



Conceptualizing Economic Principles, Social Entrepreneurship, and DEI in the Classroom With the Movie CODA

The Academy Award-winning film CODA (2021) provides a unique framework through which to explore and develop key economic principles and entrepreneurship topics using diversity, equity and inclusion (DEI) themes. By following the lead character's "coming of age," viewers see her struggle with crucial life and business choices as the only hearing member of a deaf family. The family struggles to keep their third-generation family business, a fishing trawler based out of Gloucester, Massachusetts, viable. This article outlines an immersive curriculum suitable for upper-division elective economics courses and introductory applied masters-level economics courses to explore the relationships between markets, business, entrepreneurship and other topics through the lens of "social entrepreneurship"—business enterprises designed to serve marginalized populations. Learning objectives are discussed as well as exercises that bridge rational choice, firm profit maximization, social welfare optimization, regulation and industrial organization, social entrepreneurship, and other concepts. In addition, these core economic concepts provide a mechanism for using an entrepreneurial framework for addressing diversity, equity, and inclusion (DEI) issues within an economics curriculum.

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1. Introduction

Social entrepreneurship (SE) and economic empowerment have emerged as significant components of economic development studies (Bornstein, 2004; Yunus, 2007; Brooks, 2009). Hundreds of courses have been added to curricula in business and economics programs over the past decades (Schatz, 2018) that emphasize these themes. Indeed, some industry leaders believe that social enterprises are the future of business (Yunus, 2010; Schatz, 2018). Paradoxically, despite the fact that economists have been leaders in conceptualizing and studying economic development and development policy (Bauer, 1976; Bauer, 1984; Easterly, 2006; Mombasa, 2009; Bauer & Cohen, 2010; Easterly, 2006; Banerjee & Duflo, 2011; Lal, 2013; Easterly, 2014), entrepreneurship and SE, in particular, remain understudied and underutilized in economics curricula at the undergraduate and graduate levels. In part, this lag in curriculum design and application may be due to a lack of clear understanding of how social entrepreneurship fits within a traditional economics curriculum.

This paper attempts to bridge this gap by outlining a classroom curriculum suitable for upper-division economics electives that conceptualizes and fuses social entrepreneurship and core economic concepts using contemporary cultural references in the 2021 Academy Award-winning movie narrative film *CODA* (Child of Deaf Adults). Movies, as a visual storytelling art form, are increasingly recognized as an effective mechanism for teaching economic principles to undergraduate students (Bookman & Bookman, 2009; Staley, 2016; Staley, 2018a; Staley, 2018b; Ahlstrom & Mixon, 2020). *CODA* is unusual in that it's one of the few popular movies that puts business enterprise, entrepreneurship, and economic decision-making at the center of the story and explicitly within a diversity, equity, and inclusion (DEI) context (Heder, n.d.).

Social entrepreneurship is well suited for engaging contemporary students, particularly undergraduates, in experiences relevant to their everyday lives in nontraditional ways. The content is fundamentally humanist in its approach, allowing instructors to connect to students through values as well as the traditional analytic tools of the economics discipline. Moreover, SE curricula create a natural and seamless connection to larger strategic concerns about DEI in higher education.

The remaining sections of this paper provide an overall framework for integrating *CODA* into social entrepreneurship curricula as well as critical background on the story and movie. Section 2 provides a brief overview of the relevance of *CODA* as the pedagogical hinge for teaching about economics to contemporary students. Section 3 provides an overview of the emerging field of social entrepreneurship and its relevance to economics. While relatively new to mainstream economics, social entrepreneurship can be an effective way to introduce undergraduate students from a wide variety of backgrounds and lived experiences to economic concepts framed by a business and market orientation. Section 4 provides an overview of the movie's plot to provide a context for the modules learning objectives and critical exercises. Section 5 provides an overview of the critical themes that can frame discussions of core concepts such as economic decision making, opportunity costs, regulation, social welfare economics and how to improve our understanding of how marginalized individuals relate and engage with larger communities. Section 6 provides the outline of a learning module that puts economic concepts and fundamentals at the forefront of a discussion of *CODA*, discussion prompts, discrete activities related to marginalized communities, social entrepreneurship, and the role of business. The final section concludes with observations about general applications of the learning module as the scaffolding to teaching in economics more broadly.

2. CODA, Economics, and Learning

CODA is particularly suitable and relevant for bringing SE, DEI, and entrepreneurship

concepts into economics-focused curricula. This “coming of age” film hit commercial theaters at the Sundance Film Festival in January 2021 and went on to earn Best Picture, Best Adapted Screenplay, and Best Supporting Actor awards at the 94th Academy Awards. The movie streams on a large, accessible digital platform.

CODA is a “hidden gem” in terms of economic content, providing rich levels of subtext that can launch discussions of basic economics, political economy, and enterprise (Bookman & Bookman, 2009; Staley, 2018a; Ahlstrom & Mixon, 2020). What may not be as easily appreciated, however, is the degree to which narrative films such as *CODA* lend themselves to extended treatments that advance critical thinking, learning, and application of these concepts. When set within a holistic pedagogical framework, these movies provide an immersive opportunity to apply higher levels of thinking and encourage deeper thought about economic concepts, principles, and their relevance to contemporary life. These opportunities are particularly important and relevant to DEI, which is complex and nuanced, and must be contextualized in specific cultures.

These themes and connections, however, are not direct. Thus, economics instructors require a deliberate curriculum with scaffolding that directs the attention of students and other learners to these issues. Fortunately, *CODA* provides a vehicle for creating an interactive teaching module focused on introducing students to and applying critical economic concepts such as opportunity costs, regulatory capture, utility maximization, institutional constraints, social entrepreneurship, business development more broadly, and understanding the nuanced role empathy plays in designing entrepreneurial solutions in addressing the needs of marginalized communities. Appendix A provides more detail on the plot and characters that make *CODA* suitable for economic analysis and application of principles.

A. Social Entrepreneurship and Economics

Social entrepreneurship can be defined as the use of for-profit business tools and practices to explicitly address social problems and concerns through a financially sustainable enterprise using market-based revenue streams. While a consensus has not emerged within the expert literature on a specific definition, social entrepreneurs broadly are innovators who embed solving social problems in the establishment of programs, enterprises, and businesses (Bornstein, 2004; Brooks, 2009). Social entrepreneurship in its broadest form has existed formally in business in market economies at least since the 1300s. The more contemporary concept is typically traced to Muhammad Yunus and the establishment of Grameen Bank, a microlending enterprise, in Bangladesh in 1973 (Schatz, 2018). The growth and profitability of these businesses led to a revolutionary rethinking of the potential role of business in addressing the needs of marginalized populations in low-income countries as well as in high-income Western economies (Bornstein, 2004; Yunus, 2007; Yunus, 2010; Schatz, 2018). Thus, social enterprises encompass a broad range of business, from large national companies such as Whole Foods (now a subsidiary of Amazon) to micro-enterprises that support single individuals or families on budgets of less than a dollar a day in very low-income countries and cities. Social entrepreneurship business models range from nonprofit organizations supported on earned-income streams (e.g., Goodwill) to “fully integrated” businesses where marginalized populations are an integral part of the business. An example of the latter might include a coffee shop that employs refugees to facilitate their integration into mainstream society, or a construction company employing homeless veterans as a pathway to more sustainable and consistent paid work.

CODA provides an example of an integrated social enterprise – a family-run fishing trawler that provides full-time employment and financial support to a deaf family, the Rossi's. While about ten million Americans are hard of hearing, about one million are “functionally deaf”

and just four percent are under the age of 18 (Mitchell, 2006). Thus, deaf individuals, families, and communities are often overlooked or marginalized because the mainstream economy and dominant culture focus on the broader market which is a hearing community. The fishing business in CODA is an integral component of the Rossi family's identity and a key source of family cohesion, support, and resilience when confronted with the challenges of navigating the hearing world. These characteristics of support, empowerment, and protection for individuals as they struggle against an indifferent or hostile community are common features of social enterprises. The business is more than an income generator. It's a "club good" where specific benefits accrue to the members of the family that cannot be accessed by those from outside (Buchanan, 1965).

CODA's story centers on the Rossi's teenage daughter, Ruby, the only hearing member of the family (Heder, n.d.). Both parents and her older brother are deaf. Ruby Rossi is struggling to find her place in a world that does not easily reconcile the deaf and hearing communities. While the benefits of the family business are clear at first, the institutional constraints that bind Ruby's development and aspirations create fundamental tensions that threaten the viability of the family business. The story moves beyond one of a deaf family and the struggles of their teenage daughter "coming of age." The movie also centers the financial security of the Rossi family on their multigenerational family business, a commercial fishing boat, as a critical subtheme providing a storyline that facilitates empathy and understanding for marginalized individuals and communities (DEI). The individual and family character sketches help viewers understand the preference sets for key characters, how institutional constraints bound their decisions, and consider the consequences of information and uncertainty in personal decision-making. In entrepreneurship studies (and engineering), this framework is typically referred to as "design thinking," the practice of understanding the needs of customers or users of a product or service before its development or distribution.

By using critical plot points, the movie further provides a framework for examining the role of privately-owned business enterprises, assessments of opportunity costs, and rational choices to empower individuals through self-directed work and labor. The movie's plot rests on the hearing world's—the social component—ability to recognize, validate, and adapt to the needs of a marginalized community through raised awareness and sensitivities. When the hearing community fails to recognize these limits, the Rossi family's livelihood and identity are challenged and potentially crushed. Thus, CODA includes a social change element that can engage contemporary undergraduate students by identifying high- and low-cost ways to facilitate the growth and development of the Rossi family, the broader community, and the fishing industry.

3. Module Overview and Critical Themes

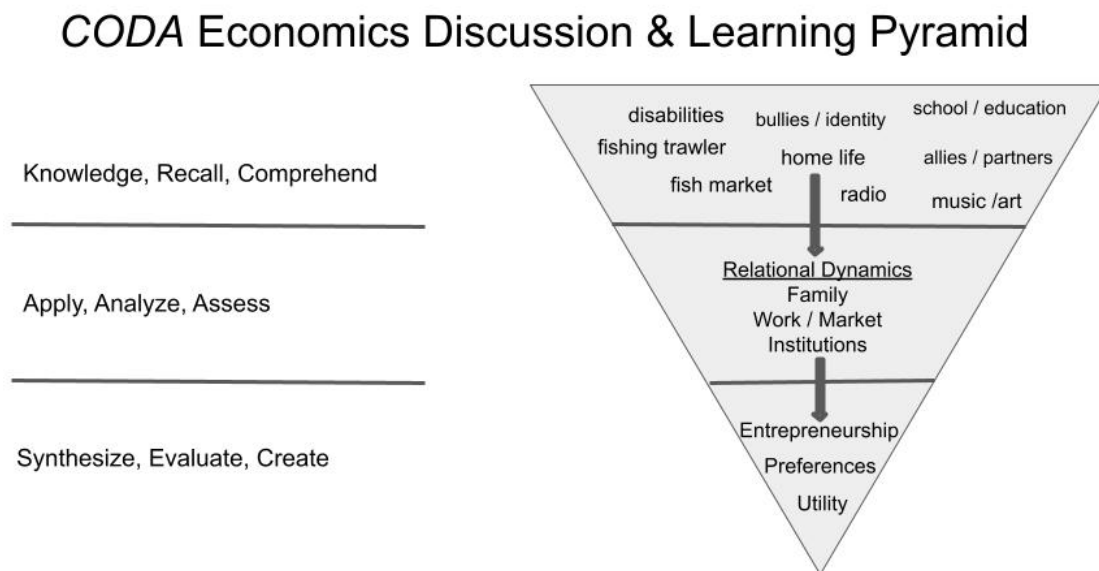
CODA's rich and textured plot provides opportunities to discuss critical and relevant themes in economics (see Appendix A). The story itself is grounded in a realistic economic, social, cultural, political, and institutional context, highlighting entrepreneurial decision-making, dynamic utility optimization, firm efficiency, and business management decisions. As such, CODA is a useful prism for examining a wide range of microeconomic and institutional topics such as

- Individual and joint utility optimization
- Constrained decision making
- Entrepreneurship, enterprise, and value creation
- Bureaucratic rule-making and implementation

- Economic and personal empowerment
- Technological change and profitability
- Efficient resource optimization in the firm
- Monopoly power and monopolistic competition
- Uncertainty and incomplete information
- Individual and group marginalization
- Mediating institutions

The primary focus of the module described below is on how rational choice is framed by initial resource endowments, technological efficiency, constraints imposed by markets and social institutions, and regulatory institutions. The general structure of the module includes three exercises that map over core learning objectives from Bloom's taxonomy of learning

Figure 1: Workshopping CODA Using Bloom's Taxonomy



(Anderson & Krathwohl 2000). Deep learning involves engaging students at multiple levels. At the first level is working with students to recall, identify, and observe critical elements during the exercise. This entails having students watch the movie and identify critical details and relationships so they can create a knowledge base for further discussions. The second level involves applying key principles and concepts to analyze the dynamics within the movie. The third, and deepest level of learning, requires students to synthesize and evaluate the movie to think about more generalized applications or, in the case of entrepreneurship, identify and implement solutions to problems.

The exercises described below can be combined into a daylong workshop or conducted independently as three separate activities over a longer period of time in a classroom context. Combined, the tasks include approximately 400 minutes, or a 6.5-hour commitment (inclusive of movie screening). A three-credit-hour class in the U.S. system of undergraduate higher education implies a 10-hour per week commitment, in and outside of the classroom. Thus, these activities are within general guidelines and recommendations for undergraduate education expectations and could easily be completed within a one-day comprehensive workshop environment.

The core foundational knowledge and information needed for students to participate in an informed discussion and deep dive into the core economic concepts involves a movie screening. In this sense, the “research” and details are largely contained within one well-defined activity. A pre-screening discussion is often useful to help students focus attention on critical concepts, ideas, or actions that might be missed if they focus solely on the entertainment value of the movie. The second major exercise is a classroom workshop using small-group discussions to allow students to identify critical themes, explore concepts, identify relevant plot points, and how an economic framework might shed light on decisions, behavior, and outcomes. The third set of exercises asks students to write up their reflections through discussion boards and a synthesis paper. The discussion posts can use specific prompts (discussed below), but the reflection paper should ask students to identify, analyze, and apply economic concepts to key elements of the movie and its story of the Rossi family. Figure 2 provides an overview of how these time commitments and tasks might lay out in a workshop or classroom series format.

Figure 2: Organization of Movie-Centered Workshop / Learning Module

| Exercise | Activities (Estimated Times on Task) |
|------------------------|--|
| Movie Screening | <ul style="list-style-type: none"> • Pre-screening discussion (20 minutes) • Movie screening (120 minutes) • Post-screening debriefing (30 minutes) |
| Workshop/ Classroom | <ul style="list-style-type: none"> • General discussion (15 minutes) • Small group discussion (45 minutes) • Reporting out (15 minutes) |
| Writing | <ul style="list-style-type: none"> • Discussion board post & comments (30 minutes) • Integration & synthesis paper(s) (120 minutes) |

A. Core Economic Learning Objectives

Intentional and rigorous use of CODA to examine entrepreneurship, microeconomic principles, social welfare economics, and the micro-foundations of economic development will benefit from the explicit incorporation of several learning objectives. At the end of the module, students should be able to

- A. Understand and recognize the role individual autonomy plays in framing choice sets, and how this alters formal and informal constraints on efficient decision-making. As Ruby

becomes more independent through her investment in human capital, for example, her optimization function changes as her choice set broadens. This broader choice leads to divergence from her family's utility function, affecting interpersonal dynamics.

- B. Recognize and evaluate the role of regulatory structures, whether formal or informal, on individual choice, firm profitability, and economic sustainability.
- C. Identify and assess the familial, social, cultural, and political constraints on self-actualization and personal empowerment. Social constraints such as perceived and real prejudice against deaf persons influence the choice set available to the Rossi family. This constrains the opportunities available to the Rossi family for securing economic independence and financial sustainability.
- D. Critically analyze the impacts and potential to engage social entrepreneurship as a mechanism for empowering marginalized individuals and communities. The family fishing trawler provides economic independence that, at least for a time, allows them to more fully exploit their human capital. As the legal institutional environment changes, students should be able to evaluate how these shifting institutional constraints influence the efficiency and viability of the family business.
- E. Identify, recognize, and understand the role of an entrepreneurial or growth mindset in furthering personal and community development. The Rossi family is challenged by several changes in their environment. They are forced to adapt or face financial ruin as well as their degradation of human capital through family disintegration.
- F. Synthesize ideas, concepts, and principles related to dynamic workplaces and economic environments, and how entrepreneurs identify and overcome barriers to business development, whether through conventional entrepreneurship or social entrepreneurship.

B. Economic Content Learning Blocks

More specifically, the economics portion of the curriculum can be broken down into four conceptual learning blocks.

Rational Choice. The cornerstone of neoclassical economics is a rational choice rooted in utility maximization. As in any well-developed story, each of the characters in *CODA* has an "arc," a progression of growth throughout the movie. These arcs can be explained in economic terms using the concept of utility function, utility optimization, and temporal change in preference sets. For example, the lead character, Ruby, finds her preference set expands as she becomes more aware of new opportunities beyond the fishing industry as she invests in her human capital as a singer. Rather than solely optimizing over family wages and her identity as a dutiful daughter in the family business, she now can add the possibility of becoming a successful singer. Moreover, as her skills as a singer become more developed, the effect is to raise her expectations about potential income (and reservation wage), allowing her to consider moving to higher utility curves.

Utility curves also shift as certain constraints are imposed and lifted. For example, when Ruby decides to leave the fishing community, Leo's value as a mediator and leader within the family firm changes. This provides an opportunity for educators to show the difference between optimizing on a specific utility curve and optimizing at a higher utility curve. Suppose Leo's utility is a function of his wage income and his desire for more personal responsibility in the family business. This is a typical trade-off in the labor market. With Ruby's departure, Leo can to optimize at a different point on his utility curve. If Leo's leadership leads to a more productive

output, his budget constraint would shift outward, allowing him to optimize on a higher utility curve. Similar trade-offs and utility optimization problems can be illustrated with each major character - their father, Frank, their mother, Jackie, and even the choir teacher.

Firm Optimization. A critical driver of CODA's plot is the financial viability of the family business. Their fishing trawler is their sole source of support. Their access to fishing, however, is constrained by federal quotas, a monopoly wholesale market, and other regulations that increase costs without commensurate increases in revenue. As a deaf family, Ruby's role as the only hearing member becomes critical in their ability to interact with the hearing community. Ruby's role starts out as critical to the entire operation. However, over the course of the movie, the financial viability of the family business is jeopardized by potential changes in its labor force (Ruby's departure) and federal regulations. CODA provides an opportunity to discuss how shifts in firm costs alter the supply curve and profitability of individual firms.

Figure 3: Change in Rossi Family Business Average Cost Curve with Regulation

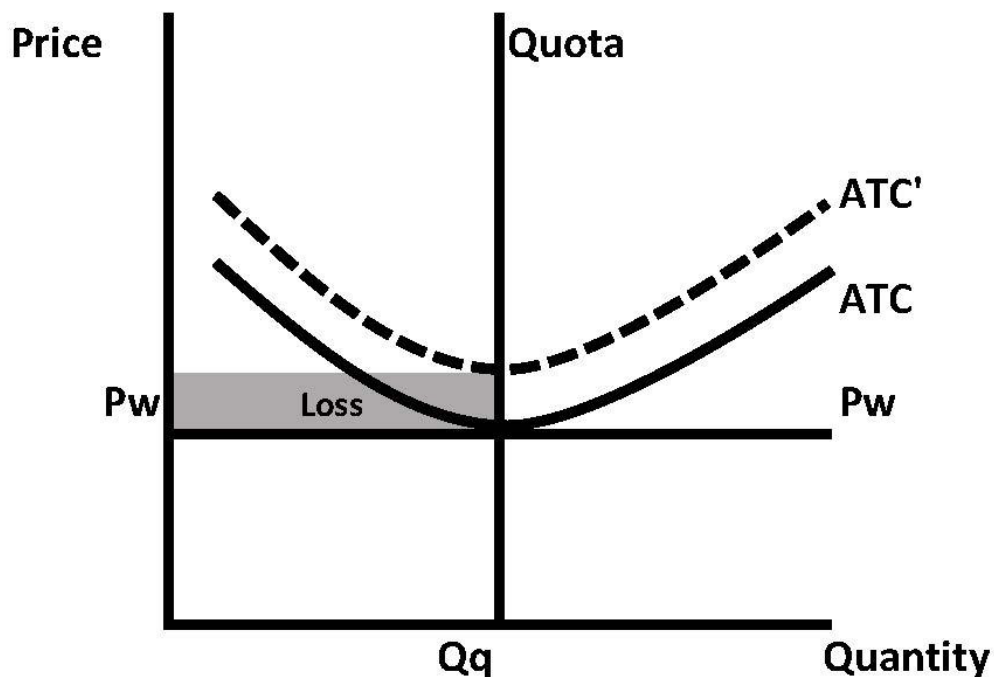


Figure 3 illustrates this dynamic which represents basic principles established in microeconomics. As a micro-enterprise, the Rossi fishing trawler is a price taker, represented by the horizontal line P_w . They have very little ability to influence the price of their catch because their wholesaler operates as a monopoly. This situation is illustrated dramatically in the opening scenes of the movie when Ruby complains that their wholesaler and fishmonger's price per pound barely covers the cost of their daily catch. This dialogue implies that the Rossi fishing trawler is barely covering its costs - the average cost (AC) is tangent to the horizontal line P_w . This incentivizes the Rossi's to find an alternative to the traditional wholesale purchase and

retail distribution system by setting up a co-op. Notably, co-ops are common in specialized markets characterized by small owners such as fishing.

The case of the Rossi fishing trawler also presents an opportunity to discuss the effects of regulation on businesses, particularly small businesses. The federal fishing quota is a classic example of how regulations constrain profits for businesses. The quota is justified as a mechanism to prevent overfishing and preserve the size and diversity of fish populations. In Figure 3, this is represented by the vertical line that sets production for the Rossi family at Q_q . While financially vulnerable, the Rossi family business is sustainable at this quantity and price. But the multi-generational Rossi business is at risk, barely surviving financially, making it vulnerable to small changes in the quota or shifts in other costs. For example, Ruby's departure would shift the AC curve up for the family business if they had to hire a translator or divert resources to learning how to communicate with the hearing world to replace Ruby. (Recall that Ruby is not paid wages.) If the quota remains the same, and the wholesale price remains the same, but the trawler's AC curve increases, the result will be a financial loss as depicted by the shaded area in Figure 3.

A critical plot point is a new regulatory requirement that fishing boats carry federal "observers" to monitor the daily catch. These federal monitors are paid for by the individual boat owners. While in the movie, the monitor serves the purpose of bringing into question the ability of the deaf Rossi's to safely fish, the other effect is to raise costs and shift the cost curve for the Rossi trawler up (to the dotted line). This pushes the family business beyond profitability.

Thus, while in the movie the federal government shuts down the trawler for a perceived safety violation, the economic consequences for the business are devastating. Notably, this situation is an opportunity to discuss more market-oriented alternatives such as tradable permits that allow businesses to buy and sell fishing rights and establish property rights to fisheries.

Similarly, the family business supply curve can be used to examine the potential of quotas to sustain or undermine the family business. Currently, the movie implies that the federally imposed quota of fish is at the point where marginal costs equal the P_w . If the quota reduces the number of fish that can be caught—a point to the left of the Q_d —then the family business is no longer profitable and operates at a loss, driving it out of business.

Social Welfare Economics. DEI concerns and social entrepreneurship opportunities put social welfare economics front and center in the economic story behind *CODA*. The Rossi's represent a marginalized population in a metaphorical and literal sense. The deaf community is small and must function in a world designed around a hearing population. The American Community Survey estimates that about 11 million Americans, or about 3.6% of the total population, are deaf or significantly hearing impaired. American sign language, however, is used by fewer than 500,000 people. Thus, most deaf individuals must navigate a world that is unaware of their plight. Indeed, raising awareness about the deaf community is one of the virtues of *CODA*.

In *CODA*, the Rossi family is an independent, self-sufficient family contributing economically and socially to their community. The trials of the Rossi family can be evaluated in a social-benefit social-cost framework as well as from the perspective of Pareto Optimal outcomes. Throughout the movie, for example, the Rossi family represents an ongoing, largely successful, multigenerational family business. Their ability to live independent lives as fishers is not compromised by being deaf. Indeed, the small family business is critical to their independence and identity as a family unit. While the business faces economic headwinds from regulation, the business is closed by an insensitive and rote interpretation of a regulation in federal law, not an inherent inability to perform tasks safely. In short, the closing of the family

business is suboptimal from a social welfare economic perspective.

In terms of Pareto optimality, everyone is likely worse off if the Rossi family business closes. While another hearing family might take their place, or another fisher takes over their quota, the Rossi family is clearly worse off. More importantly, the community is worse off because the Rossi family would either be forced into economic dependence on other suboptimal (for the family) alternatives, whether government, the charity of others, or a job that pays as much but provides less gratification. By revealed preference, any alternative occupation would be suboptimal for the family. To the extent this marginalization and dependence are exacerbated over time, economic growth and development will likely be less.

Social Entrepreneurship. The movie is an excellent opportunity to fully integrate the emerging field of social entrepreneurship into economics and economic education. The Rossi commercial fishing enterprise is not just a family-owned “microenterprise”—a business with zero or a very small number of employees. The Rossi business is a fully functioning business enterprise driven by an entrepreneurial vision for its role in solving a problem – monetizing market-generated value to sustain a family living in the outside margins of society. The role of the business in the movie provides a larger micro-institutional framework in which a marginalized population—deaf families—remains sustainably independent and interacts with the broader community and economy as equals. Thus, beyond the social welfare dynamics of the business, the enterprise serves as a practical tool for addressing inequities and overcoming disadvantages faced by marginalized individuals and populations. Moreover, the social entrepreneurship component allows these populations to engage more broadly through voluntary exchange and a dynamic marketplace without requiring subsidization or charity.

Figure 4 maps out several critical economic concepts and principles over elements of the movie.

Figure 4: Potential Economic Content Blocks for *CODA*

| Content Block | <i>CODA</i> Story Anchor | Economic Concept |
|-----------------|--|---|
| Rational Choice | <ul style="list-style-type: none"> • Ruby’s coming of age • Leo’s desire to take leadership • Mr. V’s investment in Ruby’s singing talents • Ruby’s changing role in the family business • Reluctance of family to allow Ruby to attend college | <ul style="list-style-type: none"> • Human capital • Utility optimization • Joint utility consumption • Information, uncertainty, and expectations • Information asymmetries |

| | | |
|--------------------------|---|---|
| Profit Maximization | <ul style="list-style-type: none"> • Financial sustainability of the family business • Impact of federal fishing quotas and regulations on business costs • Wholesale monopoly on fish catch • Politics of creating a co-op | <ul style="list-style-type: none"> • Average costs • Marginal costs • Returns to scale • Quotas & profit maximization • Regulatory impacts on business costs • Wholesale competition |
| Social Welfare Economics | <ul style="list-style-type: none"> • Rossi family economic independence • Ruby and Leo Rossi's agency and ability to make decisions about their future • Personal and collective interdependence • Isolation of the deaf community and Rossi family • Role of the family business in financial sustainability of the Rossi family • Trade-offs of bureaucratic rule making to protect fisheries as a collective good • Monopoly versus competitive wholesale market for fish | <ul style="list-style-type: none"> • Costs / benefits of regulation • Environmental preservation & conservation • Environmental sustainability • Empowerment through entrepreneurship • Pareto optimal outcomes from intervention • Social and cultural constraints |

| | | |
|-------------------------|---|--|
| Social Entrepreneurship | <ul style="list-style-type: none"> • Deaf family struggles and family dynamics due to isolation • Family concerns about Ruby's attendance at college in another city • Ability to communicate outside their deaf family (community) • Struggles with interacting with mainstream social and business communities • Inefficiencies and difficulties faced by the Rossi family in negotiating "fair" prices for fish at wholesale prices | <ul style="list-style-type: none"> • Joint utility functions • Equity in business outcomes • Human capital and inclusion • Principal-agent functions and dynamics • Financial sustainability • Social welfare optimization • Empowerment through entrepreneurship • Innovation in institutional business arrangements • Expectations and innovation • Division of labor and productivity |
|-------------------------|---|--|

4. Sample Activities and Exercises

This section outlines several exercises and activities that can be used to explicitly incorporate content from *CODA* into applied microeconomics, economic development, equity, and social entrepreneurship discussions. While the following exercises can be incorporated into introductory economics courses, the content requires higher levels of critical thinking and application. Thus, they may be best suited for upper-division classes engaged in economic development, intermediate microeconomics, political economy, or entrepreneurship. The learning pyramid discussed earlier and summarized in Figure 1 can be useful for organizing and planning specific exercises. The discussion below provides a general structure for implementing the workshop outlined above.

Movie Screening. Watch *CODA*, preferably as a group or in a collective setting. The movie screening should be immediately followed by a brief (20 min) discussion of the movie, its main themes, artistic elements, and character arcs. The discussion should also explicitly acknowledge the deaf community as a marginalized population, the role of ASL in communicating within and outside the Rossi family, and the reactions from the broader community as depicted in the film. Students should be asked to identify specific characteristics of the family business, its cost structure, and the role of the family in ensuring the business operates efficiently. Students should also be challenged to think about the equity implications of the commercial fishing industry based on the availability or ability to utilize certain skills, aptitudes, and experience.

Reflection Writing (Short Form). Students should write a 500-word reflection on *CODA* based on the following prompt: "What theme or character in *CODA* did you connect with on a personal level? Why?" The identification of this character becomes the lens through which

the actions of others, and the economic principles, are viewed, analyzed, and synthesized. This reflection can be in an independently written paper submitted to the instructor, an extended blog post, or another format. If the papers are independently written, class time should be devoted to discussion of the main themes. If the exercise is assigned remotely, writings should be posted to a discussion board platform such as Canvas, Blackboard, or Packback, or an online peer-review platform such as Kritik, requiring students to reflect on at least three other students' posts.

Small Group Discussion. In the classroom (or online), randomly assign students to small groups with at least four members. Have the students present their reflections to each other and discuss for 15 minutes. Then have each group answer the following prompt and report to the full class: "We were inspired by the way [character] responded to the [hurdle / barrier] by doing [action] because [reasoning]." Students should be asked about how the behavior of these characters reflected their interests, or, more technically, their utility function. They should also speculate how the specific talents, abilities, and experiences of the Rossi family may be similar or different from their mainstream fishers and fishing community, and how this might influence their ability to sustain a commercially viable business. These observations can anchor a prompt asking them to consider how their preference set, or changes in preference sets, might affect their decisions, estimates of potential benefits to changes in circumstances, or expectations about future returns to their actions.

Synthesis Paper. Task students with writing a 1,000-word essay using specific references to *CODA* to discuss how individual identity, community support, and a growth mindset hinder or encourage the characters to act, identify, confront new circumstances, or overcome barriers to personal and familial growth. They should be asked to explicitly address social entrepreneurship and whether this is a useful concept or framework for evaluating the actions of the characters and the Rossi family. This paper can have students focus more specifically on the family business, reflecting on the choices they faced as their circumstances change through individual choices or external decisions such as federal catch monitors or changes in the quota. The paper should conclude with a paragraph linking one or more learning objectives to the plot, theme, and character arcs in *CODA*. Guidance for the synthesis paper can include the identification and application of specific economic terms, principles, and concepts.

A. Discussion Prompts and Content

Discussions can focus on developing a critical viewpoint for developing an entrepreneurship mindset, how social entrepreneurship might be similar or different from traditional entrepreneurship, how this mindset can be interpreted through a neoclassical economic lens, and the role social enterprise might play in achieving social change through the private marketplace. These discussions can be organized around critical themes and have an explicit applied focus. The movie provides the "data" that students should use to test and apply their understanding of economics in a practical setting.

The discussion prompts should not be framed as a "yes / no" binary. Discussions of ambiguities, contradictions, dilemmas, and paradoxes in business and personal relationships, like the real world, should be encouraged. These open and candid discussions are essential for arriving at workable, sustainable solutions to social problems.

Several questions can be posed to students to help them approach the movie with a critical lens rather than a primary one of entertainment. For example, they should be prompted to consider,

- Whose point of view (POV) centers the movie's plot. How would they define their utility curve? What information asymmetries or expectations might influence their decisions?

How does their preference set differ from other characters in the movie?

- The role of Mr. V and the Berklee College of Music in setting the trajectory of the plot. How does this put into action concepts such as human capital, expectations, reservation wages, utility maximization, and information asymmetries?
- The role the fishing profession and community plays in the actions and attitudes of the characters as institutional constraints. How does this environment bind the choice sets of the characters? Are these perceived or real attitudes? How do these perceptions influence the decisions of individual actors? The regulators? How do these actions and attitudes hinder or support the Rossi family's efforts to be financially sustainable?
- The primary sources of conflict in *CODA*'s story. How can this conflict be framed using an economic framework rather than through more conventional narrative forms? The film provides its solution and resolution, can students think of alternative mechanisms to produce a sustainable result that benefits the Rossi family and the broader community?

While much more afield than content in traditional economics courses, many students will benefit from assistance in processing the story and images presented by the movie. This is particularly true in upper-division courses where students grounded in economic theory and principles sometimes struggle to apply these concepts outside the classroom. A series of questions can help prompt a robust discussion of how films frame economic questions and insights (Staley, 2018). This discussion can be a prelude to more intellectually rigorous exercises, such as writing a paper, or as a way to focus discussion and advance learning objectives as a discrete and independent exercise.

Post-screening questions to prompt a debriefing or setup future discussions could include:

- How do the opening scene on the fishing trawler and the doctor's visit with Ruby's parents set up the main themes of the movie? How do the characters' reactions reflect different priorities, preferences, utility calculus, or indifference curves? How do these scenes establish the Rossi family and its members as "marginalized"?
- How do sound and silence engage the audience? How does this artistic presentation of the story and characters influence how we understand the characters, their attitudes, and their decisions as rational actors? How would these observations bound expectations and choices for the characters?
- Which character did you identify with most? Why? How would you characterize their preference set compared to yours? How would you go about setting up and optimizing a joint utility function?
- What did you learn about the deaf community? Is being deaf a "disability"? If so, what does "disability" mean in this context? How would an economist approach disability in the labor market and the commercial fishing industry more specifically? Does this differ from the way disabilities are typically discussed or presented in economics or other disciplines?
- Would you consider Ruby's family marginalized? How would an economist define marginalization? What individual or institutional factors might lead to marginalization? How would an economist think about offsetting the effects of marginalization?
- How does *CODA* represent social entrepreneurship? What makes the Rossi family business a social enterprise? Is this substantially different from a conventional family business?

What characteristics should a business have to be considered a “social enterprise”?

Notably, the movie screening itself can be designed as an integrated in-person element or an independent remote component of the workshop. To prompt participants to look for those elements of the film that are most relevant and germane to social entrepreneurship, economics, and empowerment, instructors should lead a brief pre-screening discussion about the deaf community, their patterns of communication, and their history within American culture (as well as other’s culture if a broader experience and knowledge are available).

Additional discussion prompts for other elements of the story in different contexts are included in Appendix B.

Conclusion

This paper has proposed a scaffolding for bridging the teaching of economic principles and concepts in the classroom to contemporary concerns about social change and DEI through social entrepreneurship using the award-winning 2021 movie *CODA* as its primary vehicle. *CODA*’s rich, layered, and textured story provides an unusual opportunity to examine and apply foundational economic concepts such as economic rationality, profit maximization, and social welfare economics within a broader DEI framework. The concepts of social entrepreneurship and social enterprise, while new to many students, are clearly defined in the story and the role the family business plays in addressing inequities faced by the Rossi family.

The high level of critical thinking and application of these concepts makes these exercises and activities particularly well suited for upper-division economics courses where students are expected to rigorously apply core economic concepts, principles, and theories to real-world scenarios and problems. Upper-division courses suitable for applying the *CODA* learning scaffolding could include applied microeconomics, economic development, economics of regulation, economics of the family or cultural economics, entrepreneurship and social entrepreneurship, social welfare economics, public sector or public choice economics, economic policymaking, economics of the environment and natural resources, just to name a few. Similarly, the framework, exercises, and activities could be suited for a half-day workshop intended to provide a more intensive learning environment.

The movie *CODA* provides data rooted in a believable contemporary story that is concrete and tangible while connected to characters similar in motivations, aspirations, and interactions as undergraduate students. Indeed, the mark of a successful movie, like *CODA*, is the ability to connect to audiences in ways they relate, even when the characters and story arcs may be fictional (Staley, 2018). In *CODA*, students can see characters making decisions in real-time, the shifting of preference sets in a temporal dimension, recalculations of net benefits for individuals and groups, the effects of political, cultural, and economic institutional constraints on decisions, benefits (and limits) of human capital investments, among many other concepts.

CODA’s story is uniquely suited to integrating social entrepreneurship and DEI concepts and ideas into undergraduate economics teaching at both lower- and upper-division levels as well as masters levels. Ruby’s search for identity, a recognized stage of developmental psychology, is universal and will connect on an emotional level. Her learning and development can be easily explained in a traditional economic framework focusing on preference sets, utility maximization, and rational choice. The familial setting of a deaf family is poignant and at times riveting as she is forced to make choices that may not be in her personal self-interest. In other words, the story illustrates stark trade-offs between personal fulfillment and collective duty and obligation. These trade-offs and considerations are at the center of discussions of social change and social entrepreneurship.

The movie's content is rich in other ways relevant to economics. The specifics related to the fishing industry allow instructors to discuss the consequences of varied regulatory approaches to environmental concerns and objectives. Regulation is often presented as if the consequences are non-trivial in a social context. In the case of *CODA*, these regulatory interventions have meaningful consequences, forcing students to consider stark trade-offs and implications. The consequences of these decisions have social welfare implications as regulations have negative consequences for a deaf family, a highly marginalized sector of society.

A carefully crafted unit in economics, whether through an independent workshop format or a series in a traditional classroom, can elevate a practical understanding of how economics applies in the real world. The added benefit of using *CODA* is an applied prism through which an explicit focus on how economics can help students explore issues in a wider, non abstract context.

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Appendix A: Plot Summary and Key Characters

Ruby Rossi is a high school senior and the only hearing member of a deaf family, or CODA (Child of Deaf Adults). She works on the family-owned fishing trawler alongside her deaf father, Frank, a third-generation fisher, and deaf older brother, Leo. Her family is a loving, caring family although they appear closed to Ruby's aspirations and ambitions. Ruby's identity revolves around her family and its needs in terms of her role in the family business, a commercial fishing trawler, and connectivity to the broader hearing community which constrains her personal choice set. She is, in short, optimizing over a joint utility function.

But Ruby does not have a calling as a fisher. She is unsure of what she wants to do upon graduation from high school, but her primary commitment to the family is out of loyalty. This is in contrast with her brother, father (Frank), and mother (Jackie), who enjoy or have at least accepted the lifestyle and find fulfillment in the occupation. The resolution of this conflict is central to CODA's story.

Ruby has a beautiful, if untrained and undisciplined, singing voice. Her love of singing broadens her interests beyond her immediate family which, understandably, cannot fully appreciate her talents since they are deaf. Ruby alters her expectations about her future as her choice set expands and she is more aware of potential opportunities beyond being a fisher and her connection to the fishing community. This affects the cost and benefit calculations implicit in her family relationships and creates a more dramatic divergence between her utility function and that of the family.

Ruby's primary role is as a conduit to the hearing world in the family business and in personal relationships. She is the primary negotiator and translator, facilitating contracts and economic transactions. Her skills allow her to reduce the average costs of running the family business as her brother and father focus on catching fish. These lower average costs allow the family business to remain profitable, even if revenues just barely cover their production costs. Notably, as a family member, Ruby is not compensated in wages. Rather, her compensation is calculated by the benefit to the family plus in-kind services such as room and board, transportation, etc. Also, given the marginalized role of a deaf family and its limited economic opportunities, the family is willing to accept lower overall compensation (and economic profits) than more traditional families or businesses.

The balance between family collective objectives and personal choice changes when Ruby joins the school choir to be close to a high-school crush. The choir teacher hears the potential in her voice and further invests in her talent (human capital). As she and the teacher invest in her talent as a singer, Ruby sees a wider range of opportunities, personally and professionally. As Ruby gains confidence, her teacher finally encourages her to broaden her horizons, including attending college at the prestigious Berklee College of Music in nearby Boston. Ruby begins seeing her future as more than a life mediating the economic and social interactions between her family and the local community.

But, as the only hearing member of the family, Ruby is constrained. Her parents' risk aversion triangulates around their insecurities with the hearing community. Like many others in the contemporary fishing industry, which is tightly regulated and controlled through federal regulation, the Rossi family is on the cusp of financial ruin. They also feel isolated from the surrounding hearing community. Without Ruby's ability to interpret the hearing world through American Sign Language (ASL), the family feels their ability to continue as fishers is fundamentally compromised. This prevents them from reformulating what is an obsolete business model to a more contemporary and potentially profitable one based on new partnerships and organizational structures that improve efficiency, maximize revenue, and create a more stable enterprise. The tension in the story centers on the relationship between

the family's inability to recognize the changing preference set of their teenage daughter and the limits of their business model to sustain value capable of being monetized in the private market.

As the family business struggles under a federally imposed fishing quota, they are forced to sell their fish at a wholesaler's price that barely covers costs. The dialogue implies they may cover variable costs of production, but not the fixed costs, putting their business in financial jeopardy. The financial tipping point occurs when the family is forced to fund a federal fish and game "observer" to monitor their catch and ensure they are not exceeding a government-imposed quota.

The Rossi family has little choice but to add the cost onto their very thin margins. They are forced to think outside the box and reconsider the institutional changes necessary to widen their choice sets. With Ruby's help, the family organizes a cooperative, a co-op, as a competing institution and alternative to the traditional wholesale arrangement that centralizes buying with one representative. The co-op would quite literally break the monopoly, giving independent fishing families the ability to connect directly to customers.

This strategy, however, comes with significant risks. The existing wholesaler will work to undermine their business by exercising his monopoly power over the other fishers. Moreover, as full-time fishers, the Rossi family does not have the expertise or the time to apply their human capital to starting up a new business. They have to weigh the labor used to fulfill their quotas with the time it takes to organize and implement a co-op. Their marginalized role in the hearing community makes a daunting challenge seem impossible.

Appendix B: Additional Discussion Prompts

When students and participants move to the discussion or small group phase, discussion prompts can focus on more specific areas of content within the movie to draw out critical concepts. These prompts can be assigned to individual groups or presented more broadly for individual groups to identify intellectual priorities or interests. Examples could include the following.

Understanding institutional and environmental constraints on individual decisions.

- Ruby's role in her family is critical to the story. In what ways has this familial relationship empowered her as a child? Is Ruby's empowerment a rational decision on the part of the family? In which ways has this role constrained her? Is Ruby's decision to stay in the family "rational" at the beginning of the movie? At mid-point? At the end?
- Ruby's role in the family business, serving as a deckhand on their fishing trawler, is critical. How do we see this in the opening scenes of the movie? Has Ruby's role as a hearing crew person aided their business or hindered it?
- Do you see open resistance or intentional distancing from the Rossi family within the fishing community? How would this be framed as a constraint on personal or family decision-making? What drives Frank and Jackie's feelings of disconnectedness from the larger hearing community? How does this affect their willingness to assume risk? How does the bar fight between Leo and another fisher focus attention on "outsider" dynamics?
- At several points, the fish processor, Tony, calls Ruby "honey." What is Ruby's reaction? What does this imply about social constraints on individual decisions and behavior? What does his attitude toward Ruby imply about Ruby's abilities? Her family's status?

Understanding economic opportunity, information asymmetries, and decision constraints

- The story is intentionally set in Gloucester, Massachusetts, a traditional fishing village. What does the family fishing village represent to the Rossi family? Using an economic frame, why would they stay in Gloucester? What would prompt them to emigrate to another city or region?
- In one of the opening scenes, a fellow fisher, Tony, calls out to Ruby, saying, "Hey, Ruby! I thought you guys were fishing First Ledge. You're done already for the day?" Ruby's response is "Piece of shit quotas." What role do the fishing quotas—legal limits on the amount of fish a fisher can catch—play in the movie? Why is Ruby's reaction so negative?
- Immediately following this scene, Brady, looks at the fish processor, Tony, and asks "What are you gonna give her on those haddock, two bucks a pound?" Tony responds "Two-fifty and I'm being generous." Ruby responds "Two-fifty? What're you guys getting at auction?" Tony ignores her, saying "Calm ya livah, honey, you let me worry about the numbers. Sign over here." What does this scene tell us about the profitability of commercial fishing in Gloucester, Massachusetts? What does this scene say about information asymmetries? How does this bound or otherwise limit the choices of the fishing community? Or the Rossi family?
- How does the Rossi family and their fishing community's traditional reliance on selling their fish to a wholesaler end up constraining their economic opportunities?

Human capital and uncovering untapped talents and abilities

- To what extent did the “organization” of the family business help Jackie and Frank? Does this structure help Ruby’s brother Leo? Or does it constrain him, preventing him from developing his human capital?
- To what extent was the family business constrained by each of the lead characters?
- What factors could have empowered the family? Economically? Socially?
- Are Ruby’s talents best suited to supporting the family business?

Identifying practical steps toward empowerment, sustainable enterprise, and social change through private markets and business development

- What do Jackie and Frank’s reactions to Ruby’s desire to pursue college suggest about the strength or fragility of the family as a unit or the individuals within the family?
- What role does Leo (Ruby’s deaf older brother) play in the Rossi family’s stability, security, and identity?
- To what extent does the Rossi family represent broader social, economic, and institutional challenges to communities or individuals marginalized by a broader, “mainstream” culture?
- What does the controversy about the placement of a federal “observer” on the family fishing boat (and those of their peers) suggest about the financial condition of the fishing community in Gloucester? Is this predicament unique to the Rossi family? How is the Rossi family particularly vulnerable to this mandate? What is the financial impact of regulation? Who bears the burden of these regulations?
- Why does the Rossi family believe a cooperative, a business that is operated and managed by its owners, provides a viable alternative to the traditional method of selling fish to a processor, who also serves as a wholesaler?