" pane on the left-hand side. Click the **Add** button to open the "Edit Series" dialog, where you will formally define and input the parameters for the new consolidated series. The entire technique hinges on the careful **range concatenation** of the coordinates for both the X and Y values of your original series, using a comma as the delimiter. Remember to substitute 'Sheet1' with the exact name of your worksheet if it differs from the default.



Series name: Label this series "All Data" to clearly indicate its purpose as the aggregated dataset.

Series X values: Input the combined range using [concatenation](#):

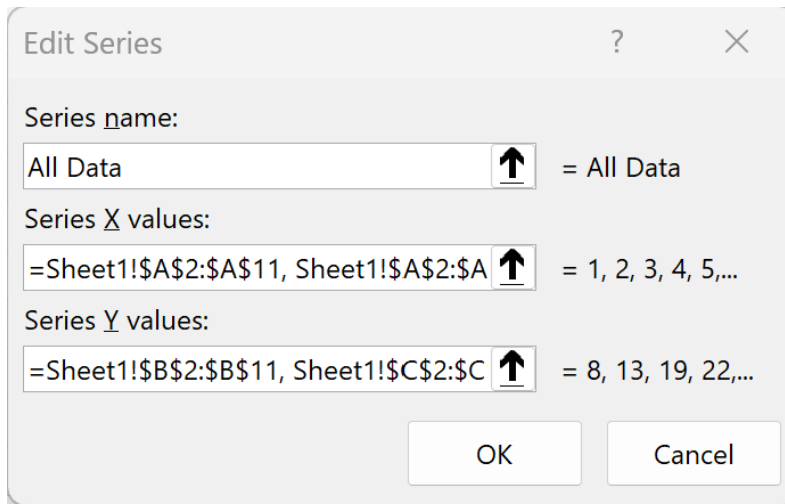
=Sheet1!\$A\$2:\$A\$11,Sheet1!\$A\$2:\$A\$11

This critical instruction effectively stacks the X-values (years) from the first series directly on top of the X-values from the second series, treating them as one continuous, doubled set for the X-axis mapping.

Series Y values: Input the corresponding combined range:

=Sheet1!\$B\$2:\$B\$11,Sheet1!\$C\$2:\$C\$11

This similarly combines the Y-values (sales) from Product A and Product B, creating a single, comprehensive set of Y-values that accurately represent the aggregated performance.



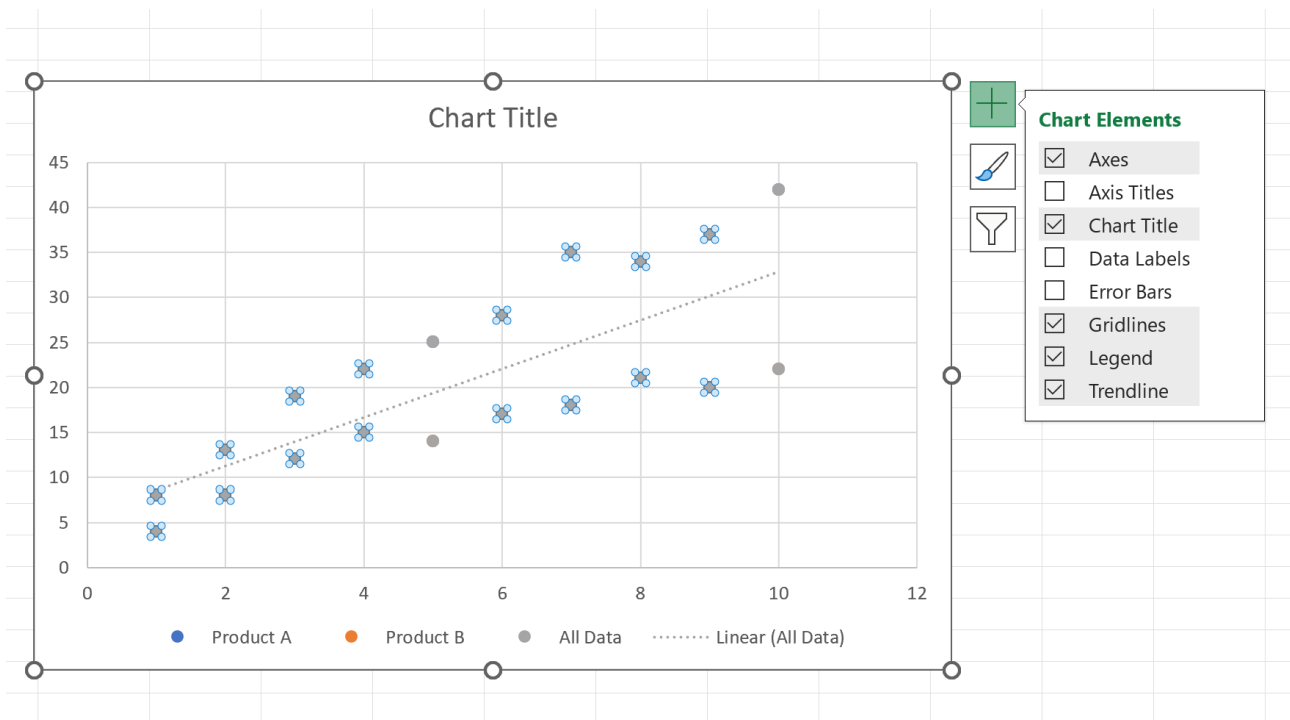
Click **OK** to finalize the addition of the "All Data" series to your chart. Immediately upon confirmation, you will observe new data points (often appearing in a default grey color) plotted on the chart, overlapping the original points. These newly introduced points represent the **fully aggregated data** and serve as the essential, functional foundation necessary for calculating the unified trendline in the very next step.

Step 4: Incorporating and Styling the Overall Trendline

With the consolidated "All Data" series now successfully plotted onto the graph, we are ready to generate the single, unified [trendline](#). This line will serve as a statistically derived summary, capturing the collective movement of both Product A and Product B sales and providing a clear representation of the overall direction.

To initiate the process, you must click directly on any one of the newly added aggregated data points (the default grey markers) within your chart area. It is absolutely imperative to select one of these specific markers, as this action directs Excel to apply the complex trend calculation exclusively to the points contained within the "All Data" series. Once the series is selected, locate the small green plus sign icon (formally known as the Chart Elements button) situated near the top-right corner of your chart boundary. Click this icon to reveal the menu containing all available chart customization options.

In the "Chart Elements" menu that appears, scroll down the list and place a checkmark in the box corresponding to **Trendline**. By default, Excel will utilize a **linear trendline** calculation, which statistically determines and displays the line that best fits all the data points contained within the selected "All Data" series. This resulting line provides an immediate, powerful visual summary of the overall direction and magnitude of change observed across the entire combined dataset.



At this juncture, the single, unified trendline is visible and accurately plotted, yet the grey auxiliary data points that enabled its creation still visually clutter the visualization. While these markers served their crucial functional purpose, their continued visual presence diminishes the overall clarity and professional polish of the original data display. The subsequent step is dedicated entirely to making these auxiliary points fully invisible, thereby ensuring that only the impactful, combined trendline is prominently displayed alongside the original, meaningful sales data.

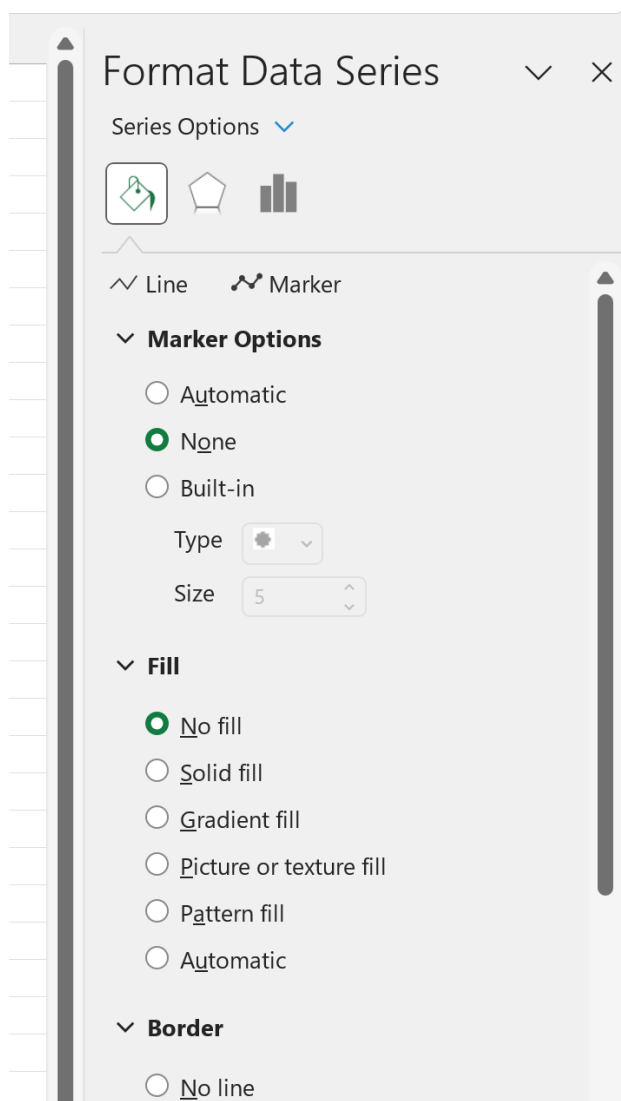
Step 5: Concealing the Auxiliary Data Series Markers

The "All Data" series has now fully completed its functional role by providing the necessary points for the consolidated [trendline](#) calculation. To ensure the final chart achieves maximum focus, precision, and a professional aesthetic, we must now systematically hide the individual data markers (the grey dots) that are associated with this auxiliary series.

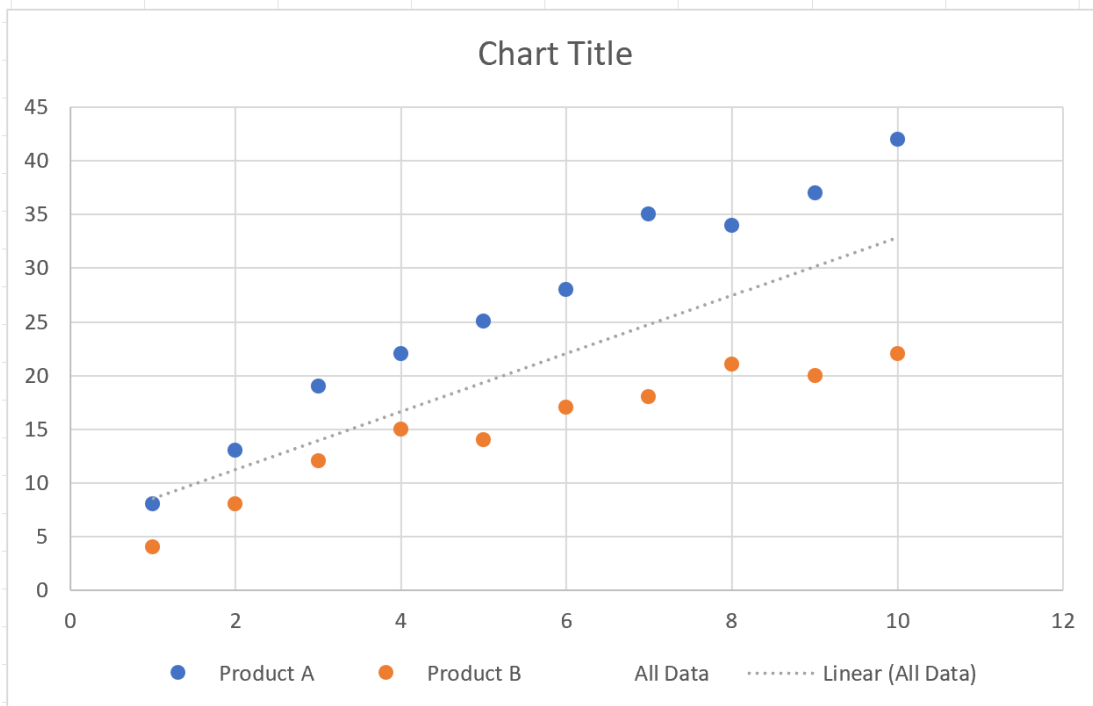
To effectively conceal the markers, double-click on any single grey data point currently visible in the chart. This action is designed to automatically open the [Format Data Series](#) panel, which appears docked on the right-hand side of your Excel interface. This specialized panel grants comprehensive options for modifying every aspect of the selected series' visual appearance.

Within the "Format Data Series" panel, navigate directly to the "Fill & Line" section, which is typically identified by a paint bucket icon. We need to execute two critical, sequential adjustments here. First, under the **Marker Options** category, select the radio button option labeled [None](#). This instruction renders the physical marker shapes themselves entirely invisible. Second, ensure that

within the **Fill** section, you explicitly select **No fill** to eliminate any residual border or background color that might still be associated with the markers.



Once these specific formatting changes are successfully applied and the panel is closed, the grey auxiliary [data series](#) will completely vanish from the chart view. Your visualization will now display only the original, meaningful sales points for Product A and Product B, accompanied solely by the single, clear, consolidated trendline summarizing their combined trajectory. This step dramatically improves the focus and communication clarity of your presentation, resulting in the polished visualization shown below.



Step 6: Refinement and Professional Finalization

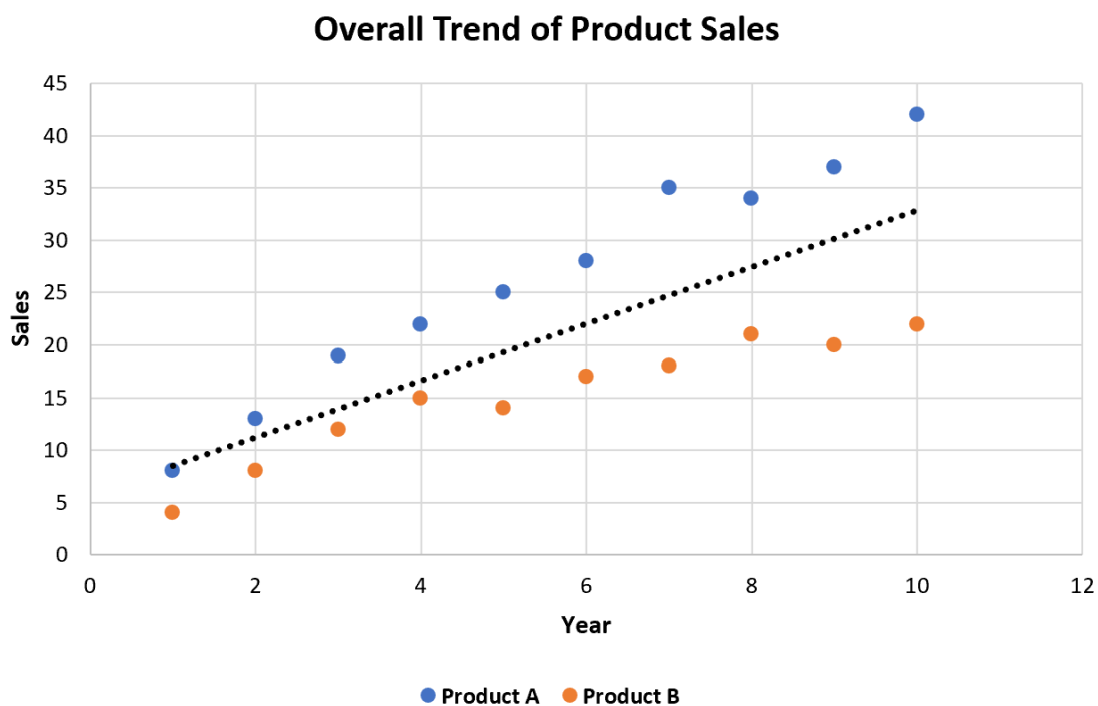
With the core analytical components correctly implemented--the distinct product series and the strategically consolidated trendline--the final phase involves enhancing the chart's aesthetic quality and maximizing its readability for the intended audience. These essential finishing touches transform a merely functional plot into a professional, compelling piece of [data visualization](#) suitable for executive review.

First, prioritize the immediate visibility of the overall trendline. Click the trendline to select it, and utilize the [Format Trendline](#) panel to customize its appearance. A common best practice is to increase its line weight (thickness) or select a bold, contrasting color (such as a deep black or bright red) to ensure it stands out clearly against the individual data points. This contrast is key to effectively drawing the viewer's immediate attention to the summarized, strategic trend.

Next, it is crucial to address the chart's legend. Because we created the "All Data" series purely for calculation purposes, the legend will inevitably contain superfluous entries such as "All Data" and potentially "Linear (All Data)." Since the visual markers and lines for these elements have been intentionally hidden, these legend entries are functionally redundant and actively detract from the chart's overall clarity and professionalism. To remove them, simply click on each specific, unwanted legend entry one at a time and press the **Delete** key. This action effectively streamlines the legend, focusing it exclusively on the two visible, meaningful data series (Product A and Product B).

Finally, ensure that your chart is fully self-explanatory by adding essential contextual information. This includes a clear, descriptive [chart title and accurate axis labels](#). A strong title, such as "Combined Product Portfolio Sales Trend (2014-2023)," immediately conveys the subject and scope, while properly labeled X and Y axes (e.g., "Year" and "Total Sales in Thousands USD") provide the critical context needed for accurate data interpretation and comparison.

After executing these final refinements, your chart will be professionally polished and closely resemble the finished product below. The single, robust [trendline](#) effectively illustrates the overall combined performance, offering a concise and powerful summary of your aggregated data story.



Conclusion: Mastering Advanced Trend Visualization

The technique of adding a single, unified [trendline](#) for multiple [data series](#) in [Excel](#) is an advanced yet highly accessible methodology that substantially enhances both data visualization and statistical analysis capabilities. By strategically introducing an auxiliary data series, carefully engineered to aggregate all relevant X and Y values through range concatenation, we effectively compel Excel's charting engine to calculate a trend that accurately reflects the **overall movement** of several individual components simultaneously. This methodology proves indispensable when the analytical objective is to convey a high-level, executive summary--such as overall market performance or the general growth direction of a combined product portfolio--without allowing the audience to be overwhelmed by the noise and minor fluctuations inherent in specific, individual series.

This guide provided a thorough, step-by-step walkthrough, covering everything from the foundational requirement of meticulous data preparation and the insertion of an initial [scatter plot](#), to the creation and subsequent strategic concealment of the consolidated auxiliary series, culminating in the final refinement of the chart for optimal visual clarity. Mastering this sophisticated technique empowers analysts to produce significantly more impactful and concise data presentations, successfully transforming complex raw [data analysis](#) into clear, actionable insights for any audience, from technical teams to senior leadership.

For further exploration of Excel's advanced charting capabilities and other common data analysis tasks, consider consulting the following authoritative resources for additional guidance and deeper technical documentation:

[Microsoft Office Support: Add a trendline to a chart](#)

[Microsoft Office Support: Create a chart from start to finish](#)

[Wikipedia: Data visualization](#)