Regulator Insight: The Many Definitions of Resiliency

"She stood in the storm and when the wind did not blow her way, she adjusted her sails."

-Elizabeth Edwards

We are living in an era of near-constant change and upheaval. Across industries, leaders are looking to develop strategies and systems to make their organizations more resilient to change. The emergence of Covid in 2020 placed more focus on the resiliency of businesses and individuals as the world struggled to navigate an unknown virus and its implications for business, school, and social routines. As the year 2020 demonstrated, it is more critical than ever to be resilient and find ways to adapt and persevere through challenging times. Heightened political tensions, social justice movements, natural disasters, and Covid disrupted society's sense of normalcy and "business as usual" in 2020.   According to Google Trends (a data tool that generates popularity scores of search terms over time), general interest in the search term "resilient" grew in 2020 and 2021. This may be influenced by the waves of simultaneous, tumultuous events that occurred, which could have spurred interest among the general population on how to become more resilient.

## Google Trends +"resilient."

Displaying the monthly averages of popularity scores (instead of weekly scores as initially displayed by Google Trends), the visualization below reflects the rise of the popularity of the term "resilient" in Google searches. Establishing 2019 (pre-Covid) as a baseline, there is a noticeable rise in the search term beginning in late March-early April 2020, when the effects of Covid were beginning to change the way society functioned (enforcement of lockdowns, travel restrictions, masking, and remote work/school). The term continued trending upward in spring and hit its peak popularity score of 100 the week of September 13th (shown as an average of 91

below for the four weeks in September). As a comparison, the highest individual score *resilient* received in 2019 was 83 (March). During 2021, the term never reached peak and overall sustained popularity as it did in early 2020, but it remained, on average, higher than 2019's scores for 7 out of 11 months *(December 2021 values not available at the time of this report).*

On average, the term "resilient" trended higher in Google searches more months out of the year in **2020** and **2021** than it did in **2019**.
(A value of 100 measures peak popularity; a value of 50 means the term is half as popular. Data source: Google Trends)
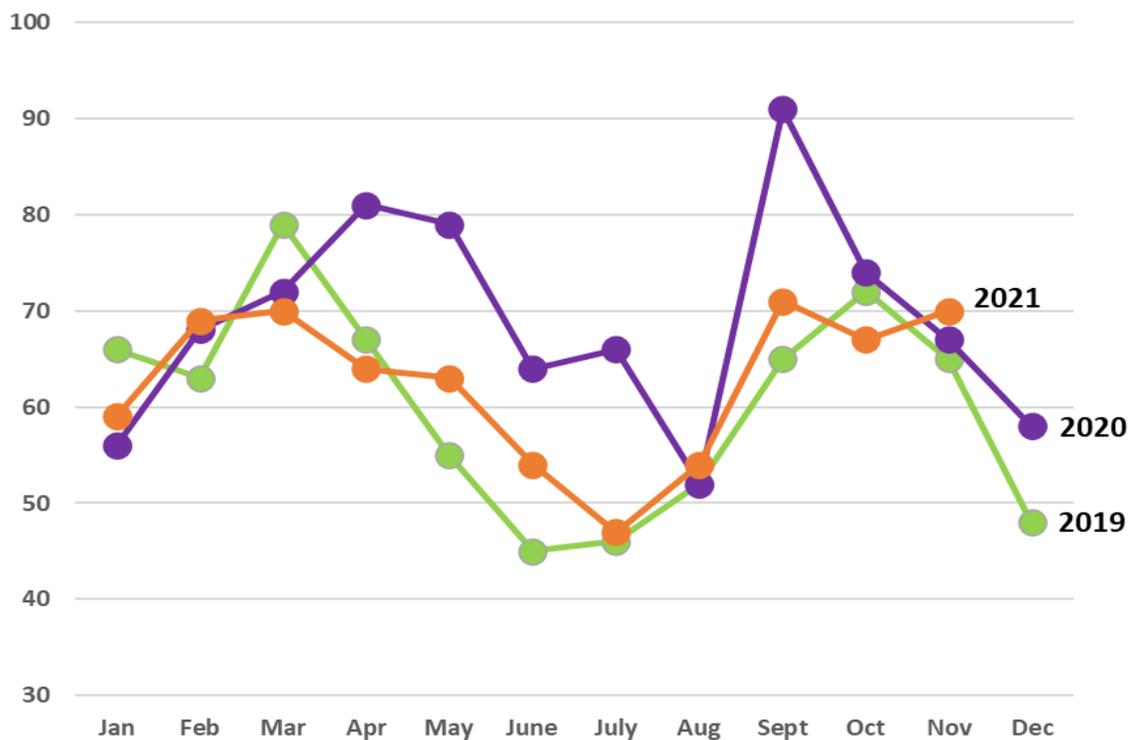
What does it mean to be resilient?

Resiliency is often associated with individual thoughts and behaviors that allow a person to overcome or bounce back from a difficult situation (the root of the word resiliency is derived from the Latin "resilio," meaning "to rebound). This focus on how the individual adapts and

responds to change is seen in fields such as psychology, health care, and the social sciences. However, the meaning of resiliency also extends outside this traditional individualistic perspective; it also includes a *systemic* approach that focuses less on people and more on interconnected systems and how they adjust to disruptions in the environment. Disciplines such as engineering, economics, organizational behavior, disaster management, and ecology incorporate these systemic approaches to resiliency.

> "**O**ver the past four or five decades, the notion of resilience has been taken up by many different disciplines. If you are interested in understanding the impact of major traumatic events like natural disasters, industrial disasters, global climate change, terrorist attacks, and war on child development, you have to think in terms of **multiple interacting systems**. Sitting down at the table with people who study engineering resilience, resilience in ecologies, resilience in communities and so forth has profoundly swayed my thinking."
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> **-Dr. Ann S. Masten** , from Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*

The concept of resilience dates as far back as ancient Rome and the early twentieth century, but it picked up momentum in the early 1970s by C.S. Hollis, who is considered the father of ecological resilience. Ecological resilience focuses on the amount of disturbance a biological system can withstand while still maintaining the same relationships between populations. How well an organism in the natural world responds to a change in its environment, whether the change is man-made (deforestation, oil drilling) or natural (fires, floods), determines its resilience. Ecological systemic resilience is measured by the time it takes for the system to return to equilibrium after the disruption or by how well the systems adapt yet still manage to keep the same functionality they had prior to the disruption.[1] Generally, the quicker the recovery, the more resilient the ecological system. This approach of returning a system to a state of equilibrium quickly is a core concept of resiliency throughout the various fields that have adapted a definition of the term to their discipline. Below are examples of definitions of resilience as defined by their academic disciplines. Definitions were excerpted from academic journals and other professional sources.

DEFINITIONS: SYSTEMIC DISCIPLINES

Engineering

- **"The key term of this definition is the ability of a system to adjust its functioning.** This makes clear that resilience is more than the ability to continue functioning in the presence of stress and disturbances. While the ability of a system or an organization to preserve and sustain its primary functions is important, this can be achieved by other and more traditional means. Continued functioning can, for instance, be achieved by isolating the system from the environment, or by making it impervious to exogenous disturbances." – Erik Hollnagle [2]

- One concept or resilience focuses on the 4 R's – **robustness, resourcefulness, redundancy, and rapidity**:
  - Robustness: the ability of systems to withstand a certain level of stress without suffering loss of function.
  - Resourcefulness: the ability to identify problems and resources when threats may disrupt the system.
  - Redundancy: the ability to have various paths in a system by which forces can be transferred to enable continued function.
  - Rapidity: the ability to meet priorities and goals in time to prevent losses and future disruptions.
    - Michel Bruneau and Andrei Reinhorn [3]

Economics

- "In economics, resilience is generally related to how markets behave during and following a shock. **It is concerned with the efficiency of resource allocation and input mobility during a shock, and how quickly the economy can return to pre-shock out- put levels following the shock.** Business continuity

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[2] https://bit.ly/31EPJTH

[3] https://bit.ly/3ovqn3d

services, which revolve around sourcing essential services to minimize losses during a shock, are a component here." - Adriana Keating, Karen Campbell, Reinhard Mechler, Erwann Michel-Kerjan, Junko Mochizuki,Howard Kunreuther, JoAnne Bayer, Susanne Hanger, Ian McCallum, Linda See, Keith Williges, Ajita Atreya, Wouter Botzen , Ben Collier, Jeff Czajkowski, Stefan Hochrainer, Callahan Egan [4]

Disaster Management and Disaster Risk Reduction

- **"Disaster adaptation, coping and mitigation are key elements of disaster resilience** that enhances the ability of a social system to mitigate the effects of adverse events." - Md. Enamul Huq, Md Nazirul Islam Sarker, Ram Prasad, Tapos Kormoker, Mallik Akram Hossain, Md. Mijanur Rahman, Ahmed Abdullah Al Dughairi [5]

Leadership & Organizations

- "Crisis literature offers two main approaches to conceptualizing organizational resilience: the first approach offers a trait-based view of resilience, while the second perspective considers resilience a developmental process. **The metaphor of resilience as a material that can absorb strain and maintain its shape often comes to mind when conceptualizing resilience as a characteristic; resilience is the 'ability of a system to return to an equilibrium state after a temporary disturbance.'** In the second approach, resilience emerges in response to setbacks and develops over time from continual exposure to hazards and crises. Resilience is framed as a form of learning, where an organization not only survives via positive adjustment to current adversity, but in the process strengthens its capability to overcome future challenges." – Winnie L. Teo, Mary Lee, and Wee-Shiong Lim [6]

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[4] https://bit.ly/3EFFKMs

[5] https://bit.ly/3GoEBsQ

[6] https://bit.ly/3ovFJoq

DEFINITIONS: INDIVIDUALISTIC DISCIPLINES

Health care

- "Five studies described negative associations between resilience and burnout; and one simply described resilience as the inverted score on a burnout inventory. **However, in several studies, resilience was described as more than just not 'burning out': involving positive adaptation, development of personal resources, personal growth, or a sort of hardiness." -** Helen D Robertson, Alison M Elliott, Christopher Burton, Lisa Iversen, Peter Murchie, Terry Porteous and Catriona Matheson [8]

- "In our research, we are interested in following people over time. **We define resilience very simply as a stable trajectory of healthy functioning after a highly adverse event.** Our work has typically focused on acute life events, what we call potentially traumatic events. Over the course of time, often for a number of years, we map out the trajectories of people's responses to those events. What we call a resilience trajectory is characterized by a relatively brief period of disequilibrium, but otherwise continued health." – Dr. George A. Bonanno [9]

- "[…] my current definition of resilience as it applies to people would involve a reintegration of self that includes a conscious effort to move forward in an insightful integrated positive manner as a result of lessons learned from an adverse experience. The idea **of moving forward is an important component of resilience** for me because this notion recognizes that some of the most resilient people, at least that I know, may have had or still have very severe PTSD that they struggle with every day. But they don't succumb to its negative effects. To me, **resilience involves an active decision**, like sobriety, that must be frequently reconfirmed. That decision is to keep moving forward**.**" – Dr. Rachel Yehuda, on the effects of post-traumatic stress disorder on recovery and resilience [11]

- "Currently, my favorite definition is that **resilience refers to the capacity of a dynamic system to adapt successfully to disturbances that threaten the viability, the function, or the development of that system**. I think this kind of definition facilitates the ability to think through and work together with people who are trying to prepare populations for dealing with disasters. We want to build that kind of

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[8] https://bit.ly/3y3glcK

[9] https://bit.ly/3lHUP8y
[11] Ibid.

capacity to adapt. I think it is also the kind of definition you can use across system levels, from a molecular level to the levels of human behavior in family, community or even societal contexts." – Dr. Ann Masten [12]

- "To my mind, **resilience is a process to harness resources to sustain well-being**. I like the word 'process' because it implies that resilience is not just an attribute or even a capacity. I like the phrase 'to harness resources' because it asks us to identify what are the most relevant resources to people in places like Afghanistan, Niger, or the United States. And I like the expression 'sustained well-being' because resilience involves more than just a narrow definition of health or the absence of pathology. So I would define resilience as 'a process to harness resources in order to sustain well-being.' - Dr. Catherine Panter-Brick [13]

Psychology

- The American Psychological Association (2014) defines resilience as **"the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress."**
- "Psychology scholars tend to use resilience as 'a descriptive label […] [for] individuals who appear to function surprisingly well under environmental conditions judged to be adverse and stressful.' **This understanding of resilience maintains its original connotation of persistence**." – Philipp M. Darkow [14]

Social Sciences

- "Aaron Wildavsky introduced the term resilience into the broader social sciences. He distinguished between anticipation, defined as making an effort to 'predict and prevent potential dangers before damage is done' […and…] **resilience as the capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back."** – Philipp M. Darkow [15]

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[12] Ibid.

[13] Ibid.

[14] https://bit.ly/3DC4ljI

[15] Ibid.

The many definitions of resiliency, visualized.

The graphic below depicts the popularity of words used in defining resilience, as taken from this report. *Process, system, ability, resources, shock, adaptation, adjustment, adversity, functioning,* and *learning* are some of the most widely used words to define resilience for systemic and individual perspectives.
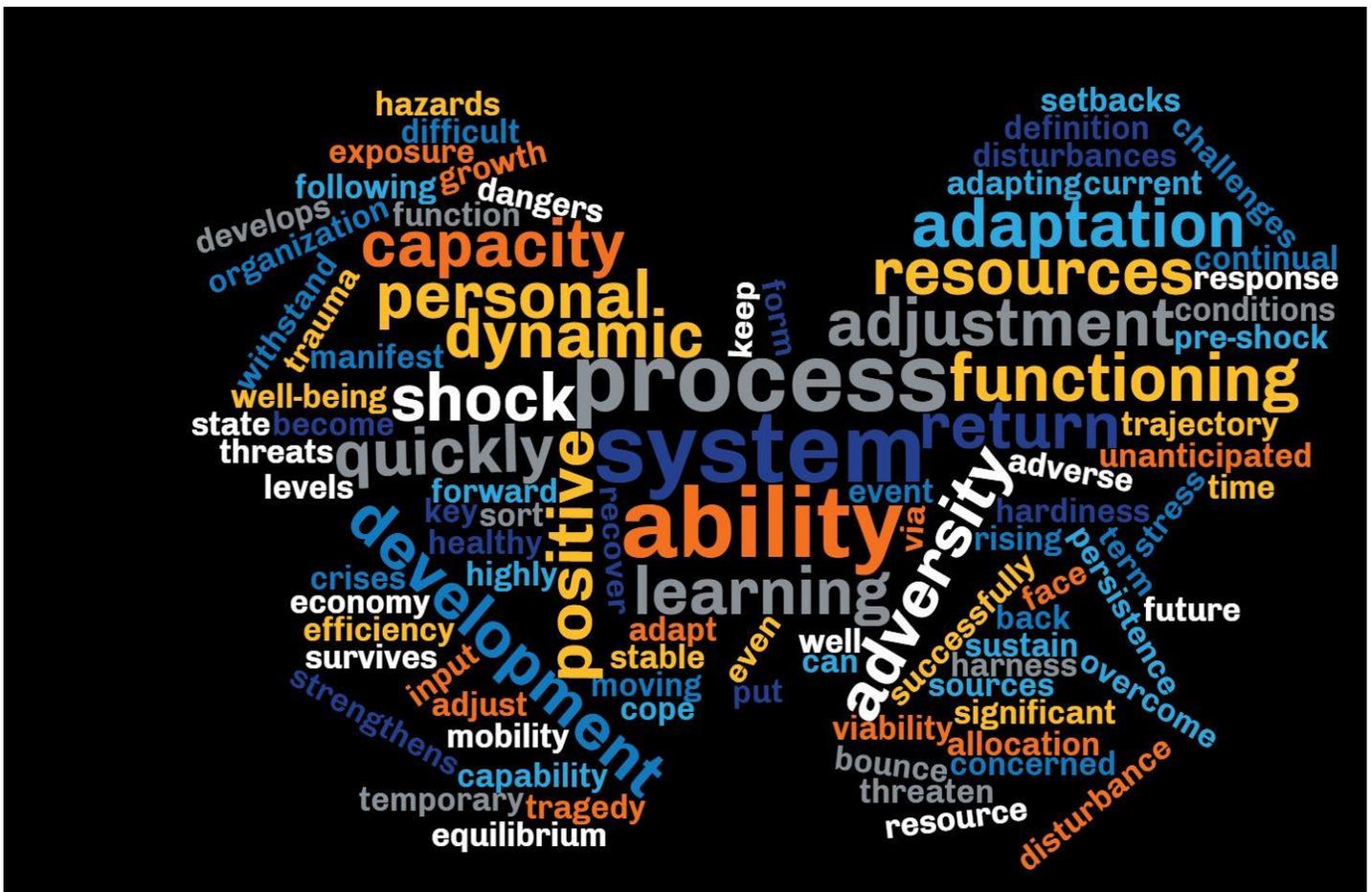
So, what does this all mean?

While resiliency has many definitions depending on the context, the term generally shares two commonalities: a precipitating adverse event, and the response to it. If the response to the shock event generates positive outcomes, the individual or system is said to be resilient. A resilient organization/individual can bend and not break in the face of an adverse event.

We often hear the term "resilient" when a catastrophic event occurs in the news. When Covid emerged as a threat to public health, Google searches for the term rose, indicating consumer interest and knowledge of what it means to be resilient. Academic studies have also seen an increase focus on resiliency research: scholarly publications addressing resilience have increased from 0.02% in 1973 to just over 0.40% in 2017. As the world reckons with the ramifications of climate change (including increased natural disasters), economic disparities, social injustices, and potential future pandemics, resiliency will be essential for people and organizations to survive and thrive.

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