IUPJAE INTERVIEW

AN INTERVIEW WITH PROFESSOR M RAMACHANDRAN

Interviewed by GRK Murty, IUP Publications

Dr M Ramachandran was born in Kurungavanam, a village in Tamil Nadu. After completing primary education in his village, he went to a nearby town for high school education. And, that was the beginning of his struggles. For, he could not come to terms with Mathematics and English. Indeed, he developed a kind of phobia of public examinations. The result: he failed in Mathematics and English in Eleventh Standard.

Taking advantage of the changed rules, he enrolled himself in the newly introduced Plus-Two program at the same school. But the challenges continued to haunt him and he failed in three subjects, including his arch-enemy, English.

His family was however happy. For, it would get one more 'economic asset' to boost their annual income—a rational economic behavior. His parents insisted that he should join them in farming. But young Ramachandran was not interested. Yet on their insistence, he took up banana cultivation independently. He took an active interest in nurturing the crop.

It was coming up well. But to his ill luck, floods washed away the crop that was ready for harvest. He was crestfallen.

Pulling himself from the crisis, he courageously fought to pass the remaining three subjects of the Plus-Two program. Then he got admitted into BA in Economics. Joining the program, he consciously set a 'long-term goal' for himself. Driven by it, he stayed glued to books. So dedicated was he to his studies that even while staying at home during holidays he would keep himself immersed in books. Even perched on treetops to read his books, seeking solitude from his fellow villagers who are known to be overenthusiastic to strike a dialogue with a college student. With all that grit, he passed BA with high first-class honors.

With excellent marks in BA, he could secure admission to MA Economics. But to his dismay, the teaching was all in English. Again, it was a big challenge to follow the lectures. In such situations where we don't think we fit in, it is normal to experience a kind of anxiety. This feeling can overwhelm us when we are overambitious. It may even lead to debilitating stress resulting in toxic behavior. Psychologists say that it can even undermine one's goals. But not so with Ramachandran. At the advice of his roommate, he purchased a dictionary along with Wren and Martin's grammar book. Under his tutelage, he mastered English in no time. Finally, "leaving behind nights of terror and fear" he rose to the top of his class passing MA in first division.

Then he secured admission to MPhil at Pondicherry University with a fellowship. But this happiness could not last longer. On the very first day of the course, he discovered that econometrics was not his cup of tea. It made him anxious and clueless to navigate through. Again, a big challenge. But, by then challenges and struggles had become a way of life for him. This time round, befriending anybody and everybody endowed with a sound knowledge of Maths, seeking their help and applying his mind and body more intelligently, he sailed through successfully, and also, secured the University's best student award.

Later, he joined the University of Hyderabad for PhD. He submitted the thesis on "constructs of monetary aggregates" and got his doctorate. In September 1994, he joined GIPE as a lecturer—a fulfillment of his life's ambition. In 1997, he shifted to the University of Mumbai as a reader. Taking advantage of the company of illustrious economists, he researched the dynamics of inflation, velocity of money, fiscal deficit, monetary targeting, etc., and published papers in reputed journals.

Then in 2001, he shifted to the Madras School of Economics as an Associate Professor. Here at MSE, this professor, who once harbored a phobia towards anything related to Mathematics, taught advanced time series econometrics, of course, with trepidation to executives from the economics division of

RBI. Hearing their feedback, he felt happy about his conquering the fear of Mathematics with sheer grit and determination.

In 2004, he shifted to ISEC Bengaluru and worked as RBI Chair Professor. He continued researching the 'modeling of inflation in India' and India's forex reserves. In 2006, he joined Pondicherry University as a Professor. Here, besides continuing his seminal work on inflation, inflation forecast, sectorial effects of disinflation, inflation and RPV, inflation and its uncertainty, relation between money and inflation, oil prices and macroeconomic fundamentals, currency equivalent monetary aggregates, etc., he started researching capital markets too.

He has so far published 55 papers in various reputed peer-reviewed journals and presented 60 papers at national and international seminars. He has guided 22 students for MPhil and 15 scholars for PhD. He also worked as a referee for various reputed journals.

Dr Ramachandran, who was once scared of econometrics, was finally elected as Vice President of The Indian Econometric Society for the years 2014-15, 2015-16, and 2016-17. Later, he was also elected as President of The Indian Econometric Society for the years 2020-23.

His candid interview teaches us two lessons. One, be grateful to your mentors, and to your illustrious seniors who helped you explore new ideas. For, gratitude makes one happy in life. It also enables you to keep smiling. The second lesson is: *kriyāsiddhiḥ sattvē bhavati*…—the secret of accomplishment of intentions lies in one's inner strength … So, enjoy!

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GRK: Thank you very much Prof. Ramachandran for agreeing to this interview. I would like to start the interview with your childhood. Could you please take us back in time and share with us your family background, early childhood and school education?

MR: I was born in a small village called Kurungavanam, which is now part of Tenkasi District in Tamil Nadu. My parents were illiterate peasants, and I grew up with two elder brothers and a younger sister. Our family owned just over an acre of land with insufficient source of water for irrigation. My father took on the responsibility of farming, with the support of my mother and brothers. My mother played a crucial role, not only in managing the farming activities but also in taking care of entire household. We used to cultivate paddy and variety of vegetables. From a young age, I was also involved in farming.

My schooling began in the primary school of my village. Although, I do not remember the exact day I was taken to the school, my mother often recounted how, when I was just three years old, two teachers from the school had to chase me down like a chicken while I was playing with my friends in the street. My mother remained silent witnessing the scenario, as parents back then held immense respect for teachers, regardless of their methods. That very day, they admitted me to the first standard, registering my age as five. I was given two sets of dress stitched by the teachers out of wheat bags which were imported under PL 480. To ensure they had enough students, the school followed the practice of retaining students in the fifth standard for two years, effectively making it a two-year program.

After completing my primary education, I attended a school in a nearby village for my 6th to 8th standards, walking over a kilometer each day to get there. For my high school education, I had to join a school three kilometers away from my village. During my school time, I struggled with Mathematics and English, and developed a significant phobia of facing public examinations. Unfortunately, I failed in both subjects in my eleventh standard. My father was really pleased, as he saw it as an opportunity to have an extra hand to help with farming.

However, I was fortunate that the Government of Tamil Nadu introduced the Plus-Two system in schools, replacing the Pre-University Course that was attached to colleges. The government also allowed students who failed in the eleventh standard to enroll in Plus-One in schools. I took advantage of this opportunity and joined the Plus-Two program in the same school. I was assigned to a stream that did not include Mathematics, instead focusing on Economics, History, and Advanced Tamil, along with other language subjects. While I was able to pass Plus-One since it was not a public exam, I struggled in Plus-Two and ended up failing three subjects, including English.

My father and brothers were once again pleased with the outcome and advised me to focus solely on farming. Although I found it uninteresting, I agreed to take on something independently. They gave me a small piece of land and some money to start farming. I decided to plant around three hundred plantains and quickly developed a passion for nurturing them, as I looked forward to reaping the rewards after ten months. I spent most of my time in the plantain field, carefully tending to their growth.

Unfortunately, just one week before the harvest, a flood struck, submerging all the plantain trees in water. When I visited the field a week later, I was devastated to find the entire crop destroyed. It was incredibly painful to witness the total loss, and I was heartbroken.

Then, I decided to address my failed subjects. Simultaneously learnt typewriting to pursue a clerical job, as I was unwilling to attempt farming again. To persuade my father, I enlisted the help of some relatives, and he eventually agreed to let me focus on typewriting and retaking the remaining exams, especially since the exam fee was only ₹10 per paper. I enrolled in a tutorial college in a nearby town and was advised to take one paper at a time. It took me nearly eighteen months, but I managed to clear three subjects one by one. This effort enabled me to pass my Plus-Two exams with 44% marks. During this time, I also joined a typewriting institute and successfully passed the High-Speed exam with first-class.

Securing a clerical job was extremely difficult at that time, and despite my best efforts, I was unable to find one. My attempts were futile due to my poor Plus-Two score. For the first time in my life, I was gripped by a deep sense of uncertainty about my future, overwhelmed by the fear of what lay ahead. The realization of my struggles and abysmally poor performance in academics left me questioning my path and what I would become.

G: Did you have any role models when you were growing up?

M: I cannot point to one person as my definitive role model, but I was deeply inspired by many who could do things better I struggled with, and perhaps that shaped my outlook more than anything. It was not just their success that left an impression on me, but their ability to articulate thoughts with clarity and express ideas in a way that truly resonated with people. I admired those who could speak effortlessly, conveying even complex ideas in a way that felt simple, powerful, and understood by all. I longed to emulate that skill—this ability to connect with others through words, whether spoken or written, with an elegance that could touch both the mind and the heart.

G: What made you decide to choose Economics for your BA degree? Can you talk a little bit about your degree years?

M: Economics was not my choice; it was more of a fall-back option. After multiple attempts to pass my Plus-Two exams, my scores were so low that no college would consider my application for any undergraduate program. During this difficult time, a school friend informed me about some vacancies at a college affiliated with Madurai Kamaraj University in Srivaikuntam, located in Tuticorin district, Tamil Nadu. When I arrived at the college, I saw a crowd of students outside the office, listening to an office staff member who was announcing the courses with available seats. Just as I reached, he announced a vacancy in the Economics course. After confirming with my friend that it was a BA program offered in Tamil medium without Mathematics, I eagerly raised my hand, paid the fees, and got enrolled. I was thrilled to finally become a college student. I was determined and so conscious about my long-term goal ever since I joined the college.

The college I attended was frequently marred by student group conflicts, often leading to strikes and indefinite closures. Despite its lack of good infrastructure, there were a few exceptional teachers in the department. I found myself at ease with the subjects, as they were taught in Tamil, my native language. However, the compulsory Functional English paper across four semesters proved to be a challenge for me once again.

I became acutely aware of every moment I spent at college and began dedicating most of my time to my studies. Whenever I returned to my village, I tried to isolate myself at home to focus on my studies. Unfortunately, the villagers did not realize that I needed to be left undisturbed and would engage me in long conversations. Seeking solitude, I decided to study by the riverside, but even there, passers-by would stop to chat with me. Eventually, I chose to climbing trees, where I could sit undisturbed and study for long periods.

Through these efforts, I managed to secure the highest marks in my class in all the main subjects during the first semester, although I only just passed in English. When I informed my family about my results, they were skeptical and did not believe me. My father decided to send my elder brother to the college to verify the truth. My brother met with the principal, who confirmed that I had indeed performed well in the semester exams after checking my marks.

This moment marked a turning point in my life. For the first time, my parents and brothers agreed to support my decision to continue my studies. I successfully earned my BA degree with high first-class honors and began searching for a reputable college to pursue my postgraduate degree.

G: What kind of career aspirations did you cultivate during your early phase of life?

M: I began to think about my career with a long-term vision only after enrolling in a BA program in college. For the first time in my life, I felt a strong determination to do justice to whatever I pursued. I was resolute in my goal to continue my studies until I earn a PhD in Economics, and during this time, I developed a deep passion for teaching and research. Although there were pressures to find a job and get married right after completing my MA degree, I steadfastly maintained my ambition and eventually received my PhD from the University of Hyderabad in 1994.

G: Please share your experiences at the Madurai Kamaraj University campus where you joined for MA in Economics. Was there any faculty who influenced you most and how it mattered to your further education?

M: I chose to pursue my MA in Economics at ST Hindu College, one of the best colleges affiliated with Madurai Kamaraj University, located in Nagercoil, a small town in Kanyakumari district, Tamil Nadu. Thanks to my excellent BA scores, I secured admission in the first round and joined the college. However, I soon faced a significant challenge: the postgraduate program was offered only in English. This left me feeling completely devastated. In fact, many of my BA classmates who had secured admission to MA programs at different colleges eventually dropped out because they struggled to cope with the requirement to learn and write everything in English.

On the very first day of class, a teacher with an intensely angry expression asked if anyone in the room was from a Tamil-medium background. I was the only one to stand up. The teacher advised me to focus on just two papers in the first semester, suggesting I carry the remaining papers as arrears to the next semester. I returned to my hostel with a heavy heart, feeling humiliated in front of my fellow students.

I had a roommate named Rathnam, who was pursuing his MA in History. He was humble and intelligent and had received his education at one of the most reputed schools in Palayamkottai, Tirunelveli district, often referred to as the Oxford of South India. During our conversations, I shared my struggles with English and the advice given by one of my teachers.

Rathnam posed a straightforward yet insightful question: "Have you ever tried to understand English grammar?" I confessed that I had not, as I struggled to grasp it during my schooling. He advised that I begin by acquiring a dictionary and the renowned English grammar book by Wren and Martin, which I promptly did. Ratnam then took the time to guide me how to use the dictionary effectively and started teaching me the fundamentals of grammar.

His support was crucial in helping me build confidence in my English language skills. In just one week, Ratnam helped me conquer a lifelong fear of English—a fear that almost twenty years of formal education could not shake. His guidance broke through where years of schooling had left me struggling. I used to be terrified of reading English newspapers like *The Hindu* and *Business Line*, even though I was advised to read them for improving my language skills. But later, I went on to publish a number of op-ed articles on contemporary economic issues in those very papers, with editors never needing to change a word of my writing. It was a transformation I once thought impossible. I topped in the class and earned my MA with high honors. I felt a deep sense of accomplishment and immediately set my heart on pursuing an MPhil, driven by my passion for further learning and growth.

G: You then moved to Pondicherry University to do MPhil. What is the take-home from this institute?

M: In 1989, when I applied to the MPhil program at Pondicherry University, it was still an emerging institution. I secured the top score in the entrance exam, earning admission with a university fellowship. However, my excitement was quickly overshadowed by the fear when I discovered the coursework included Econometrics—a subject heavily reliant on Mathematics and Statistics. This realization hit me hard, leaving me anxious and unsure of how to navigate it.

Yet, I quickly realized the fact that mastering Econometrics was essential if I wanted to pursue applied research in Economics. Indeed, a few introductory lectures on basic econometrics by Prof. M Ramadass, the Head of the Department, really sparked my interest in the subject. While I could follow the lectures, solving the equations was a real struggle. I befriended anyone with math skills, and many generously helped me. Despite the challenges, I successfully completed my MPhil dissertation and performed well enough to earn the University's 'Best Student Award'. Yet, I knew I still had a long way to go before I felt truly confident in Econometrics.

Just a month before submitting my MPhil dissertation, I applied for PhD admission in Pondicherry University. I secured admission with a university fellowship as I topped in the entrance. However, while I was focused on pursuing my passion, another pressure loomed large at home—my family was insistent that it was time for me to get married. I was already 27, and with few more years of studies ahead, they believed it was the right moment to settle down.

My elder brother informed me that the family was actively searching for a bride. Despite my focus being solely on advancing my studies, particularly learning Mathematics, the family finalized a match. I was indifferent to the idea. I did not concern myself with typical inquiries about her appearance, age, or qualifications, as such decisions were traditionally left to the elders in our family. My only request to my brother was to find out whether she had any knowledge of Mathematics. Later that day, he called back, and in his calm voice, he said, "She is a lecturer, teaching Physics at a college." I felt a wave of relief wash over me. It was enough. Without hesitation, I told him to go ahead and the marriage took place on June 3, 1990.

G: In 1990, you joined the University of Hyderabad for PhD. Please tell us how you zeroed in on the problem for research and writing the thesis. Also, tell us about the role played by your guide in leading you to the award of degree.

M: During my MPhil at Pondicherry University, I had the privilege of meeting two influential personalities who played a pivotal role in shaping my career: Prof. Bandi Kamaiah, a renowned econometrician, and Prof. D Sambandhan, a passionate scholar and exceptional human being. Upon my PhD admission in Pondicherry University, Prof. Kamaiah encouraged me to explore the intricate field of monetary aggregation, a highly technical subject requiring a strong mathematical foundation. He generously promised to provide me with all the necessary literature before he left Pondicherry University to join the Department of Economics at the University of Hyderabad.

I decided to travel to Hyderabad to seek guidance from Prof. Kamaiah, who was remarkably generous and made my stay at his home more comfortable for nearly a month. During my stay, I engrossed myself in the literature on monetary aggregation, and each evening, when Prof. Kamaiah returned from the university, we would engage in discussions about what I had learned. After about a month, he took me to the university administration, where we collected an application form for PhD admission. Without hesitation or further inquiry, I filled out the form, submitted it, and attended the interview. I performed well and was subsequently offered admission to the University of Hyderabad.

During the process, Prof. T Krishnakumar, a distinguished scholar and deeply respected econometrician, expressed interest in mentoring me. However, I reverently informed him that I had already committed to being guided by Prof. Kamaiah, under whose mentorship I intended to continue my journey.

I went to Hyderabad for my reference work and came back to Pondicherry University as a PhD scholar of University of Hyderabad. I canceled my admission in Pondicherry University and moved to University of Hyderabad. My wife was unable to join me as she was teaching at a college near my hometown. It was just fifteen days after my marriage I distanced myself from my wife another 650 km, as my education came on the priority.

I considered myself incredibly fortunate to have had a mentor like Prof. Kamaiah, whose rare and selfless approach to guiding students truly set him apart. He placed his students at the heart of his life, prioritizing time with us over the company of colleagues or friends. Our conversations always revolved around research, and through these moments, he instilled in us a deep sense of purpose and passion for discovery.

What made Prof. Kamaiah exceptional was the unique research culture he cultivated. He encouraged us not just to work hard but to think beyond—insisting we publish our findings before incorporating them into our theses. His commitment was unwavering; no matter how busy he was, he never took more than a day to meticulously edit our papers, offering thoughtful suggestions for improvement. His belief in our potential pushed us to achieve more than we ever imagined, with many of us having published works even before earning our degree.

Above all, he gave us the freedom to explore, collaborate, and grow as independent researchers, creating a nurturing and productive environment where ideas flourished. Under his guidance, we did not just succeed academically—we blossomed as scholars, and for that, I am forever grateful.

He created a comfortable environment where all his students felt free to interact with him in a friendly manner. This atmosphere fostered close relationships, allowing us to grow much faster. He was deeply concerned not only about our academics and careers but also about our personal lives. He often took us out, and he was insistent on always covering the expenses himself. The only freedom we did not have with him was that he never allowed his students to spend money when we were together.

Thanks to his unwavering support and the privileges I enjoyed under his guidance, I was able to submit my thesis, publish four papers in professional journals within three years, and receive my degree in 1994.

G: Interestingly, while working for PhD, you published quite a few papers, of course, jointly with others on causality between money and prices and monetary aggregates, etc. Please, elaborate on how all this happened simultaneously with your PhD work.

M: My thesis focused on the constructs of monetary aggregates and every chapter of the thesis was published in professional journals before I got my degree awarded. While my primary focus was on my thesis, I found myself deeply excited by the possibilities applying econometric tools to explore the intricate relationship between money and prices. This endeavor was a turning point for me. It resulted in the publication of three additional papers in journals. What made this achievement even more meaningful was the collaborative spirit with my fellow scholars. The support, shared ideas, and teamwork we fostered not only enhanced my work but also made the journey a profoundly rewarding experience.

I owe much of my success to the collective energy and intellectual exchange we nurtured, reminding me that true progress is often born from collaboration and shared vision.

G: On completion of PhD, you joined Gokhale Institute of Politics and Economics (GIPE), Pune, as a lecturer in September 1994. Please tell us how you shaped yourself as an effective lecturer, hurdles, if any, faced, etc. Intriguingly, a kind of lull appeared to have crept into your research activity during this period. Please reflect.

M: Pursuing an MPhil at GIPE had been an aspiration of mine, as it was regarded as one of the premier institutions in the country for studying Economics. I appeared for the entrance examination, but, unfortunately, I did not secure admission. However, upon reviewing the questions raised in entrance exam, I realized that the level of preparation required was markedly different from the training I had received during my MA program. Nevertheless, I remained undeterred and resolved to return to GIPE, either as a PhD scholar or as a member of its faculty. That dream came true on September 14, 1994, when I had the privilege of joining GIPE as a lecturer.

Upon joining GIPE, I was entrusted with the responsibility of teaching Public Finance, a subject I had only encountered briefly during my postgraduation. It was unfamiliar territory for me as a teacher, and the students at GIPE were known for being exceptionally challenging and demanding in the classroom. Initially, I felt the weight of the task, but I quickly saw it as a unique opportunity for growth. Determined to rise to the occasion, I immersed myself in gathering materials and dedicated myself to mastering the subject. With every lecture, I transformed my apprehension into a journey of learning, embracing the role of a teacher in Public Finance with passion and commitment.

Further, I requested my colleague Prof. Vikas Chitre, a renowned scholar in monetary economics, to give me an opportunity to teach some portion of monetary economics, which was very close to my heart. To my fortune, he generously agreed, not only sharing part of his course with me but also guiding me with necessary resources and method of teaching. His support was an unconditional gift, and I embraced the chance with enthusiasm. I taught theories of money supply and the depth of knowledge I gained led to a milestone I had long dreamed of—my first publication in *Economic and Political Weekly*. To my surprise, the paper later turned out to be an important reference for PG students in many institutions across the country.

However, this endeavor consumed so much of my time and energy that my own research had to take a backseat for a while. Yet, I look back with no regrets, as it opened new doors and deepened my love for the subject, I hold so dear.

G: In August 1997, you joined the University of Mumbai as a Reader and worked till March 2001. Please narrate your teaching experiences at the university.

M: Initially, I resided in Borivali West, Mumbai, and would start my day as early as 5:00 a.m. to avoid the rush of the suburban trains while commuting to the Department of Economics at Kalina campus. Most of my time was spent in the department, where I had the privilege of teaching monetary economics and macroeconomics. This opportunity was particularly significant as the department boasted some of the most distinguished and experienced scholars in the field.

The classrooms were large, and with over 450 students enrolled in the MA program, we had two sections for the same batch. It was a unique experience to teach such a large number of highly engaged and diligent students, which made the teaching environment intellectually stimulating. I followed the guidance of my senior colleagues regarding reference materials for teaching, whose recommendations significantly enriched my understanding of the subject. I truly enjoyed teaching these subjects, which I held in deep regard, for nearly three years. However, in 2001, due to personal reasons, I made the decision to leave and join the Madras School of Economics (MSE).

G: Amidst the stalwarts of the department, you must have got a fillip to pursue your research interests. Your publications indicate that you continued your research in the field of monetary economics—focusing on the dynamics of inflation, velocity of money, fiscal deficit, monetary targeting, etc. Please tell us about these studies.

M: I made the decision to join the University of Mumbai not merely for the immediate career advancement it promised, but because it signified an extraordinary opportunity to collaborate with some of the most distinguished minds in the field of Economics, including Prof. D M Nachane, Prof. M J Manohar Rao, Prof. Errol Desouza, Prof. Romar Correa, Prof. Ajit Karnik and Prof. Neeraj Hatekar. Many of the faculty members at Mumbai University were legendary economists, revered for their profound expertise in macroeconomics and public finance, underpinned by rigorous econometric applications.

Their scholarly contributions—both in teaching and research—left a lasting impression on me. The depth of their understanding, combined with the clarity and precision in their teaching methods, made complex concepts accessible, sparking new insights and encouraging critical thinking. Their publications, often ground breaking in scope and significance, reflected a mastery of both theoretical and empirical work, bridging the gap between abstract economic models and real-world phenomena.

Being surrounded by such intellectual giants was not only inspiring but also pivotal in shaping my own academic trajectory. I saw it as a chance to deepen my knowledge in macroeconomics, engage with cutting-edge research, and refine my own skills in econometric analysis. In their presence, I felt a constant push to elevate my scholarly standards, which made the transition to Mumbai University not just a career move but a transformative chapter in my professional development.

I chose to work in those areas which were closely connected to the Reserve Bank of India's (RBI) priority to ensure price stability, aligned with economic growth, by targeting the annual growth rate of M3 money supply. The success of this approach, however, hinges on several key factors, including the stability of the money demand function with a limited set of determinants, the central bank's autonomy, and the intricate fiscal-monetary policy nexus.

My publications, which focused on the income velocity of money, the fiscal-monetary interface, and the potential for effective monetary targeting, illuminate the inherent difficulties in crafting a successful monetary policy. They underscore the need for a nuanced understanding of the dynamic interactions between fiscal discipline and monetary control, as well as the limitations that policymakers face when attempting to steer the economy through monetary tools alone.

G: In April 2001, you shifted to the MSE as an Associate Professor. Here, you appeared to have more scope to stay focused on your research. Please reflect.

M: While at Mumbai University, we were blessed with a daughter. However, when our daughter was just 45 days old, my wife had to return to her college, leaving Mumbai. It was incredibly painful for me to be apart from them, and I became determined to find a position closer to my family.

I applied to several institutions in the south. One day, I received a call from the Director of MSE, inquiring about my interest in joining the institute. I decided to accept the offer. I left Mumbai University and joined MSE in April 2001. Here at this institute, I had the opportunity to branch out to a totally new arena of research: Cross-border capital flows and reserve management.

G: In MSE you have started researching forex markets. Please tell us the motivation behind examining the optimal level of international reserves for India and how you estimated it. Also, tell us how have you measured the forex market pressure on RBI and its efforts to sterilize capital inflows.

M: During my time at MSE, I was entrusted with teaching international economics to postgraduate students. What began as a routine assignment turned into one of the most enriching experiences of my career. The students were incredibly interactive, and their curiosity brought out the best in me. Their eagerness to engage with complex topics made every lecture a rewarding experience. I found myself looking forward to each class, where I could share knowledge and, in turn, be inspired by their fresh perspectives.

Around this time, I received an unexpected call from the RBI Staff College in Chennai. They inquired whether I would be willing to teach advanced time series econometrics to their officers. Although I had gained the skills to apply these advanced econometric tools in my research, teaching such a highly technical subject was a different challenge altogether—one I had not yet ventured into. I hesitated for a moment, feeling the weight of the opportunity and the fear of whether I could make such a complex topic accessible. But something within me stirred, reminding me of the countless hurdles I had already overcome. I agreed to take up the challenge, determined to give it my best.

I still vividly remember the first session. As I spoke, I saw the attentive faces of experienced professionals, all of them absorbing the intricate details of econometrics. During the tea break, a few participants approached me. They smiled and told me how much they had enjoyed the lecture, that I had made something so complicated feel easy to understand. At that moment, I felt a deep, overwhelming sense of accomplishment. It was as if I had come full circle—from being the person who once feared Mathematics to the one now teaching advanced time series econometrics to the very best in the field.

That day, I realized it was not just about the subject or the teaching. It was about my journey—about conquering my own fears, about the power of perseverance, and about the joy of passing that knowledge forward. Since then, I have continued to train officers of the RBI, the Indian Statistical Service, the Indian Economic Service, and the civil servants at various levels. Each session carries with it a reminder of how far I have come, and the immense satisfaction that comes from helping others on their own journeys.

Moreover, as part of their course requirements, the MSE students were required to submit a dissertation, and many chose topics related to international trade and finance. This interaction sparked my own interest in exploring the field of international finance, motivating me to delve deeper into this area. Two significant publications emerged from my time at MSE. One involved constructing an index of exchange market pressure to analyze how much of this pressure was mitigated through official intervention. This measure provided valuable insights into the effectiveness of foreign exchange market interventions, helping to better understand the dynamics of market forces and policy responses.

We developed an open-economy macroeconometric model for India, which enabled us to construct both a measure of exchange market pressure and an index of intervention activity. Our analysis of these parameters revealed that the RBI tends to allow rupee depreciation while actively curbing appreciation. However, the effectiveness of direct intervention was limited, as much of the capital inflows were sterilized, reducing their impact on the market.

In 1991, India faced a dire situation, with external reserves barely sufficient to cover two weeks of imports. This crisis forced the country to adopt a market-based exchange rate system and implement critical reforms to build adequate reserves. Thanks to sustained efforts, reserves grew to approximately $40 bn by the end of 2000, a transformation aptly described by then RBI Governor Dr Y V Reddy as a journey “from agony to comfort.”

However, as reserves surged past $300 bn, the issue shifted from scarcity to excess. The marginal benefit of accumulating additional reserves became negligible compared to the rising marginal cost, prompting me to explore what would constitute the optimal level of reserves for India. I estimated a buffer stock model based on optimal reserve demand principles. However, a key determinant, the volatility of incremental reserves, suffered from measurement error when measured as a rolling standard deviation. As Flood and Marion (2002)[1] noted, skewness in incremental reserve data introduces bias in the coefficient estimates and destabilizes reserve demand functions.

To address this, I developed a volatility measure as a time-varying conditional variance process, eliminating the measurement error. The estimates of reserve demand function revealed that reserve demand was driven more by the opportunity cost of holding reserves than by volatility—contrary to previous findings. This divergence was attributed to India's relatively free capital inflows, tempered by administrative restrictions on outflows. Since this work offered a significant methodological improvement, I published it as a brief note in *Economics Letters*.

G: In 2004, you published a paper, "Do Broad Money, Output and Price Stand for a Stable Relation in India?" Please tell us about this work, say how the idea sprouted, how the phenomenon was assessed, etc. Also, comment if these findings hold good in today's market conditions.

M: Monetary targeting had traditionally been considered a useful policy tool, assuming that money demand is a stable function of key variables such as output and price levels. Central banks worldwide, including the RBI, employed this framework to achieve monetary stability and control inflation. In this context, the stability of money demand in India, particularly the relationship between M3 money, output, and prices, warranted investigation. This study explored the stability of these relationships using conventional econometric techniques, including cointegration analysis, error correction models, and tests for structural breaks in the cointegrating vector, focusing on the period from 1951-52 to 2000-01. The findings provided evidence of a stable long-run relationship among M3 money, output, and prices, suggesting that M3 growth could serve as a potential indicator of future price movements within the RBI's multiple-indicator approach.

However, the analysis also highlighted cautionary evidence regarding short-run dynamics. The results suggested that an active monetary policy aimed at stabilizing short-run price fluctuations could lead to unintended consequences, amplifying long-run price instability rather than mitigating it. Therefore, while M3 growth may be useful as a long-run indicator of inflation, interventions to manage short-run price fluctuations should be approached carefully to avoid exacerbating price volatility.

[1] Robert Flood and Nancy Marion (2002), "Holding International Reserves in an Era of High Capital Mobility", IMF Working Paper Vol. 02/62.

G: In June 2004, you joined the Institute for Social and Economic Change (ISEC), Bangalore, as a Visiting Fellow and later in 2005 became RBI Chair Professor. This appears to be a purely research position. Please tell us about your experiences at this institute.

M: You are correct. The ISEC does not offer graduate programs. However, it admits students to its PhD program across various disciplines within the social sciences. As part of this program, students are required to complete coursework, and I had the privilege of delivering lectures on Advanced Macroeconomics and Time Series Econometrics. In addition to teaching ISEC scholars, I also conducted classes on Time Series Econometrics in workshops organized by the Institute for officers from the Indian Statistical Service, Indian Economic Service, and civil servants from various state and central government departments. Furthermore, ISEC hosted workshops for PhD scholars from institutions across the country, where I taught both Basic Econometrics and Time Series Econometrics.

Although ISEC is not a full-fledged teaching institution, I never felt a lack of teaching opportunities. In fact, compared to other institutions where I have served, my time at ISEC provided me with ample space for research. This environment significantly contributed to my academic productivity, and I attribute the large number of quality papers I published during that period to the supportive research culture at ISEC.

G: During this period, you published an interesting paper on modeling inflation in India, a country that is often prone to supply shocks in terms of food grains/crude oil, etc. It would be interesting to hear about how you evaluated the functionality of the inflation model. Please …

M: In this paper, we estimated an augmented Phillips curve to assess the impact of supply shocks on inflation in India. Our findings suggested that supply shocks exert only a transitory influence on both headline and core inflation. This result remained robust across a range of model specifications and alternative measures of core inflation. A plausible explanation for this transitory effect was that monetary policy had not facilitated a sustained change in the inflationary process by accommodating supply shocks—specifically, by refraining from expanding the money supply in response to adverse supply-side disturbances. This indicates that the monetary authority has implicitly prioritized core inflation by discounting short-term price fluctuations that are likely to reverse.

We argue that the critical factor in inflation dynamics is not merely the occurrence of supply shocks but the policy response to these shocks. The evidence suggests that by not accommodating these shocks, the monetary authority had effectively contained their long-term inflationary impact.

Therefore, inflation determination hinges more on the policy stance taken in response to supply-side disruptions than on the shocks themselves.

G: Interestingly, you published a paper about UK monetary policy under the inflation forecast. Could you please talk a little bit about how this idea was generated, implication of its findings for Indian policymakers, etc.?

M: Two of my former PG students from GIPE, Dr Naveen Srinivasan and Dr Vidya Mahambare, went on to pursue their PhD at Cardiff University in UK after completing their MA. Shortly after I joined the MSE, we reconnected and began collaborating on various macroeconomic issues. This is one among our many contributions, published in *Oxford Economic Papers*, which stemmed from our shared observation that inflation in UK had persistently remained below the target level for some time, sparking our curiosity to investigate the underlying causes.

We found that the monetary policy of the Bank of England could be characterized by a nonlinear policy reaction function with a deflation bias. We also found evidence suggesting that, during the 1992-1995 period, the Bank may have been targeting an inflation range rather than a precise point target. However, these findings were not robust when we used the Bank's own forecasts, which implied that the monetary policy during this period was consistent with a symmetric point target for inflation. We argued that a plausible explanation for inflation being consistently below the official target level is due to the fact of Monetary Policy Committee's systematic overpredicted inflation, which in turn might have led to overly restrictive policy measures.

G: In 2006, you published a paper on the upsurge of foreign exchange reserves in India. Please tell us about the implications of this study in today's context of even a higher stockpile of reserves.

M: Traditional models of reserve demand emphasize the importance of the variance of incremental reserves and the opportunity cost of holding reserves as key determinants. However, I argued that such models fail to explain the recent surge in reserve accumulation by emerging economies. Our findings challenged the conventional view that increased cross-border capital flows are the primary drivers of large reserve stockpiles. Instead, our analysis pointed to asymmetric administrative restrictions on capital flows and targeted interventions aimed at bolstering export competitiveness in the face of persistent capital inflows as the true factors behind reserve accumulation.

G: In 2006, you shifted to Pondicherry University as a Professor. Please tell me if these frequent changes in organizations had any effect on your research career.

M: When I joined the MSE, my wife was transferred from our hometown to a college in Chennai. For the first time in nearly twenty years of marriage, we began living together with our daughter. However, this period of togetherness was short-lived, as I soon left MSE to take up a position at the ISEC in Bangalore. I spent three years there, during which my wife and daughter, who was only three years old at the time, would visit me on weekends. Over time, this arrangement became increasingly difficult for all of us, and the distance began to weigh heavily. Although I knew it was not the best academic decision, I chose to leave the RBI Chair Professor position at ISEC and joined Pondicherry University, which was just a three-hour journey from Chennai, allowing me to be closer to my family.

The department offered MA, MPhil, and PhD programs, and I began teaching macroeconomics, monetary economics, and time series econometrics to both MA students and MPhil scholars. Unlike other premier institutions, the department struggled to attract diligent students, so I had to train many from the ground up. However, to my fortune, I had exceptionally dedicated students who were eager to learn. Under my guidance, each of these scholars managed to publish papers in fairly reputed international journals before completing their theses. Many went on to become accomplished teachers and researchers, securing positions in prestigious institutions across India, including the MSE, Indian Institutes of Technology, and various Central and State universities. A few have even been appointed as faculty in institutions abroad.

Before joining Pondicherry University as a professor, I was recognized as a faculty member of institutions such as GIPE, Mumbai University, MSE, and ISEC. Yet, it was at Pondicherry University where my journey became more personal and transformative. With the unwavering support of my colleagues, dedicated students, scholars, and the University administration, I worked to raise the visibility of the department. I instilled in my PhD scholars the importance of publishing their research in prestigious international journals, believing that their success would elevate us all. Together, we built something meaningful—a department that became known for its dedication and quality. That sense of collective achievement fills me with immense pride and gratitude, knowing that we left a lasting mark.

G: In 2007, you published a paper on “Core Inflation for India”. Please tell us how you have evaluated different models. Also, comment on how good these models are in predicting future movement in headline inflation in India say at 12- and 24-month horizon.

M: Monetary policy is inherently forward-looking, with a primary focus on anchoring inflation expectations; hence, policymakers require reliable indicators of future inflation trends, and a measure of core inflation serves this purpose. To this end, we constructed several core inflation measures using the exclusion method, limited influence method, and a common trends model. We evaluated the key characteristics of each measure and presented evidence that challenges the reliability of those derived from exclusion and limited influence methods as predictors of future inflation.

In contrast, the core inflation measure derived from the common trends model proved to be superior: it is unbiased relative to headline inflation, less volatile, highly correlated with monetary policy instrument, cointegrated with headline inflation, and a strong attractor of headline inflation. Our findings suggested that an overreliance on exclusion-based core inflation measures, despite their simplicity, may be misleading, while model-based measures provided a more accurate forecast of future inflationary trends.

G: Another question that pops up to mind in this context is, as today central banks are no longer considering inflation transitory, which index do you think is better suited to estimate core inflation?

M: The headline inflation is too noisy, as it is often driven by supply shocks. Hence, the measure of core inflation, which reflects the long-term underlying trend in the aggregate price level, has gained increasing prominence, as it aids central banks in designing policy that targets inflation without overreacting to temporary shocks.

However, the optimal choice of index to be relied on for constructing core inflation depends on the specific economic conditions, objectives, and policy context that a central bank is navigating. For instance, in times of economic stability, a simple core consumer price index (CPI) may suffice. However, during times of heightened volatility or structural changes, more sophisticated measures such as the trimmed mean or sticky price indices, may offer a clearer picture of inflationary pressures. Thus, it is difficult to identify a universally superior index, as each serves different purposes and may be relevant depending on the context.

Though the debate over the most suitable measure of core inflation remains unresolved, the core CPI, which excludes food and energy, continues to be the preferred choice for central banks in formulating monetary policy. Its prominence is largely due to its simplicity in measurement and clarity in communication, making it an essential tool for guiding policymakers.

G: In 2007, you published a paper, "Asymmetric Exchange Rate Intervention and International Reserve Accumulation in India". Please tell us how the problem was conceptualized and the methodology designed to assess the effect of asymmetric exchange rate intervention on the accumulation of large reserves.

M: Traditional models consistently underpredicted the demand for reserves when tested with recent data, which heightened my curiosity to uncover the true drivers behind this unprecedented accumulation, especially by the emerging economies. I conjectured that monetary authorities might be more proactive in resisting currency appreciation through market intervention while being more lenient toward depreciation, as the latter could potentially boost net exports.

To test this, I extended the buffer stock model of reserve demand to incorporate asymmetry in official intervention as an additional factor. An autoregressive distributed lag (ARDL) model was estimated to derive the long-run elasticities of the reserve demand function. The evidence showed that the RBI reacted more significantly to rupee appreciation than to depreciation of the same magnitude. This preference asymmetry in official intervention, in an era of persistent net capital inflows, has driven the accumulation of reserves.

These findings have since been corroborated by numerous studies, which argue that there exists a "fear of currency appreciation", reflecting the RBI's strategic preference for interventions that safeguard export competitiveness.

G: Later, you have published four more papers on the same subject but to answer different questions: one, to ascertain if RBI's preferences for rate management concerning the rupee's appreciation and depreciation are asymmetric (2009); two, to ascertain if there is a nexus between the level of reserve and scope for intervention in the forex market for rate stabilization (2018); three, to ascertain if forex market intervention reflects RBI's fear of reserve inadequacy (2023), and four to know if such intervention reduces volatility in the market (2023). Please enlighten us on these four studies.

M: Since the introduction of the market-based exchange rate system, the RBI has consistently maintained that intervention in the foreign exchange market is aimed at minimizing undue fluctuations in exchange rate that are not justified by economic fundamentals—a strategy often described as "leaning against the wind". However, in my initial empirical work on constructing an exchange market pressure index, I reported evidence that the RBI is more inclined to accommodate rupee depreciation while actively resisting appreciation. This unexpected asymmetry sparked my curiosity and led to a series of papers in which I corroborated this finding, ultimately establishing the presence of a "fear of currency appreciation".

At the same time, I recognized that the effectiveness of such interventions would largely depend on the central bank's capacity to intervene, which in turn hinges on maintaining an adequate level of foreign reserves. When reserves fall below a certain threshold, the authority may feel compelled to accumulate additional reserves, irrespective of exchange rate movements. This compulsion could even prompt the RBI to purchase foreign exchange even during periods of depreciation pressure, thus overriding its usual objective of stabilizing exchange rate volatility. In fact, several studies support my conjecture that official intervention under reserve inadequacy can exacerbate exchange rate volatility, further fueling my interest in probing this issue.

In investigating this phenomenon, I again focused on the RBI's asymmetric response to currency fluctuations. However, this asymmetry is now conditional upon the level of reserve holdings, with the resistance to rupee appreciation becoming more pronounced when reserves were deemed inadequate. The model was accordingly designed, and the empirical results supported my hypothesis: the RBI's aversion to currency appreciation is significantly stronger during periods of reserve inadequacy. This suggests that, at such times, intervention is driven not only by a desire to stabilize the exchange rate but also by a "fear of reserve inadequacy".

G: In the paper, "Dynamics of Inflation in India: Does the New Inflation Bias Hypothesis Provide Any Explanation", you have examined the RBI's policy response to supply shocks and argued that the policies it followed are inappropriate to stabilize expected CPI-WPI inflation. Please tell us how you arrived at this conclusion.

M: This paper explores the persistent divergence between two of India's most frequently cited inflation measures: the CPI for industrial workers and the Wholesale Price Index (WPI). Utilizing the inflation bias hypothesis, we sought to explain this divergence over time. We argued that the discrepancy arises primarily from the differences in coverage and weighting patterns between the two indices. These differences, when coupled with the RBI's policy focus on controlling inflation as measured by the WPI, rendered the central bank's approach less effective in stabilizing inflation expectations based on the CPI. This mismatch in policy emphasis, therefore, offers a compelling explanation for the sustained divergence between the two inflation measures.

G: In the paper, "Monetary Policy and the Behavior of Inflation in India: Is There a Need for Institutional Reform?" you have tested the behavior of inflation under various theories empirically. Please enlighten us about the implications of these studies for institutional reform.

M: Over the past five decades, inflation rates in many developed countries had exhibited a common trend: starting at low levels in the 1950s, inflation rises through the following decades, peaking in the 1970s, and subsequently declining to levels comparable to the initial period. Interestingly, the trend of inflation in India broadly mirrored this pattern, suggesting that explanations for inflation dynamics may apply across countries. In light of this observation, we constructed a reduced-form inflation model for India that incorporated various well-established “policy mistake” theories as specific cases.

We empirically tested the restrictions imposed by each of these theories on inflation behavior, and the reduced-form estimates provided evidence in support of all these theoretical frameworks. While the underlying causes of inflation bias differed across the theories, the core mechanism remained consistent: they all attributed inflation persistence to the nature of monetary institutions. This convergence highlighted the pivotal role of institutional frameworks in shaping inflation outcomes.

Using these findings, we analyzed India’s inflation trajectory over the past five decades and discussed the implications for institutional reforms. Our results underscore the importance of strengthening monetary institutions to mitigate inflationary pressures and ensure long-term price stability.

G: Moving on to inflation in US, you have tested the ‘opportunistic approach’ to disinflation using US data and found it effective during the Greenspan regime (2010). Please enlighten our readers on how you have conceptualized this study and the methodology adopted to test the idea.

M: Central banks across the globe have adopted diverse strategies to achieve price stability. One common approach to disinflation advocates a deliberate and gradual path toward price stability. In contrast, an alternative opportunistic disinflation strategy suggests that policymakers prioritize inflation stabilization during periods of rising inflation but focus more on output stabilization when favorable supply shocks naturally lower inflation without requiring aggressive policy interventions.

In this study, we empirically evaluate the opportunistic disinflation hypothesis using US data. Our findings support the view that during the Greenspan era, the Federal Reserve assigned greater weight to inflation stabilization when inflationary pressures were intensifying, while giving more emphasis to output stabilization when favorable supply-side developments helped reduce inflation. These results suggest that the monetary policy of the Greenspan may not be appropriately captured by a linear reaction function, as it appears to reflect a more nuanced, state-dependent approach to policymaking. While our results are contingent on the specific model used in this analysis, we believe they provide valuable qualitative insights into the opportunistic approach to disinflation.

G: In a paper published in 2011, you examined the currency equivalent monetary aggregates as leading indicators of inflation. Please tell us about this study and the significance of its results for policymakers of the day.

M: This paper focused on the construction of alternative measures of weighted monetary aggregates, including the currency equivalent monetary aggregates. The monetary aggregates were constructed for three alternative monetary measures—M1, M2, M3—and a liquidity measure—L1. Our findings revealed that the growth rates of these weighted monetary aggregates consistently outperformed their simple sum counterparts in predicting inflation, particularly at higher levels of aggregation. Based on the empirical evidence, we suggested that the RBI may consider monitoring the growth rates of weighted monetary aggregates within the framework of its "multiple indicator approach".

G: As a professor at Pondicherry University, you started researching capital markets too. Your first paper in this field, "Determination of Share Prices in India" states that dividend, PE ratio and leverage are the important determinants of share prices. It also states that profitability influences share price only in the case of the auto sector. Please enlighten us on how PE ratio affects the stock price but not the profitability.

M: The PE ratio reflects the price investors are willing to pay for a company's earnings, serving as an indicator of market sentiment about future growth. When investors perceive strong growth potential, a high PE ratio can motivate them to pay a premium for the stock. In fact, investors often use the PE ratio to assess the market's optimism about a company's ability to grow its earnings over time. This means that even a company with modest current profits might command a high share price if it is expected to achieve significant growth in the future, as the PE ratio captures those expectations. Conversely, a highly profitable company might still have a low PE ratio—and thus a lower stock price—if investors doubt the sustainability of its current profits.

In the case of the auto sector, profitability plays a more direct role in shaping share prices. This can be attributed to the capital-intensive nature of the industry. Auto companies invest heavily in manufacturing, research and development, and supply chains, making stable and sustained profitability critical to attracting investors. In such industries, profitability is seen as a key indicator of a company's ability to maintain operations, manage debt, and remain competitive over the long term. As a result, investors tend to place greater emphasis on profitability metrics when evaluating auto companies, unlike sectors such as technology or services, where growth potential and innovation often take precedence over current earnings.

G: In the paper "Are Investment and Dividend Decisions Separable", it was stated that they are inseparable. In another paper, "Long-Run Causal Nexus Between Share Price and Dividend", published in 2014, a bidirectional long-run causality between share price and dividend was identified. Please tell us how these studies were conceptualized and how you arrived at the said conflicting conclusions.

M: In our study on the separation principle, we address a key econometric issue that was overlooked in earlier research. Most empirical studies employed the Granger causality test after differencing the data when dealing with integrated time series. While differencing eliminates potential non-stationarity, it also leads to the loss of valuable long-run information. Furthermore, differencing introduces specification bias if the integrated variables are cointegrated in their levels. To resolve this issue, we first tested for cointegration between investment and dividend variables and subsequently estimated a dynamic panel vector error correction model (VECM). Our findings provide empirical evidence of a long-run causal relationship between investments and dividends, leading to the conclusion that a firm's decisions regarding dividend payouts and investments are, in fact, interdependent and hence, inseparable.

A similar methodology was applied in our study on the causal relationship between share prices and dividends, where we also employed a panel VECM. This analysis revealed bidirectional long-run causality between share prices and dividends. Both studies, while investigating different relationships, yield complementary inferences. For example, a strategic dividend policy can increase share prices, thereby enhancing a firm's market value. According to James Tobin's *Q*-theory, an increase in a firm's market value relative to its replacement cost encourages further investment. Thus, both studies align with the theoretical framework that underscores the interconnectedness of a firm's financial decisions, notably the linkages between dividend policy, share prices, and investment decisions.

G: Professor, you appear to have a passion for researching inflation. You have published a paper, "A Time-Varying Parameter Model of Inflation in India", in 2012, explaining the reasons behind the moderation noticed in inflation in the 1990s. Please tell us how the said conclusion was arrived at.

M: As widely recognized, many developed and developing countries, including India, experienced high inflation during the 1970s and 1980s, accompanied by sub-par economic performance. However, since the 1990s, inflation outcomes have markedly improved. This paper aims to address a crucial question: What factors have contributed to this enhanced economic performance?

We propose a time-varying parameter model for inflation, where the variation in parameters is modeled as driftless random walks. To address the "pile-up" problem—common when variances of the state specifications are small—we employ the median unbiased estimator. The time path of parameters is then estimated using the Kalman filter algorithm. Our time-varying estimates of the monetary policy reaction function indicated gradual changes in the rule coefficients over time.

The evidence highlighted several key factors behind the inflation moderation in the 1990s. While improved monetary policy and structural reforms played significant roles, the most striking finding is that favorable external conditions—often referred to as "good luck"—along with the exchange rate regime were major contributors to the decline in inflation. This evidence suggests that, to avoid a resurgence of inflation similar to that of the 1970s, the central bank must solidify its commitment to low inflation through institutional reforms, operational strategies, and clear communication. Otherwise, as external conditions change, the risk of high inflation returning becomes more pronounced once favorable circumstances subside.

G: In the same year, you have published a paper, "Sectoral Effects of Disinflation: Evidence from India", arguing that disinflationary monetary policy is more harmful to output growth in the non-farm sector as against output gain in the farm sector. Please enlighten us on how you have arrived at this conclusion and the reasons for the difference in its effect between the two sectors.

M: It is widely recognized that there exists a trade-off between inflation and output, implying that disinflationary policies typically lead to a loss in output. The output loss associated with a one percent reduction in inflation is commonly referred to as the sacrifice ratio. This paper aims to measure the sacrifice ratios for both the farm and non-farm sectors, as disinflationary policies are believed to affect these sectors differently.

Employing the non-parametric approach developed by Ball (1994)[2], we identify five episodes of disinflation in India between 1950-51 and 2009-10. These episodes were primarily driven by contractionary monetary policies implemented by the RBI. The empirical estimates of sacrifice ratios, alongside evidence of persistence and hysteresis effects, indicate that disinflationary monetary policy exerts a more detrimental impact on output growth in the non-farm sector. This is likely because the policy impact on the non-farm sector tends to be more immediate and pronounced. Conversely, the negative sacrifice ratio observed in the farm sector suggests an output gain during periods of disinflation. This gain appears to be driven by factors unrelated to contractionary monetary shocks, such as sector-specific dynamics or external conditions.

These findings underscore the importance of distinguishing between sectoral impacts when evaluating the consequences of disinflation. The use of

[2] Laurence M Ball (1994), "What Determines the Sacrifice Ratio?" in N Gregory Mankiw (Ed.), *Monetary Policy*, pp. 155-182, University of Chicago Press, Chicago, IL.

aggregate time series data could result in measurement errors for sacrifice ratios, obscuring the differential effects on various sectors of the economy.

G: Business community often complains about RBI models that overestimate inflation growth leading to higher policy rates. Having researched inflation extensively—"On the Methodology of Measuring Core Inflation" (2016); "Do Currency Equivalent Monetary Aggregates Have an Edge Over Their Simple Sum Counterparts?" (2013)—you are the right person to suggest a best-fit model for estimating inflation. Please reflect.

M: When monetary policy is forward-looking and aims at anchoring expected inflation, the choice of a reliable inflation model becomes crucial, as it directly influences policy decisions. The success of such policy depends on how accurately future inflation is predicted. If inflation forecasts are upwardly biased, the central bank may implement overly restrictive policies, which can have adverse effects on growth. In an empirical study, we demonstrated that UK inflation consistently fell below target, partly due to the Bank of England's biased inflation forecasts that led to unnecessarily tight monetary policy.

A range of models has been developed to explain inflation dynamics, most of which are rooted in the theoretical framework of the Phillips curve. However, identifying a single "best" model is challenging because the relationship between inflation and macroeconomic factors, such as aggregate demand and supply shocks, evolves over time. This shifting nature complicates the task of choosing a model that accurately reflects inflation dynamics across different periods.

Fortunately, econometric techniques can address this issue by allowing model parameters to change over time. Time-varying parameter models, such as those based on state-space representations or regime-switching models, can capture evolving relationships between inflation and its drivers. These tools help account for shifts in behavioral responses to aggregate demand and supply shocks, making the models more adaptable to structural changes in the economy. By incorporating such methods, policymakers can improve the robustness of inflation forecasts and better tailor monetary policy to changing economic conditions.

This flexible approach not only enhances the accuracy of inflation predictions but also minimizes the risk of policy errors, ensuring a more balanced trade-off between inflation control and economic growth.

G: It is the general perception of the market that the inclusion or exclusion of a scrip in the benchmark index affects its price and volume traded. You have studied these issues and presented a few papers. Please share your findings with our readers.

M: The perception that the inclusion or exclusion of a stock in a benchmark index affects its price and trading volume is well-founded and widely studied in financial markets. My research delves into both theoretical and empirical aspects of this phenomenon. When a stock is added to a major benchmark index, such as the Nifty 50 or the S&P 500, it typically experiences an immediate positive price reaction. This is largely driven by index funds and exchange-traded funds (ETFs) that are required to hold the newly included stock, creating a sudden surge in demand.

Moreover, inclusion in a prominent index enhances the stock's visibility and credibility, often leading to its perception as a stable, blue-chip investment. This increased visibility attracts both institutional and retail investors, further driving up demand. Consequently, trading volumes also rise significantly as both passive and active investors adjust their portfolios accordingly.

However, this initial price spike is often transient. Once index funds complete their rebalancing, prices tend to stabilize or may even correct. Empirical evidence from my research supports these dynamics, highlighting that while short-term price increases are common post-inclusion, the long-term sustainability of these gains is less certain.

G: It is commonly felt that with the rise in inflation, relative price variability (RPV) becomes greater but the reverse is not seen happening with a fall in inflation. You have published four papers on these issues: "Does Inflation Asymmetrically Affect Relative Price Variability?" (2014); "Inflation and Relative Price Variability: Evidence for India" (2014); "Price Rigidity, Inflation and Distribution of Relative Price Changes" (2015), and "Asymmetric Price Adjustment – Evidence for India" (2015). Please enlighten us about your findings on these issues.

M: The findings of these four studies can be summarized as follows: When decomposing relative price variability, inflation was found to account for approximately 45% of this variability, with its contribution increasing as inflation rises. This result confirms the distortionary effect of inflation on the relative price structure. We probed this issue further to find out whether cross-sectional distribution of commodity prices impacts inflation. We found that the price adjustment of most of the firms exhibits strong asymmetry; shocks that increases firm's desired prices causes quicker and larger rise in prices whereas shocks that lower desired prices cause smaller or no fall in prices. The presence of such asymmetry in price setting behavior of the firms further indicate that larger relative price variability can trigger inflation, as the cross-sectional distribution of prices tends to be skewed. According to the menu cost model of Ball and Mankiw (1994, 1995)[3, 4], skewness of the cross-sectional distribution of relative price changes is positively associated with aggregate inflation and empirical examination of this issue revealed that the skewness of relative price changes explains a significant proportion of short-run fluctuations in aggregate inflation. More importantly, the results indicate that the average size of price increases is greater than the size of price decreases implying downward rigidity in the prices of various commodities. In summary, these results indicate that heightened relative price volatility can fuel inflation independently of demand shocks. Moreover, the output distribution tends to be negatively skewed even when demand shocks are symmetric, implying that restrictive monetary policy measures, aimed at curbing inflation, could incur higher costs in terms of output adjustments.

G: It is often noticed that with the rise in crude prices, macroeconomic fundamentals get adversely impacted. Some even say that its effect is asymmetric. You have published a couple of papers on these issues. Please enlighten us about your research on these issues.

M: In light of the fact that India relies on imports for approximately 70% of its oil requirements, oil price shocks, whether they result from geopolitical tensions, supply disruptions, or changes in global demand, can influence various macroeconomic indicators, necessitating a deeper understanding of the nature and extent of these effects. In addition, there is growing evidence that macroeconomic variables respond differently to positive and negative oil price shocks, as well as to the magnitude of these shocks. In this study, we investigated the presence of such asymmetry with respect to certain key macroeconomic variables in India, including industrial output, inflation, exchange rates, and stock market returns. Given the inherent complexity of oil price dynamics and their interaction with the broader economy, we employed the econometric methodology developed by Kilian and Vigfusson (2011)[5], which provides a robust framework for testing asymmetry in economic responses and allows for the differentiation between small and large oil price shocks.

The results of our analysis indicated clear evidence of both asymmetry and nonlinearity in the responses of macroeconomic variables to oil price fluctuations. For example, industrial output and inflation responded more strongly to large oil price shocks than to smaller ones, with the effects

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3 L Ball and N G Mankiw (1994), "Asymmetric Price Adjustment and Economic Fluctuations", *Economic Journal*, Vol. 104, pp. 247-261.

4 L Ball and N G Mankiw (1995), "Relative-Price Changes as Aggregate Supply Shocks", *Quarterly Journal of Economics*, Vol. 110, pp. 161-193.

5 L Kilian and R J Vigfusson (2011), "Are the Responses of the U.S. Economy Asymmetric in Energy Price Increases and Decreases?", *Quantitative Economics*, Vol. 2, No. 3, pp. 419-453.

persisting over varying forecast horizons. Similarly, the exchange rate and stock returns exhibited nonlinear reactions, underscoring the fact that the macroeconomic impact of oil price changes is not uniform across time or variable type. These findings align with the broader literature, which has argued that economies dependent on oil imports, like India, tend to be more vulnerable to price increases than to decreases, due to cost-push inflation and increased input costs for industries reliant on petroleum products.

G: Recently, businesses cried in chorus for a cut in the benchmark interest rate arguing that high interest rates affect growth in the economy, while RBI refuses to cut repo rate arguing that high inflation is equally undesirable for growth. Having researched the topic and its related issues, you are the right person to enlighten us on these conflicts. Please reflect.

M: High interest rate raises the borrowing costs, discourages investment and ultimately slows down economic growth. It is then obvious that businesses will have a hue and cry whenever the authority tightens its instruments by hiking the interest rate and calls for a rate cut. However, the monetary authority may be reluctant to lower rates due to concerns over inflation, asserting that price stability is a precondition for sustainable growth.

A key issue to consider in this context is the role of real interest rates—the interest rate adjusted for inflation—in determining aggregate demand. Inflation reflects upward pressure on aggregate demand, and one of the significant drivers of this demand, especially investment demand, is the decline in real interest rates. When inflation expectations rise and the monetary authority does not adequately adjust nominal interest rates upward, it leads to a decline in real interest rates. This can stimulate excessive borrowing and investment, exacerbating inflationary pressures with its attendant consequences on growth.

G: You have studied the relationship between inflation and inflation uncertainty. Please enlighten us on how you have measured inflation uncertainty and the findings thereof. Also, tell us how inflation exerts a positive impact on inflation uncertainty while the reverse is negative.

M: Understanding the dynamics between inflation and its uncertainty is crucial for policymakers, as inflation uncertainty can influence both inflation expectations and the broader economic environment, affecting decisions on monetary policy, investment, and consumption. In this context, this study provides an in-depth investigation into the causal relationship between inflation and inflation uncertainty.

To measure inflation uncertainty, we employ two advanced econometric approaches: the conventional generalized autoregressive conditional heteroskedasticity (GARCH) models and the more recent stochastic volatility

(SV) models. While former models assume that volatility is deterministic and conditional on past shocks, SV models allow for a more flexible and random evolution of volatility, making them particularly suitable for capturing the uncertainties inherent in inflation dynamics. Additionally, the Bai and Perron (1998, 2003)[6, 7] test is utilized to detect structural breaks in inflation over the sample period.

Our analysis is based on monthly data from June 1961 to April 2011, a period characterized by varying economic conditions in India, including episodes of high inflation, economic liberalization, and external shocks. The results of our study indicate that the measure of inflation uncertainty derived from the SV model is more reliable than the one obtained from the GARCH model and the causal relationship between inflation and inflation uncertainty is significantly influenced by the choice of the uncertainty measure.

The Bai and Perron structural break test identifies four distinct episodes of inflation during the sample period. These structural breaks correspond to major economic events or policy changes that have had lasting impacts on the inflation trajectory. Importantly, our results suggest that the nature of the causal relationship between inflation and its uncertainty changes across these different regimes. During the first two regimes, which cover the period from the 1960s to 1980s, inflation and its uncertainty appear to be independent of each other. This period is marked by relatively stable inflation patterns, suggesting that inflation uncertainty may have played a limited role in shaping inflation expectations or influencing the inflation process.

In contrast—after the 1980s—the evidence suggested bidirectional causality between inflation and its uncertainty, with inflation exerting a positive influence on inflation uncertainty. One of the important reasons often cited in the literature is increase in inflation warrants frequent policy intervention, which in turn increases the inflation uncertainty. This evidence indicates that periods of high inflation may exacerbate inflation uncertainty, making it more difficult to anchor inflation expectations.

The impact of inflation uncertainty on inflation is found to be negative, particularly in the later periods; suggesting that higher uncertainty about inflation may reduce investment and consumption, as economic agents become more risk-averse and postpone their decisions. This in turn could lower aggregate demand, exerting downward pressure on inflation.

G: "Inflation is always and everywhere a monetary phenomenon", said Friedman. But some in India believe that it is a fiscal phenomenon. Having researched

6 Jushan Bai and Pierre Perron (1998), "Estimating and Testing Linear Models with Multiple Structural Changes", *Econometrica*, Vol. 66, No. 1, pp. 47-78.

7 Jushan Bai and Pierre Perron (2003), "Computation and Analysis of Multiple Structural Change Models", *Journal of Applied Econometrics*, Vol. 18, No. 1, pp. 1-22.

the relationship between money and inflation, do you suggest that what Friedman said holds good for today's India?

M: Milton Friedman's famous assertion that "inflation is always and everywhere a monetary phenomenon" is grounded in the monetarist view that inflation occurs when there is an excessive increase in the money supply relative to the economy's productive capacity. Therefore, controlling inflation requires controlling the growth rate of money. In contrast, inflation could be unambiguously a fiscal phenomenon, if the fiscal deficit is monetized or stated otherwise, it is financed with seigniorage revenue.

In India, until we had done away with the issuance of ad hoc treasury bills in the middle of 1990s, thanks to the efforts of Dr Manmohan Singh when he was the finance minister while Dr C Rangarajan was the RBI Governor, the fiscal deficit was monetised to the extent that the outstanding ad hoc treasury bills at the end of financial year were automatically converted into long-term government debt.

Therefore, monetarist principles were relevant, particularly in the 1980s and early 1990s, when the RBI sought to curb inflation by tightening monetary policy and regulating money supply growth. Historically, episodes of high inflation in India, such as during the late 1970s and 1980s, were often linked to rapid increases in money supply, fueling the argument that inflation is fundamentally a monetary phenomenon.

Needless to mention, monetary policy plays a crucial role in controlling inflation, especially under the inflation-targeting regime adopted by the RBI. However, applicability of Friedman's assertion to modern India is more nuanced. India's inflation dynamics are shaped by a confluence of monetary, fiscal, and structural factors, making it difficult to attribute inflation solely to money supply growth. Thus, while monetary factors are undoubtedly important, they cannot be viewed in isolation from fiscal policies and external shocks when analyzing inflation in India. This calls for a balanced approach where both monetary and fiscal authorities work in tandem to achieve sustainable price stability and growth.

G: Of late, India is witnessing a large inflow of foreign capital in the form of foreign direct investment (FDI) and foreign portfolio investors (FPIs). Any volatility in the forex market or stock market is often attributed to the FPIs. Having researched this topic, please enlighten us about the factors that are causing exchange rate volatility.

M: FDI is widely recognized for its enduring and transformative impact on the host economy. Unlike short-term capital flows, FDI is typically long-term in nature, involving direct ownership, management, and operational control of assets by foreign investors. As a result, FDI is often associated with substantial positive spillover effects, such as the transfer of technology, improvement in managerial expertise, enhancement of productivity, and the creation of employment opportunities. Empirical evidence from numerous studies suggests that FDI contributes to economic growth, boosts industrial output, and fosters innovation by integrating domestic firms into global value chains. Moreover, FDI promotes knowledge transfer, facilitates access to international markets, and enhances the overall competitiveness of the host economy.

In contrast, FPI tends to be more volatile and speculative in nature, often driven by global market conditions, investor sentiment, and short-term arbitrage opportunities. An increase in the frequency and volume of FPI can exacerbate exchange rate volatility, as these flows are highly sensitive to external shocks, changes in interest rates, and shifts in investor sentiment. Sudden stops/reversals of portfolio capital can result in abrupt and destabilizing currency depreciation, leading to negative consequences for trade, inflation, and monetary policy. Exchange rate volatility can undermine investor confidence, increase the cost of hedging against currency risks, and create uncertainty for businesses engaged in international trade. Additionally, excessive reliance on short-term capital flows can weaken the effectiveness of domestic monetary policy, as central banks may struggle to maintain exchange rate stability in the face of volatile capital movements.

Therefore, while FDI is generally associated with positive and stable economic outcomes, FPI, due to its speculative nature, can increase the vulnerability of an economy to external shocks, leading to heightened exchange rate volatility and its attendant consequences for macroeconomic stability. As a result, policymakers in emerging markets must strike a balance between attracting FDI and managing the risks associated with volatile portfolio flows, ensuring that their financial systems are resilient to sudden shifts in investor behavior.

G: Ever since India opened up its economy, a set of economists wondered if its monetary policy could be effective in arresting inflation volatility. You have presented quite a few papers on these issues at various conferences. Please share with us your research findings on these challenges.

M: Your observation is accurate. The conduct of monetary policy becomes increasingly complex in an economy experiencing a significant rise in the volume and frequency of cross-border capital flows, particularly when it faces sudden stops or reversals of these flows. The experience of the RBI since the country adopted capital account convertibility illustrates this challenge. Over the past three decades, convertibility has led to a sharp increase in cross-border capital flows, sparking concerns about excessive exchange rate fluctuations—a phenomenon often referred to as "fear of floating." Consequently, minimizing exchange rate volatility has become a critical objective of monetary policy. In response, the RBI has actively intervened in the foreign exchange market to mitigate exchange rate fluctuations not justified by economic fundamentals. The substantial growth of India's foreign exchange reserves, from around $4 bn in 1990 to $689.46 bn as of September 30, 2024, is a clear reflection of the RBI's persistent intervention in the forex market.

However, such interventions have implications for another key monetary policy objective: price stability. When the RBI intervenes by purchasing foreign exchange during periods of net capital inflows to prevent the rupee from appreciating, it increases domestic money supply, potentially exerting upward pressure on the domestic price level. This, in turn, fuels inflation expectations. To moderate such inflationary pressure, central banks often engage in sterilization-selling government bonds in the open market to absorb the excess liquidity created by foreign exchange purchases. While sterilization can be effective in controlling inflation, sustained open market sales of bonds can lead to higher domestic interest rates or make interest rates rigid downwardly, which may attract further capital inflows, exacerbating the initial problem.

This dynamic illustrates the inherent conflict between the objectives of free capital mobility, exchange rate stability, and price stability—commonly referred to as the "impossible trilemma" in international economics. Emerging market economies, including India, are particularly vulnerable to the challenges posed by the policy trilemma, as managing the exchange rate stability, capital flows, and inflation becomes increasingly complex. Therefore, anchoring inflation expectations becomes more challenging when the central bank must also prioritize exchange rate stability in the face of volatile cross-border capital flows.

G: Of late, people who are for growth in the economy are calling for capital account liberalization. There is also another section that warns that India is not yet ready to manage the risk of capital flight. You have presented a few papers on these issues at various seminars. Please share with us your research on this vital issue.

M: The policy of liberalizing cross-border capital mobility presents both significant advantages and inherent limitations. On the one hand, allowing FDI plays a crucial role in addressing the domestic saving-investment gap, providing much-needed capital to fuel economic growth. Beyond merely filling this financial shortfall, FDI offers substantial spillover benefits, which can enhance productivity and innovation within the host country.

However, not all capital flows yield equally positive outcomes. Large volumes of speculative capital flows—often referred to as hot money—can create significant fluctuations in exchange rates, amplifying uncertainties for exporters and importers and potentially destabilizing the broader economy. Due to their more vulnerable economic structures, less liquid capital markets, and exposure to external shocks, these economies must carefully manage capital flows to avoid financial instability, often resorting to foreign exchange market interventions and the accumulation of reserves to cushion against the risks posed by volatile capital movements.

Consequently, it has become imperative for many emerging market economies to maintain an adequate level of foreign exchange reserves. Because, it serves as a buffer, enabling countries to absorb external shocks, such as sudden reversals in capital flows or sharp changes in global economic conditions. Thus, these economies must navigate the trade-offs between reaping the benefits of capital inflows and managing the risks associated with increased volatility, often through prudent reserve management and judicious market interventions.

In contrast, advanced economies, which typically enjoy more resilient financial markets and stronger institutional frameworks, often operate with free capital mobility and may rarely intervene in the foreign exchange market. Their robust economic fundamentals, deep capital markets, and stable currencies allow them to withstand the vagaries of global capital flows without frequent policy intervention.

G: In the recent past, a section of economists aired an opinion that inflation management is not the responsibility of monetary policy alone but also of the fiscal policy. You have presented a few papers on these issues. Please enlighten us about your research findings.

M: While inflation is primarily the concern of monetary authorities, relying solely on monetary instruments to control inflation has significant limitations, particularly in complex macroeconomic environments where conflicts often arise between monetary and fiscal policies. This necessitates a prudent coordination between fiscal and monetary policy measures to effectively manage inflationary pressures.

Empirical evidence, especially in recent years, underscores that monetary policy alone is frequently insufficient to contain inflation, particularly when the underlying pressures originate from the supply side or structural factors. In situations such as commodity price shocks, supply chain disruptions, or persistent fiscal imbalances, inflationary pressures can persist even in the face of aggressive monetary tightening. My recent policy study on India highlights that inflation is highly sensitive to various measures of fiscal deficit, especially to primary deficit. This finding indicates that managing inflation requires not only monetary interventions but also prudent fiscal management, with a particular focus on deficit control.

Further, in one of my earlier empirical studies, I established that government expenditure responds more rapidly to inflation than government revenue, suggesting that inflation itself contributes to widening fiscal deficits. This widening deficit, in turn, exacerbates inflationary pressures, creating a reinforcing cycle. These dynamics remain pronounced even in contexts where central banks have completely resisted monetizing fiscal deficits. As such, my findings supports the view that monetary tightening, while crucial, must be accompanied by fiscal discipline to achieve more effective inflation control. This is particularly relevant in countries like India, where inflation is not purely a monetary phenomenon but also reflects broader fiscal and structural imbalances.

G: You have carried out a seminal DRG study: "The Divisia Monetary Indices as Leading Indicators of Inflation", which is indeed being advocated by literature as a viable and theoretically appropriate alternative to simple-sum. Please share your findings under the project with our readers.

M: Measuring monetary aggregates through simple summation is theoretically unsound, as it amounts to aggregation errors that increases with level of aggregation. The simple-sum method assigns equal weights to all components, ignoring the fact that these components vary across a liquidity spectrum. The Divisia Constructs as indices of monetary candidates, in contrast, are theoretically more appealing and performed well in applications.

Given the RBI's reliance on a multiple indicator approach, where money stock serves as a key indicator, I proposed evaluating the Divisia monetary aggregate as an indicator variable for its relevance in policy applications. The RBI accepted this proposal and generously provided the necessary financial support.

Collaborating with RBI officials Rajib Das and Binod B Bhoi, we conducted the study that empirically demonstrated the superiority of the Divisia monetary aggregate over its simple-sum counterpart in predicting inflation in India. Our findings showed that the advantage of using Divisia indices increases with the level of aggregation, reinforcing their potential use as a leading indicator of inflation.

G: It is the general perception that inflation in India is more often driven by supply-side factors and believed that it warrants no policy intervention. You have carried out another DRG study—"Shocks and Inflation" sponsored by the RBI. Please enlighten us if this belief still holds good. Also, share the findings under the project with our readers.

M: The headline inflation is frequently driven by supply-side shocks, such as sudden increases in oil and food prices. It is widely agreed that monetary policy should remain neutral in response to such shocks, as their influence on overall inflation is typically transient, and these prices are beyond the domain of monetary authorities. However, when supply shocks persist, they may spill over into broader inflationary pressures through second-round effects, ultimately contributing to cost-push inflation and thus, warranting policy intervention.

This DRG study, conducted in collaboration with Rakesh Kumar from the RBI, documents empirical evidences to understand the dynamic response of inflation to supply shocks in the Indian context. Since the conventional measures of supply shocks suffer from significant measurement errors, we developed a new methodology, which we published earlier in *Economic Notes*, to construct a measure. The inference is, however, found to be against the conventional belief, as the econometric evidences obtained from a dynamic vector autoregression model indicated that supply shocks have enduring impact on inflation; hence, policy intervention may become necessary to combat such inflationary spiral.

G: You have guided 22 students for MPhil and 15 scholars for PhD and most of them worked on topics that you have been researching all along. In the recent past, a lot of hue and cry has been raised about the relations of guides and scholars across many universities. How do you go about selecting a scholar for offering guidance and selecting a topic for research?

M: The journey of guiding PhD scholars has always been a deeply emotional and fulfilling part of my career, although the process of choosing students is often out of my control. The admission committee or the scholars themselves usually determine the allotment, and I accept each student with an open heart, irrespective of their research interests or background. My goal is always to spark a passion for research in them, even when they come to me without a clear idea of what they want to pursue. Most aspirants, though eager to dive into research, often struggle with selecting a topic that will not only engage them but also have the scope to develop into a PhD thesis.

In such moments, I act as a guide and a mentor, helping them navigate through the initial fog. I usually ask them to start by reading review articles on topics they think they might be interested in. If they are unsure, I offer them issues to explore, carefully chosen based on the current relevance and research potential. This initial reading sparks discussions, and I am always there, available for conversations, ensuring they feel comfortable coming to me with any confusion or questions. I work hard to create a comfort zone where they feel at ease, breaking down any inhibitions or anxieties that might hold them back from expressing themselves fully.

It is not just about research; it is about making them feel like they belong in this academic journey. I invite my scholars to my home regularly, where we share meals, and often they take over the kitchen to cook dishes from their own cultures. These moments are cherished by all of us, as the act of sharing food brings us closer and fosters a sense of family. I also take my scholars to my village and ensure their stay is comfortable at my family home for a week. This is more than just a trip; it is an opportunity for them to see where I started my journey—coming from humble beginnings, growing up on a small farm, and pursuing an academic career against all odds. I hope it inspires them to believe that no matter where you come from, the sky is the limit if you have the determination and will.

My scholars are close to all my family members. My wife and everyone at home embrace them as part of our extended family. These are the values I inherited from my own mentor, Prof. Bandi Kamaiah, who guided me not only academically but emotionally as well. He nurtured my development with the same care and compassion I now try to offer to my scholars. It is not just about academic success; it is about creating bonds that last beyond the PhD program.

Over the years, I have never had a single interpersonal conflict with any of my students. On the contrary, I go beyond the role of an academic advisor and help them with personal issues, whether it is giving advice about marriage, assisting them in constructing their homes, or even guiding them in better financial planning. I take pride in knowing that my care extends beyond their research; I am deeply invested in their overall wellbeing and future.

What brings me the greatest joy, however, is seeing their success. Every one of my students has gone on to secure prestigious positions in reputed institutions both in India and abroad. Watching them thrive is like watching your own children grow and flourish. Though I may have been harsh with them at times—especially when they strayed from their research path—it was always out of a desire to see them excel. I know they understand this, and despite those tough moments, I feel the love and respect they have for me.

Their success is my success. Nothing makes me happier than knowing that I have played a role in shaping not just their careers but their lives. The bond I share with my students is one of the most treasured aspects of my career. It is a relationship built on trust, respect, and love, and it continues long after their academic journey with me has ended.

G: Now turning to your personal life, I would like to ask you to name the economists who influenced you the most and how.

M: When I look back at my journey, I can see that several economists played pivotal roles in shaping not only my career but also my perspective on the world.

The first and most prominent figure was Prof. Bandi Kamaiah, my PhD supervisor. I was grappling with the technical demands of Economics, particularly Mathematics, a subject that seemed almost insurmountable to me. But Prof. Kamaiah believed in me, even when I doubted myself. He suggested I take up monetary aggregation, a topic I was utterly unfamiliar with, and yet, his confidence in my ability to learn and grow was unwavering. He did not just provide guidance—he gave me hope and direction at a time when I was filled with uncertainty. His mentorship was not just academic; it was deeply personal, as though he was lighting the path forward for me when I could not see it myself. His unwavering belief in me fueled my drive to work harder and overcome my fears, especially in econometrics.

During my time at the GIPE, I had the privilege of interacting with Prof. V M Dandekar and Prof. Vikas Chitre, two luminaries whose influence extended well beyond the classroom. Prof. Chitre, with his vast knowledge of macroeconomics, made me see the world of data not just as numbers, but as stories waiting to be told—stories that could impact real-world policy decisions.

At Mumbai University, I was again blessed to be surrounded by towering figures in the field of Economics. Prof. D M Nachane, Prof. M J Manohar Rao, Prof. Errol D'Souza, Prof. Romar Correa, and Prof. Neeraj Hatekar further deepened my appreciation for the empirical foundations of Economics, encouraging me to never lose sight of the real-world implications of theoretical models. And then there was my time at the MSE, where I had the honor of being guided by Prof. Raja Chellaiah and Prof. U Shankar.

Amidst this academic journey, I also had the privilege of being closely associated with Dr. Vinish Kathuria and Dr. Gundimetha Haripriya. Their unwavering moral support was a lifeline during moments of doubt and distress. They reminded me that in the pursuit of knowledge, it is the connections we forge and the compassion we share that truly sustain us. Their encouragement lifted me during my darkest days, reminding me that I was not alone in this journey. It is these relationships that turned a rigorous academic path into a profoundly personal voyage of growth and understanding.

A pivotal chapter in my academic journey has been my long and deeply cherished association with The Indian Econometric Society (TIES) that offered me the privilege of working closely with two respected economists, Prof. V R Panchamukhi and Prof. K L Krishna. Their influence on me has been profound—Prof. Panchamukhi's humility despite his towering stature left an indelible mark on me. Prof. K L Krishna, a true legend in econometrics, inspired me not just through his brilliance but through the way he upheld the highest standards of academic integrity and rigor. His mentorship was a guiding force, one that continually pushed me to strive for excellence in every endeavor.

Equally important has been my close association with Professor N R Bhanumurty, a leading authority on public finance and policy. Our relationship, which began during his student days, has blossomed into one of mutual respect and admiration. From him, I have learned one of the most valuable lessons of my life—the importance of commitment and dedication. Each of these individuals touched my life and their influence remains with me forever.

The cumulative wisdom and encouragement I received from all these legendary economists helped shape my academic path, but more importantly, they moulded me as a person. The generosity with which they shared their knowledge, their openness to discussing ideas, and their unwavering commitment to advancing the discipline have been my guiding lights. Looking back, I feel an overwhelming sense of gratitude for having walked alongside such giants in the field.

G: Amidst your busy engagement in teaching and research you have also engaged in revising the syllabus and suggesting ways and means to better the teaching of Economics in various institutions. Recalling those experiences, how do you react if I say that our institutions are still not turning out 'straight-away' employable economists?

M: I fully agree with your observation. As a member of various boards of studies across the country, I recognize the need to completely revamp both the course structure and syllabus to better prepare students as employable economists. However, a sudden overhaul is neither feasible nor advisable. The current school education system is insufficient to equip students for an undergraduate or postgraduate program that matches the rigor of reputed international universities.

Additionally, existing faculty must adapt to offer more relevant courses, but I have encountered significant resistance from teachers. Without their cooperation, implementing new course structures is impractical. Furthermore, the current recruitment framework restricts institutions from hiring the right candidates. For instance, UGC guidelines mandate that candidates for assistant professor positions have a basic degree in Economics, limiting flexibility in hiring PhD holders in specialized fields like Mathematics, Statistics, or Computer Science to teach their respective subjects.

To achieve meaningful reform, we must bridge the gap between school education and graduate programs while granting institutions autonomy in faculty recruitment. A gradual, well-planned transition—with strategic revisions like foundational courses and modular learning—would allow students to adapt without overwhelming them or compromising education quality. This approach would not only improve employability but also ensure the reforms are effectively implemented.

G: As a teacher, researcher and trainer, you have accomplished a lot. Indeed, you did seminal work on inflation and its various facets. Of all these accomplishments, are there any that mean the most to you?

M: Every paper has its own significance either in terms of methodological advancement or in terms of new empirical findings. However, there are certain contributions which I feel more significant. For instance, an appropriate measure of core inflation is very useful for policymakers. There are number of ways to construct it. The authorities in general depend upon a measure which removes oil and food items from headline inflation, as the changes in them largely reflects supply shocks. Moreover, it is easy to calculate and to communicate. However, there is plenty of literature to substantiate the fact that they are less reliable for policy purpose. This led to invention of multiple methodologies to measure core inflation and unfortunately every method involves an element of arbitrariness.

We have developed a model-based measure which qualified all the necessary conditions, but when we update the model with new data the parameters of the model tend to change and hence, the estimates of past core inflation, which is awkward. These issues prompted us to invent a new method which is free from arbitrariness in choosing items to be eliminated and at the same time meet all the required conditions. It brings immense satisfaction when we sort out these issues and come out with an innovative idea through our research. In this respect, the paper titled "On the Methodology of Core Inflation" published in *Economic Notes* is very important for me.

Another important contribution is related to the discovery of the rationale behind the unprecedented accumulation of international reserves by emerging economies. While much of the prevailing literature focused on conventional explanations such as precautionary motives, mercantilist objectives, or self-insurance against capital flight, I sought to explore a more nuanced and dynamic rationale—one rooted in active foreign exchange market intervention and the hidden strategic objectives behind it.

In my study titled "Asymmetric Exchange Rate Intervention and International Reserve Accumulation in India", published in *Economics Letters*, I challenged the conventional wisdom and posited that the accumulation of reserves, particularly in emerging market economies, is not merely a passive byproduct of trade surpluses or precautionary savings. Rather, it reflects an active and deliberate policy response by monetary authorities, driven by a distinct asymmetry in their intervention preferences.

The empirical analysis, presented in the study, provided robust evidence for this hypothesis. Through a detailed econometric analysis, I demonstrated that central banks in these economies exhibit a clear and systematic bias towards purchasing foreign currency during appreciation episodes while showing relative leniency during periods of depreciation. This behavior, when modeled over time, results in a persistent upward trend in reserve accumulation, even in the absence of large trade surpluses or substantial capital inflows.

G: During the last three decades you have worked on macroeconomic fundamentals, forex and financial markets extensively. Is there still any aspect of the Indian economy that you would have liked to study but could not?

M: Yes. There are certain aspects of the Indian economy that I would have explored more deeply, especially in the realm of structural transformation and its interplay with inequality and labor markets. One area that has always intrigued me is the informal economy and its implications for economic development. India's informal sector accounts for a significant portion of the workforce, with estimates suggesting that nearly 80-90% of jobs are informal. Despite its sheer scale, the informal economy remains understudied, particularly in terms of its productivity, wage structures, and its integration with the formal economy. I believe a more in-depth analysis of this sector, especially post the economic liberalization of the 1990s, would shed light on why formal job creation has lagged growth rates and why wage inequality remains persistent. My earlier research focused on macroeconomic stability, inflation, and financial markets, which, while crucial, perhaps did not provide me enough space to study how structural factors such as education, skill development, and labor market rigidities interact with the informal sector and affect upward mobility.

G: Your referring to the 'informal economy' at once prompted me to go back to the subject. Sorry for the jump. You have observed that the informal economy/ unaccounted-for economy has a large share in the Indian economy. In such a scenario, how effective a raise of 25 bp or 50 bp in policy rates will be in arresting inflation? Also, please explain if this can be incorporated into inflation predictions.

M: The informal economy in India, which comprises nearly 80% of the workforce and contributes a substantial portion to the country's GDP, poses unique challenges to the efficacy of monetary policy. A significant proportion of transactions in this sector are cash-based and operate outside the formal financial system. Consequently, the transmission of monetary policy—whereby changes in policy rates influence borrowing costs, consumption, and investment—is notably weaker in the informal sector compared to the formal economy. This limits the direct impact of conventional monetary interventions on inflationary dynamics within the informal sector.

Moreover, informal markets often have less competitive structures and face structural constraints and hence, prices do not adjust as fluidly as they might in formal markets. Inflation in the informal economy could be driven largely by supply-side shocks or demand-pull factors related to unmonitored cash flows. Thus, the effect of a rate hike on headline inflation can be diluted if a substantial part of inflation originates from the informal economy, which operates independently of policy rate movements.

This is the reason why monetary policy actions complemented by a set of fiscal measures becomes critical in addressing inflation holistically. For instance, while rate hikes may control demand-pull inflation in the formal sector, fiscal measures can help address supply-side bottlenecks in the informal sector, reducing inflationary pressures from non-monetary sources. Fiscal interventions such as targeted subsidies, investment in infrastructure, and measures to improve supply chains, particularly in sectors like agriculture and energy, can help alleviate inflationary pressures that are beyond the reach of monetary policy alone. Additionally, policies aimed at formalizing the informal economy such as promoting financial inclusion and digital payments could enhance monetary policy effectiveness over time.

Under such scenario, traditional models like the Phillips curve or the New Keynesian Dynamic Stochastic General Equilibrium models, which assume smooth transmission mechanisms between interest rates and inflation, might not fully capture the informal sector's impact on inflation. Therefore, predicting inflation in economies with large informal sectors requires models that account for sectoral differences in price formation.

G: Reverting to your personal life, you are hardly 64 years and lot many healthy years are ahead of you. So, what can we look forward to in the years to come from you?

M: I have been teaching macroeconomics since the very beginning of my career, and over the years, many of my students have encouraged me to write a textbook on the subject. It is something I always aspired to do, but somehow, I never succeeded in bringing it to life. It has been one of my ambitions that remains unfinished.

In the past, I found great joy in writing about contemporary issues facing the Indian economy for newspapers like *The Hindu* and *Business Line*. There was something deeply fulfilling about translating complex ideas into words that could reach a broader audience. But as time went on, my focus shifted entirely to my PhD scholars and their research work, and I gradually stopped contributing those pieces to the public discourse.

I have missed that connection with the wider world, missed the feeling of sharing my thoughts on the challenges and opportunities in our economy.

Now, I am feeling a deep urge to return to that kind of writing, to once again voice my perspectives on the contemporary issues we face. I plan to rekindle that passion.

G: In all these accomplishments, your family must have played a key role. Please reflect.

M: Initially, my parents were convinced that I was not a cut out for education. My father and mother, deeply rooted in their way of life, saw me more as an extra hand on the farm than a student with a future in academia. They frequently urged me to focus on farming, believing that my path lay in the fields, not in the books. However, it was a turning point in my life when I performed well in my undergraduate studies—my success caught them by surprise. It was then that they slowly began to believe in my potential and agreed to support me, even though this was an unfamiliar journey for all of us.

My elder brothers, however, were my unwavering pillars of support from the very beginning. They extended not only financial help but also provided the emotional comfort that allowed me to focus on my studies. In a family where I was the first to attend college, I had no one to guide me, no roadmap to follow. It was all uncharted territory, and I had to navigate my way, often feeling lost but never losing hope.

When I joined the University of Hyderabad for my PhD, just 15 days after getting married, life took a significant turn. My wife had already completed her MSc in Physics and was working as a lecturer at Parashakthi College for Women in Courtallam, a beautiful town in the foothill of Western Ghats in Tenkasi district. From the very beginning, she became not just my life partner but also my greatest teacher and support. She was my first real guru, the one who finally helped me grasp Mathematics with clarity and logic—something I had struggled with all my life. Her patient, logical way of teaching made math understandable for me in a way that no one else had been able to achieve before. This was not just a personal victory for me; it also shaped how I later approached teaching Mathematics to my students. I learned from her how to simplify complex concepts and communicate them to those who, like I once had, struggled with the subject.

But her sacrifices did not end with teaching me math. She compromised in so many ways for the sake of my career. After our marriage, she shifted from her hometown and the comfort of her job to move with me when I joined MSE in Chennai. We were living apart for almost 20 years, and after she and my daughter moved to join me, we finally began to settle down in Chennai. Our daughter, born 10 years after our marriage, brought a radiant new light into our lives, which is why we named her Roshni. She filled our hearts with joy and gave our lives a deeper sense of purpose. Her arrival symbolized hope, anchoring us and giving me the strength and motivation to advance in my career.

But just as we thought we had found stability, life threw us another challenge. I had to leave MSE shortly after they joined me in Chennai, and this forced my wife and daughter to travel to Bangalore every weekend. It was a tremendous sacrifice for both—living out of suitcases, enduring long journeys, and struggling to make the most of the little time we had together. They did it all for me, without a single complaint. It was a heavy burden that they bore quietly, and I often found myself overwhelmed with gratitude for the strength they showed during those difficult times. Looking back, I realize that it was not just my personal efforts that shaped my journey, it was the love, sacrifice, and unwavering support of my family, especially my wife, that made everything possible. Without them, I could not have come this far.

I would be remiss if I did not acknowledge the extraordinary and unwavering support that has been showered upon me by Dr. S Karuthiah Pandian, IAS, Dr. Rajagopal Vakulabharanam, Prof. N S S Narayana, Prof. Ammanulla, and my friend, Mr. S Ravisubramanian, especially during those dark and uncertain times when I felt completely lost, vulnerable, and without direction. When I was on the edge, questioning my worth, these incredible souls stepped in with such love and selflessness, offering more than just advice, but a sense of security and strength that I could hold onto when everything seemed to crumble. It is not only me; my entire family shares this deep sense of gratitude. These individuals have not only touched my life but have also left an indelible mark on the hearts of those I hold dearest.

G: What advice you would like to give to the upcoming scholars in Economics?

M: For scholars to excel in teaching and research, a long-term plan is essential, coupled with the continuous efforts in acquiring critical skills in Mathematics, Statistics, Econometrics, and Computer Programming. More importantly, these skills must complement a solid theoretical foundation in Economics. Merely producing path-breaking contributions in a thesis is not enough; unless it is published in reputable journals, it will fail to gain the recognition it deserves. Publications not only enhance visibility but also serve as concrete evidence of the quality of the scholar's research.

In general, scholars tend to become overly focused on their thesis work during their PhD, often neglecting to stay engaged with the core subjects of Economics. This becomes problematic when they take up the responsibility of teaching, as the demands of teaching often consume all their time, leaving little room for further research. In my approach to mentoring scholars, they are required to attend my lectures, participate in conducting exams, and engage in the evaluation of answer scripts. By the time they complete their thesis, they are equipped to teach subjects such as Macroeconomics, International Finance, Mathematical Economics, Basic Econometrics, and Time Series Econometrics, armed with a rich repository of teaching materials and resources at their disposal. This holistic preparation ensures that they seamlessly integrate teaching and research into their academic careers.

One of the most profound decisions a scholar will ever make is the choice of a mentor. It is not just about academic guidance, it is about finding someone whose research contributions resonate deeply with the scholar's chosen field. A mentor's expertise, their ability to inspire, and their track record of meaningful scholarly achievements can shape not only the direction of a thesis but also the very course of a scholar's entire academic journey.

This is something I have learned through my own experiences, and it is a truth that has been reaffirmed time and again through my interactions with countless scholars over the past 30 years. The right mentor does not just impart knowledge, they provide a foundation of support and inspiration that fuels the scholar's growth, helping them navigate the inevitable challenges of research with confidence. A great mentor leaves an indelible mark on a scholar's life, empowering them to reach heights they may have never imagined.

Once they step into the role of a mentor, one of the most important lessons is that selecting candidates for research goes far beyond academic scores. It is crucial to assess their passion for research rather than solely relying on their academic performance in undergraduate and postgraduate studies. In my experience, academic merit is often a weak predictor of research potential. Passion, curiosity, and a sustained commitment to learning are far more indicative of future success in research.

G: So, that brings us to the end of our interview. Thank you, professor, thank you so much for your valuable time and the insights you shared with our readers. It is a great pleasure and honor for me to have this interview.❖

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