

1. Introduction
The purpose of this report is to analyze the impact of the new tax regulations on the company's financial performance. The report is structured as follows:
2. Methodology
The data for this report was collected from the company's internal financial records and external market data. The analysis was conducted using a combination of qualitative and quantitative methods.
3. Results
The results of the analysis show that the new tax regulations have had a significant impact on the company's financial performance. The company's revenue has increased by 15% over the past year, while its expenses have decreased by 10%. This has resulted in a net increase in profit of 25%.
4. Conclusion
The new tax regulations have had a positive impact on the company's financial performance. The company's revenue has increased, and its expenses have decreased, leading to a net increase in profit. This suggests that the company is well-positioned to handle the new tax regulations and continue to grow.

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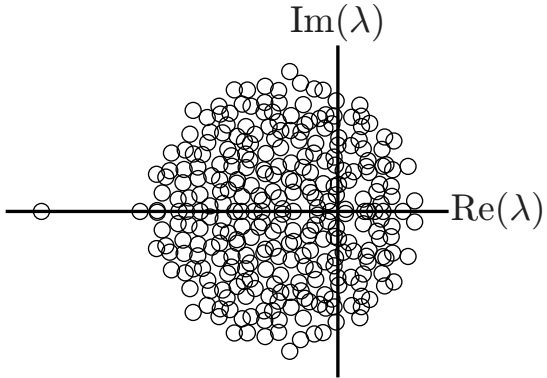


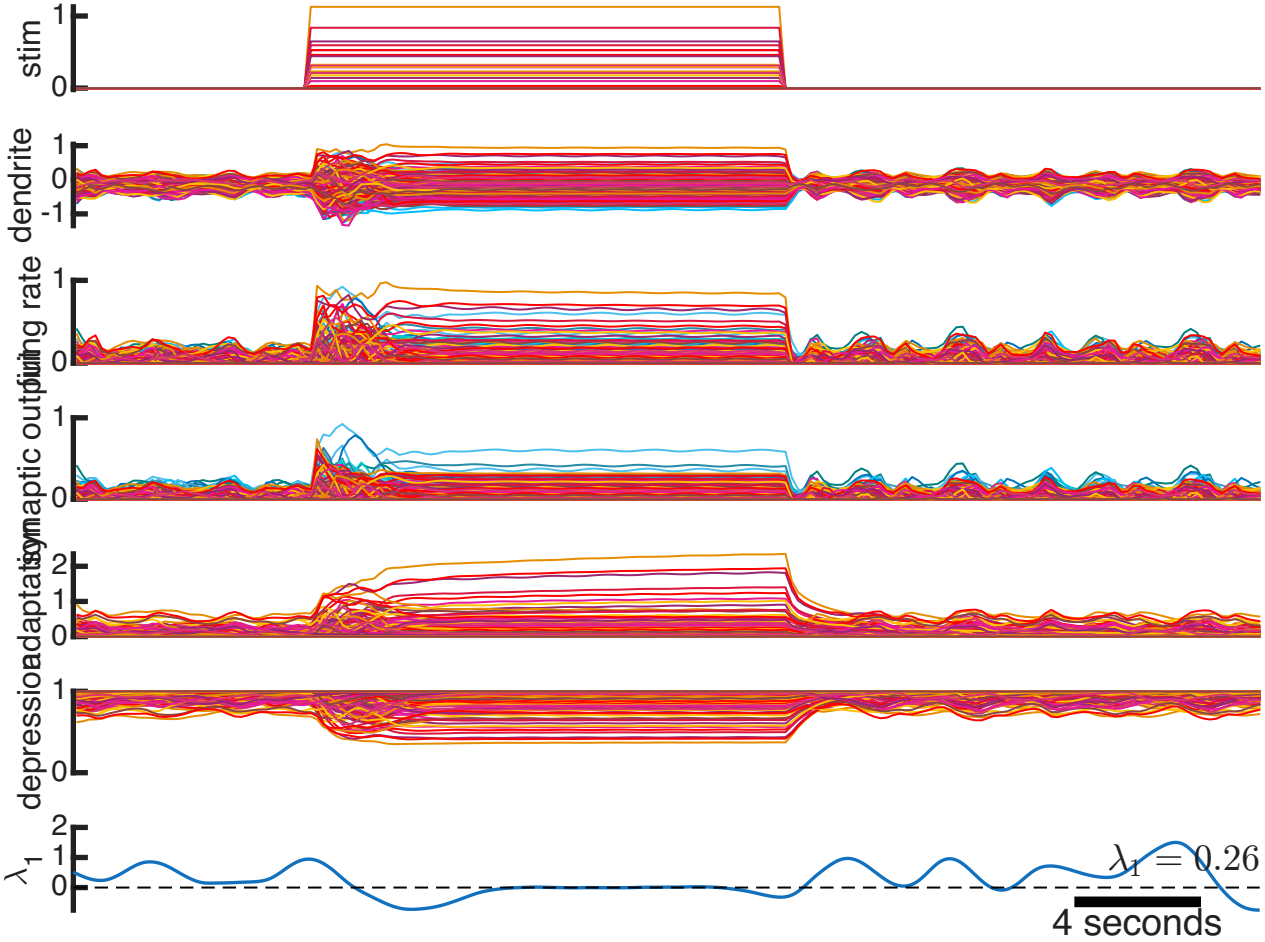
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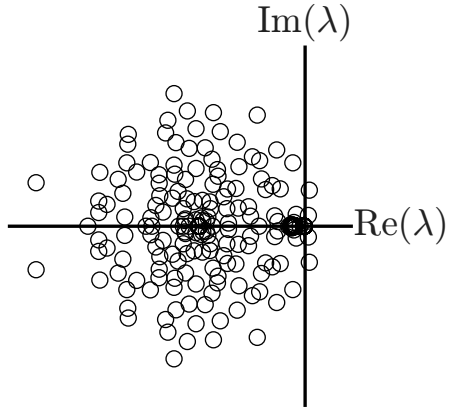
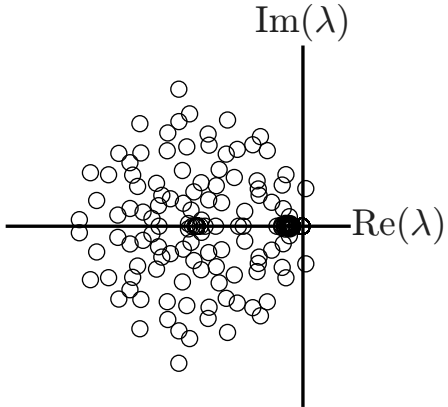
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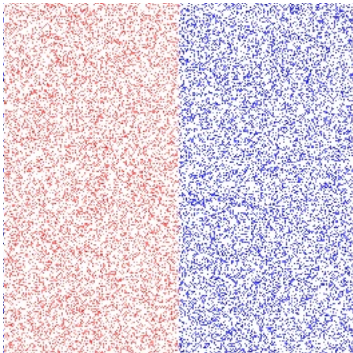
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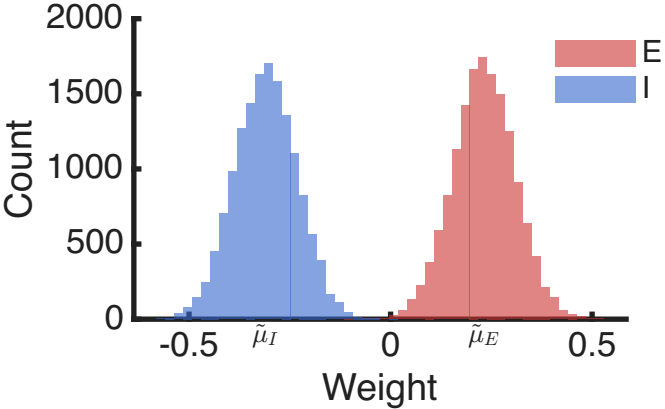
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1. Definition of a Group
A group is a set G equipped with a binary operation \cdot satisfying the following properties:
1. Closure: For all $a, b \in G$, $a \cdot b \in G$.
2. Associativity: For all $a, b, c \in G$, $(a \cdot b) \cdot c = a \cdot (b \cdot c)$.
3. Identity Element: There exists an element $e \in G$ such that $e \cdot a = a \cdot e = a$ for all $a \in G$.
4. Inverse Element: For each $a \in G$, there exists an element $a^{-1} \in G$ such that $a \cdot a^{-1} = a^{-1} \cdot a = e$.

2. Examples of Groups
(a) The Integers under Addition
Let $G = \mathbb{Z}$ be the set of integers. The binary operation is addition $+$. The identity element is 0 , and the inverse of a is $-a$.
(b) The Non-zero Real Numbers under Multiplication
Let $G = \mathbb{R} \setminus \{0\}$ be the set of non-zero real numbers. The binary operation is multiplication \cdot . The identity element is 1 , and the inverse of a is a^{-1} .

3. Subgroups
A subset H of a group G is a subgroup if H is itself a group under the same binary operation. To verify that H is a subgroup, it suffices to check:
1. Closure: For all $a, b \in H$, $a \cdot b \in H$.
2. Identity: The identity element e of G is in H .
3. Inverses: For each $a \in H$, $a^{-1} \in H$.

4. Quotient Groups
Let G be a group and H a normal subgroup. The quotient group G/H consists of cosets aH for $a \in G$. The binary operation on G/H is defined by $(aH) \cdot (bH) = (a \cdot b)H$. The identity element is H .

5. Isomorphisms
Two groups (G, \cdot) and (H, \cdot) are isomorphic if there exists a bijective function $f: G \rightarrow H$ such that $f(a \cdot b) = f(a) \cdot f(b)$ for all $a, b \in G$. Isomorphisms preserve the group structure.

6. Homomorphisms
A homomorphism $f: G \rightarrow H$ is a function between two groups such that $f(a \cdot b) = f(a) \cdot f(b)$ for all $a, b \in G$. The kernel of f , denoted $\ker f$, is the set of elements $a \in G$ such that $f(a) = e_H$. The image of f , denoted $\text{Im } f$, is the set of elements $h \in H$ such that $h = f(a)$ for some $a \in G$.

7. First Isomorphism Theorem
If $f: G \rightarrow H$ is a homomorphism, then $G/\ker f \cong \text{Im } f$. This theorem relates the structure of the quotient group to the image of the homomorphism.

8. Second Isomorphism Theorem
Let G be a group, H a subgroup, and K a normal subgroup of H . Then $(HK)/K \cong (H/K) \cdot (K/K)$ in G/K .

9. Third Isomorphism Theorem
Let G be a group, H a subgroup, and K a normal subgroup of G . Then $(H/K)/K \cong H/(K \cap H)$.

10. Fourth Isomorphism Theorem
Let G be a group, H a subgroup, and K a normal subgroup of G . Then $(H/K) \cap (G/K) \cong (H \cap G)/K$.

11. Direct Product
The direct product of two groups (G, \cdot) and (H, \cdot) is the group $(G \times H, \cdot)$ where the binary operation is defined component-wise: $(a, b) \cdot (c, d) = (a \cdot c, b \cdot d)$.

12. Direct Sum
The direct sum of two groups (G, \cdot) and (H, \cdot) is the group $(G \oplus H, \cdot)$ where the binary operation is defined component-wise: $(a, b) \cdot (c, d) = (a \cdot c, b \cdot d)$.

13. Quotient of a Direct Product
Let G and H be groups, and K a normal subgroup of $G \times H$. Then $(G \times H)/K \cong (G/K) \times (H/K)$.

14. Universal Property of the Direct Product
If $f: G \rightarrow G_1$ and $g: H \rightarrow H_1$ are homomorphisms, then there exists a unique homomorphism $f \times g: G \times H \rightarrow G_1 \times H_1$ such that $(f \times g)(a, b) = (f(a), g(b))$.

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