DISSERTATION PROPOSAL

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"The Individual Anomalies and Aggregate Impacts of Households' Consumption and Savings Decisions"

Thursday, November 8th, 2018
2:00 pm
Tepper Quad 2119/2120

My research interests are broad but generally involve investigating how and why households make certain consumption/savings decisions and how these decisions both impact and are influenced by aggregate economic outcomes. My repertoire thus far is three-fold: i) with coauthors Alan Montgomery and Christopher Olivola, I formally construct and estimate models of mental accounting on consumer-level transaction data to understand whether the theories of Thaler and Shefrin (1981) and Thaler (1985) play out in the data and, if so, how they help explain observed anomalies in high frequency consumption patterns; ii) with Finn Kydland, I posit that projected future slowdowns in United States aggregate output growth will primarily result from population aging regardless of the degree to which old agents face idiosyncratic consumption-welfare risk due to various health shocks; iii) with Bill Bednar, I show that the structural transformation of the United States economy from one centered on manufacturing to one centered on services can be explained both by increases in relative manufacturing productivity and increases in the relative productivity of goods utilized in various home production processes. Future work will continue to explore both the consequences of population aging for long-run aggregate economic outcomes and how home production can help explain long-run anomalies in the evolution of advanced industrial economies.

In part (i) I utilize the mental accounting framework to help explain anomalies related to both high frequency expenditure patterns and consumer credit utilization. Along with Alan Montgomery and Christopher Olivola, I explore the implications of mental accounting separately in two different papers to understand whether the underlying theory can help reconcile noise in high frequency, week-to-week expenditure patterns and the reasons for which individuals use credit cards for certain types of purchases but not others. Our formulations build on the concept of the dually-motivated consumer - a ``planner'' who forms budgets ex-ante and a ``doer'' who engages in consumption ex-post, after realizing the state of the world and forming his budgets (Thaler 1985). For both mental accounting explorations we develop structural models of household expenditure patterns which can accommodate high-frequency decisions at daily, weekly, and monthly levels. We then estimate the models on household pre-paid debit card, post-paid credit card, traditional debit card, and bank account ledgers using a proprietary dataset from a large, North American commercial bank. First, our findings broadly demonstrate that agents have extremely heterogeneous preferences over consumption and expenditure budgeting. Second, we find that agents engage in mental accounting in varying degrees. In Montgomery, Olivola, and Pretnar

(2016) we show that some consumers frequently re-evaluate expenditure budgets while others almost never do. In Montgomery, Olivola, and Pretnar (2018) we show that some consumers are irrationally credit loving while others are irrationally averse to using credit.

In part (ii), along with Finn Kydland, I build on the recent attention given to the increasing costs to individuals and families associated with caring for older people afflicted with debilitating diseases requiring continual assisted-living care. We explore general equilibrium aggregate outcomes in an overlapping generations model where the only form of uncertainty is the risk that when becoming old, agents may contract a permanent, debilitating disease like Alzheimer's or dementia, which causes them to enjoy every unit of consumption less than they otherwise would have. As a feature of our set-up, young agents are imperfectly altruistic toward their parents, supplying them with time to assist with caregiving activities. We consider how this particular risk in an economic environment featuring this particular kind of altruism interacts with population aging to dampen long-run aggregate output growth. Our results show that for the U.S., declines in the relative number of working-age adults to retirees over time will drive down long-run average annual growth rates regardless of disease risk. Estimates indicate that average annual aggregate output growth from 2016 to 2056 will be 50 basis points lower compared to an economy in which the age distribution remains the same as in 2016. Yet, we find that reimbursing young agents for time spent off-market caring for elders, while having minimal impact on growth, can lead to Pareto improvements as the population ages.

In part (iii) I argue, with Bill Bednar, that the structural transformation of the U.S. economy from one dependent mostly on goods manufacturing in the mid 20th century to the primarily services-oriented economy of the early 21st century can be partly explained as resulting from unobserved returns to home production. Thus far, this aggregate phenomenon has been explained as resulting from dual forces: consumers preferring services to goods consumption as incomes rise and manufacturing productivity outpacing services productivity, pushing more workers into services production and causing relative prices to rise as a consequence of Baumol's cost disease (Baumol 1967; Ngai and Pissarides 2007). We argue that income-based, household-side explanations are confounded by unobserved returns to home production. Our argument builds on the theoretical work of Buera and Kaboski (2012) who demonstrate that market services become more important for home production as market labor becomes more skill-intensive. Our estimates suggest that 41% of the change in relative consumption of non-durables to durables and 67% of the change in relative consumption of services to durables is due to relative price changes, with the remainder eaten up by unobserved advances in home productivity.