Entrepreneurial Human Capital and Enterprise Dynamics in a Developing Country Setting

Russell Toth, rdt28@cornell.edu

Cornell University

June 29, 2010
Motivation

- What are the factors/constraints behind the emergence of higher economic value (growth, employment, capital, returns) enterprise activity in developing countries, particularly at the household level?
Motivation

- What are the factors/constraints behind the emergence of higher economic value (growth, employment, capital, returns) enterprise activity in developing countries, particularly at the household level?
- Significant work, esp. recently, on microfirms, and large literature on the productivity and dynamics of larger firms, but relatively less work on firm dynamics focused on the entrepreneur, and emergent small and medium firms.
Motivation

What are the factors/constraints behind the emergence of higher economic value (growth, employment, capital, returns) enterprise activity in developing countries, particularly at the household level?

Significant work, esp. recently, on microfirms, and large literature on the productivity and dynamics of larger firms, but relatively less work on firm dynamics focused on the entrepreneur, and emergent small and medium firms.

Important for our understanding of the microeconomics of entrepreneurial development, area of growing policy interest, and outcomes for the huge non-farm labor population in developing countries (labor demand).
Motivation: The "Missing Middle"

Concern that microfirms aren’t "moving up".
Further Motivation

- Concern that microfirms aren’t "moving up".
- Emerging micro-level evidence that some (micro, small and medium) firms in developing countries have high returns to physical capital.
Further Motivation

- Concern that microfirms aren’t "moving up".
- Emerging micro-level evidence that some (micro, small and medium) firms in developing countries have high returns to physical capital.
- Broad hypothesis from literature: financial/credit constraints.
Concern that microfirms aren’t "moving up".

Emerging micro-level evidence that some (micro, small and medium) firms in developing countries have high returns to physical capital.

Broad hypothesis from literature: financial/credit constraints.

Yet, recent tests on credit interventions indicate heterogenous and focused effects.
Further Motivation

- Concern that microfirms aren’t "moving up".
- Emerging micro-level evidence that some (micro, small and medium) firms in developing countries have high returns to physical capital.
- Broad hypothesis from literature: financial/credit constraints.
- Yet, recent tests on credit interventions indicate heterogeneous and focused effects.
- Focus of study: transition from micro to small, so could use household dataset with large enough cross-section to see small enterprises (and have individual traits and avoid firm-level selection) ⟷ Indonesia Family Life Survey (IFLS).
Focus: Transition from Micro to Small, and Constraints to Small

![Graphs showing comparison between High-Income Countries and Low-Income Countries.

- High-Income Countries: The number of firms peaks in Micro enterprises and then decreases as the size increases.
- Low-Income Countries: The number of firms is significantly lower, indicating the 'missing middle' segment is underrepresented.

The missing middle refers to the gap in economic activity between micro and large enterprises.

---

Toth (Cornell University)  EHC & Enterprise Dynamics  June 29, 2010 5 / 20
Particularly if business startup and growth requires lumpy, fixed investment (Banerjee-Newman JPE 1993), then (potential) entrepreneurs could be constrained by lack of credit access.
Hypotheses From Existing Literature: Financial Capital or Human Capital?

- Particularly if business startup and growth requires lumpy, fixed investment (Banerjee-Newman JPE 1993), then (potential) entrepreneurs could be constrained by lack of credit access.

Hypotheses From Existing Literature: Financial Capital or Human Capital?

- Particularly if business startup and growth requires lumpy, fixed investment (Banerjee-Newman JPE 1993), then (potential) entrepreneurs could be constrained by lack of credit access.


- Critique: e.g., Hurst and Lusardi (JPE 2004).
Hypotheses From Existing Literature: Financial Capital or Human Capital?

- Particularly if business startup and growth requires lumpy, fixed investment (Banerjee-Newman JPE 1993), then (potential) entrepreneurs could be constrained by lack of credit access.


- Critique: e.g., Hurst and Lusardi (JPE 2004).

- Role of human capital (financing seems less important): de Mel et al. (2008), Djankov et al. (2005), Dunn and Holtz-Eakin (JOLE 2000), Fairlie and Robb (JOLE 2007).
Ex ante hypothesis: credit and institutional constraints.
Ex ante hypothesis: credit and institutional constraints.

Takeaways:

Credit almost never important for startup, though may be important at certain stage of firm growth.

HUGE role for business knowledge and capacity, particularly after startup – how to know what to produce, how to market a product, how to innovate, how to manage employees, etc.

Institutional constraints (e.g., registration, taxation, etc.) don’t seem to be a huge concern.

Role of cultural factors (e.g., Chinese vs. pribumi), boundaries of the firm, etc.
Ex ante hypothesis: credit and institutional constraints.

Takeaways:

- Credit almost never important for startup, though may be important at certain stage of firm growth.
Ex ante hypothesis: credit and institutional constraints.

Takeaways:

- Credit almost never important for startup, though may be important at certain stage of firm growth.
- HUGE role for business knowledge and capacity, particularly after startup – how to know what to produce, how to market a product, how to innovate, how to manage employees, etc.
Ex ante hypothesis: credit and institutional constraints.

Takeaways:

- Credit almost never important for startup, though may be important at certain stage of firm growth.
- HUGE role for business knowledge and capacity, particularly after startup – how to know what to produce, how to market a product, how to innovate, how to manage employees, etc.
- Institutional constraints (e.g., registration, taxation, etc.) don’t seem to be a huge concern.
Ex ante hypothesis: credit and institutional constraints.

Takeaways:

- Credit almost never important for startup, though may be important at certain stage of firm growth.
- HUGE role for business knowledge and capacity, particularly after startup – how to know what to produce, how to market a product, how to innovate, how to manage employees, etc.
- Institutional constraints (e.g., registration, taxation, etc.) don’t seem to be a huge concern.
- Role of cultural factors (e.g., Chinese vs. pribumi), boundaries of the firm, etc.
Large proportion of developing-country firms are in micro category, vast majority do not grow, have higher turnover, and sizeable proportion seem to have relatively low returns.

IFLS4: 19% of enterprises with 5+ employees start with 1-2 employees, 1.7% starting with 1-2 employees have 5+ by 2007-08.
2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms. In IFLS4, only 14.4% of firms show net growth. Micro-firms that do grow seem to grow on par with larger firms. Remainder of larger firms seem to start off that way initially.

4. A significant proportion of firms seem to have returns to physical capital well exceeding market interest rate. Relatively large existing literature on this topic, using various measures. In IFLS4, 40% of firms have average returns to capital exceeding market interest rate (10%).
Key Stylized Facts About Micro and Small Enterprise Activity

2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
   - Microfirms that do grow seem to grow on par with larger firms.
Key Stylized Facts About Micro and Small Enterprise Activity

2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
   - Microfirms that do grow seem to grow on par with larger firms.
   - Remainder of larger firms seem to start off that way initially.
Key Stylized Facts About Micro and Small Enterprise Activity

2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
   - Microfirms that do grow seem to grow on par with larger firms.
   - Remainder of larger firms seem to start off that way initially.

4. A significant proportion of firms seem to have returns to physical capital well exceeding market interest rate.
2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
   - Microfirms that do grow seem to grow on par with larger firms.
   - Remainder of larger firms seem to start off that way initially.

4. A significant proportion of firms seem to have returns to physical capital well exceeding market interest rate.
   - Relatively large existing literature on this topic, using various measures.
Key Stylized Facts About Micro and Small Enterprise Activity

2. Seems to be "wage premium puzzle"; in IFLS4 median wage worker monthly return of 480,000 Rph. ($48 US), median self-employed 320,000 ($32 US), yet top decile seem to do better. Holds across life cycle.

3. Growth concentrated on a select proportion of small, and particularly micro-, firms.
   - In IFLS4, only 14.4% of firms show net growth.
   - Microfirms that do grow seem to grow on par with larger firms.
   - Remainder of larger firms seem to start off that way initially.

4. A significant proportion of firms seem to have returns to physical capital well exceeding market interest rate.
   - Relatively large existing literature on this topic, using various measures.
   - In IFLS4, 40% of firms have average returns to capital exceeding market interest rate (10%).
5. Heterogeneous response to recent policy interventions directed at credit access – microfinance, land titling. Same for some institutional interventions such as for one-stop business registration.
5. Heterogeneous response to recent policy interventions directed at credit access – microfinance, land titling. Same for some institutional interventions such as for one-stop business registration.

6. There does not seem to be a strong relationship between wealth and enterprise startup in IFLS.
Existing literature may be overstating the importance of credit and other external constraints to firms.

**Proposed Hypothesis**

- **EHC (Entrepreneurial Human Capital)**:
  - Stock of skill, ability, knowledge, and social capital specific to enterprise activity, inseparable from the person and can't be transacted.
  - Can be shifted through: (1) learning-by-doing, (2) learning from others (local social network or working in a relevant enterprise), and complements ex ante human capital endowments.
  - Can correlate with credit constraints – part of EHC may be person-specific factors that enable credit access; limited observability of EHC exacerbates credit constraints.
Proposed Hypothesis

- Existing literature may be overstating the importance of credit and other external constraints to firms.
- Proposed explanation: "entrepreneurial human capital" (EHC).

EHC stock of skill, ability, knowledge and social capital specific to enterprise activity, which is inseparable from the person and can't be transacted. EHC can be shifted through: (1) learning-by-doing, (2) learning from others (in local social network, or through working in a relevant enterprise), and complements ex ante human capital endowments. EHC can correlate with credit constraints – part of EHC may be person-specific factors that enable credit access; limited observability of EHC can exacerbate credit constraints.
Proposed Hypothesis

- Existing literature may be overstating the importance of credit and other external constraints to firms.
- Proposed explanation: "entrepreneurial human capital" (EHC).
- EHC stock of skill, ability, knowledge and social capital *specific to* enterprise activity, which is inseparable from the person and can’t be transacted.

EHC & Enterprise Dynamics
Toth (Cornell University)
Proposed Hypothesis

- Existing literature may be overstating the importance of credit and other external constraints to firms.
- Proposed explanation: "entrepreneurial human capital" (EHC).
- EHC stock of skill, ability, knowledge and social capital specific to enterprise activity, which is inseparable from the person and can’t be transacted.
- EHC can be shifted through: (1) learning-by-doing, (2) learning from others (in local social network, or through working in a relevant enterprise), and complements ex ante human capital endowments.
Proposed Hypothesis

- Existing literature may be overstating the importance of credit and other external constraints to firms.
- Proposed explanation: "entrepreneurial human capital" (EHC).
- EHC stock of skill, ability, knowledge and social capital specific to enterprise activity, which is inseparable from the person and can’t be transacted.
- EHC can be shifted through: (1) learning-by-doing, (2) learning from others (in local social network, or through working in a relevant enterprise), and complements ex ante human capital endowments.
- EHC can correlate with credit constraints – part of EHC may be person-specific factors that enable credit access; limited observability of EHC can exacerbate credit constraints.
2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment.
Outline of the Model

- 2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment
- Households endowed with:
  - Wealth and business capital, which can be used in the enterprise or as collateral,
  - Entrepreneurial human capital (EHC), which may be non-zero prior to entering the labor force.
  - Maximize according to expected returns under the possibility of credit constraints (may not be able to achieve optimal capital stock).
  - EHC can be built through occupational choices– the individual learns through experience.
  - EHC not directly tradable in market– need entrepreneurial “mixing”; limited by weak contracting and asymmetric information.
Outline of the Model

- 2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment
- Households endowed with:
  - Wealth and business capital, which can be used in the enterprise or as collateral,
Outline of the Model

- 2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment
- Households endowed with:
  - Wealth and business capital, which can be used in the enterprise or as collateral,
  - Entrepreneurial human capital (EHC), which may be non-zero prior to entering the labor force.
Outline of the Model

- 2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment.

- Households endowed with:
  - Wealth and business capital, which can be used in the enterprise or as collateral,
  - Entrepreneurial human capital (EHC), which may be non-zero prior to entering the labor force.

- Maximize according to expected returns under the possibility of credit constraints (may not be able to achieve optimal capital stock).
Outline of the Model

- 2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment
- Households endowed with:
  - Wealth and business capital, which can be used in the enterprise or as collateral,
  - Entrepreneurial human capital (EHC), which may be non-zero prior to entering the labor force.
- Maximize according to expected returns under the possibility of credit constraints (may not be able to achieve optimal capital stock).
- EHC can be built through occupational choices—the individual learns through experience.
2-period, discrete occupational choice model at household level: allocate 1 unit of labor between waged employment and self-employment

Households endowed with:
- Wealth and business capital, which can be used in the enterprise or as collateral,
- Entrepreneurial human capital (EHC), which may be non-zero prior to entering the labor force.

Maximize according to expected returns under the possibility of credit constraints (may not be able to achieve optimal capital stock).

EHC can be built through occupational choices—the individual learns through experience.

EHC not directly tradable in market—need entrepreneurial "mixing"; limited by weak contracting and asymmetric information.
Key Implications

- As a stock variable, EHC implies an optimal firm size (\(\implies\) low-EHC firms not grow, credit responsiveness from higher-EHC firms, at least up to some threshold).
Key Implications

- As a stock variable, EHC implies an optimal firm size (\(\implies\) low-EHC firms not grow, credit responsiveness from higher-EHC firms, at least up to some threshold).

- Two market "failures"—credit and non-tradability of EHC—can generate heterogeneous returns to capital across individuals in equilibrium. Credit alone doesn’t work—price of capital (and other markets) adjust.

- In the aggregate, frictions in EHC transmission generate "insiders" and "outsiders". EHC tends to get concentrated in "dynastic" entrepreneurial families. Lowers competition, productivity, and market wage, which can have adverse feedback effects (Ghatak et al, JET 2007).

- Contributions: theory behind dynamics of entrepreneurial aptitude, incorporate EHC into financial access.
Key Implications

- As a stock variable, EHC implies an optimal firm size (⇒ low-EHC firms not grow, credit responsiveness from higher-EHC firms, at least up to some threshold).

- Two market "failures"—credit and non-tradability of EHC—can generate heterogeneous returns to capital across individuals in equilibrium. Credit alone doesn’t work—price of capital (and other markets) adjust.

- Alternatives: returns to scale, missing (physical) capital markets, heterogeneous costs of credit, risk.
Key Implications

- As a stock variable, EHC implies an optimal firm size (implies low-EHC firms not grow, credit responsiveness from higher-EHC firms, at least up to some threshold).
- Two market "failures"—credit and non-tradability of EHC—can generate heterogeneous returns to capital across individuals in equilibrium. Credit alone doesn’t work—price of capital (and other markets) adjust.
- Alternatives: returns to scale, missing (physical) capital markets, heterogeneous costs of credit, risk.
- In the aggregate, frictions in EHC transmission generate "insiders" and "outsiders". EHC tends to get concentrated in "dynastic" entrepreneurial families. Lowers competition, productivity, and market wage, which can have adverse feedback effects (Ghatak et al, JET 2007).
Key Implications

- As a stock variable, EHC implies an optimal firm size (\(\iff\) low-EHC firms not grow, credit responsiveness from higher-EHC firms, at least up to some threshold).
- Two market "failures"—credit and non-tradability of EHC—can generate heterogeneous returns to capital across individuals in equilibrium. Credit alone doesn’t work—price of capital (and other markets) adjust.
- Alternatives: returns to scale, missing (physical) capital markets, heterogeneous costs of credit, risk.
- In the aggregate, frictions in EHC transmission generate "insiders" and "outsiders". EHC tends to get concentrated in "dynastic" entrepreneurial families. Lowers competition, productivity, and market wage, which can have adverse feedback effects (Ghatak et al, JET 2007).
- Contributions: theory behind dynamics of entrepreneurial aptitude, incorporate EHC into financial access.
Data Description: Indonesia Family Life Survey (IFLS)

- 4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.
4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.

Rich distribution of and information on firms–appears to allow observation of emerging higher-value enterprises, including in formal sector.

Good information on occupational histories and reasonably good entry/exit data.

Some returns data is available, though not ideal for estimation productivity or ability directly–need to use choice dynamics.

Reasonably detailed borrowing/loan data: in last 12 months, loans sought (turned down or obtained) and source, borrowing not from family/friends (amount), 15 questions on largest loan including collateralization.

Fine-grained proxies for EHC through experience measures.
Data Description: Indonesia Family Life Survey (IFLS)

- 4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.
- Rich distribution of and information on firms–appears to allow observation of emerging higher-value enterprises, including in formal sector.
- Good information on occupational histories and reasonably good entry/exit data.

Some returns data is available, though not ideal for estimation productivity or ability directly–need to use choice dynamics.

Reasonably detailed borrowing/loan data: in last 12 months, loans sought (turned down or obtained) and source, borrowing not from family/friends (amount), 15 questions on largest loan including collateralization.

Fine-grained proxies for EHC through experience measures.
4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.

- Rich distribution of and information on firms–appears to allow observation of emerging higher-value enterprises, including in formal sector.

- Good information on occupational histories and reasonably good entry/exit data.

- Some returns data is available, though not ideal for estimation productivity or ability directly–need to use choice dynamics.
Data Description: Indonesia Family Life Survey (IFLS)

- 4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.
- Rich distribution of and information on firms—appears to allow observation of emerging higher-value enterprises, including in formal sector.
- Good information on occupational histories and reasonably good entry/exit data.
- Some returns data is available, though not ideal for estimation productivity or ability directly—need to use choice dynamics.
- Reasonably detailed borrowing/loan data: in last 12 months, loans sought (turned down or obtained) and source, borrowing not from family/friends (amount), 15 questions on largest loan including collateralization.
Data Description: Indonesia Family Life Survey (IFLS)

- 4 rounds: 1993 to 2007-08, with recall data. Sample of 7200 households plus their splits, 13 provinces, 300 communities.
- Rich distribution of and information on firms—appears to allow observation of emerging higher-value enterprises, including in formal sector.
- Good information on occupational histories and reasonably good entry/exit data.
- Some returns data is available, though not ideal for estimation productivity or ability directly—need to use choice dynamics.
- Reasonably detailed borrowing/loan data: in last 12 months, loans sought (turned down or obtained) and source, borrowing not from family/friends (amount), 15 questions on largest loan including collateralization.
- Fine-grained proxies for EHC through experience measures.
Preliminary Empirical Results: Enterprise Formation

- Relationship of experience in entrepreneurial activity to enterprise outcomes relatively novel from developing-country setting (Parker 2009).

Entry. Accounting for age of household head, household labor supply, ex-ante household wealth, and credit institutions, find that prior enterprise experience of household head strongly related to enterprise startup, particularly with permanent employee. As in Hurst & Lusardi (JPE 2004), find that wealth statistically but not very economically significant–increase in wealth at median level leads to 25% increase in probability of starting an enterprise. Startup with permanent worker, conditional on startup. Accounting for age of household head, household labor supply, ex-ante household wealth, and credit institutions, find prior experience running enterprise with permanent employees significantly related to startup of same.
Relationship of experience in entrepreneurial activity to enterprise outcomes relatively novel from developing-country setting (Parker 2009).

Entry. Accounting for age of h-hold head, h-hold labor supply, ex ante household wealth, and credit institutions, find that prior enterprise experience of household head strongly related to enterprise startup, particularly with permanent employee.

As in Hurst & Lusardi (JPE 2004), find that wealth statistically but not very economically significant—increase in wealth at median level leads to 25% increase in probability of starting an enterprise.

Startup w/ permanent worker, cond. on startup. Accounting for age of h-hold head, h-hold labor supply, ex ante household wealth, and credit institutions, find prior experience running enterprise with permanent employees significantly related to startup of same.
Relationship of experience in entrepreneurial activity to enterprise outcomes relatively novel from developing-country setting (Parker 2009).

Entry. Accounting for age of h-hold head, h-hold labor supply, ex ante household wealth, and credit institutions, find that prior enterprise experience of household head strongly related to enterprise startup, particularly with permanent employee.

As in Hurst & Lusardi (JPE 2004), find that wealth statistically but not very economically significant—increase in wealth at median level leads to 25% increase in probability of starting an enterprise.
Preliminary Empirical Results: Enterprise Formation

- Relationship of experience in entrepreneurial activity to enterprise outcomes relatively novel from developing-country setting (Parker 2009).

- Entry. Accounting for age of h-hold head, h-hold labor supply, ex ante household wealth, and credit institutions, find that prior enterprise experience of household head strongly related to enterprise startup, particularly with permanent employee.

- As in Hurst & Lusardi (JPE 2004), find that wealth statistically but not very economically significant—increases in wealth at median level leads to 25% increase in probability of starting an enterprise.

- Startup w/ permanent worker, cond. on startup. Accounting for age of h-hold head, h-hold labor supply, ex ante household wealth, and credit institutions, find prior experience running enterprise with permanent employees significantly related to startup of same.
Returns. Accounting for age of enterprise (survival effect), along with location dummy (Java) and urban dummy, find EHC experience measures significantly correlated with returns: 2,450,000 Rph. ($245 US) per year increase in net profit per year of experience, where means returns about 5 million Rph. per year ($500 US).
Returns. Accounting for age of enterprise (survival effect), along with location dummy (Java) and urban dummy, find EHC experience measures significantly correlated with returns: 2,450,000 Rph. ($245 US) per year increase in net profit per year of experience, where means returns about 5 million Rph. per year ($500 US).

Prior experience (purges some endogeneity) measures also correlates in expected ways, including prior enterprise complexity.
Returns. Accounting for age of enterprise (survival effect), along with location dummy (Java) and urban dummy, find EHC experience measures significantly correlated with returns: 2,450,000 Rph. ($245 US) per year increase in net profit per year of experience, where means returns about 5 million Rph. per year ($500 US).

Prior experience (purges some endogeneity) measures also correlates in expected ways, including prior enterprise complexity.

Robust to inclusion of the capital and labor stock of the enterprise (arguably quasi-fixed).
Returns. Accounting for age of enterprise (survival effect), along with location dummy (Java) and urban dummy, find EHC experience measures significantly correlated with returns: 2,450,000 Rph. ($245 US) per year increase in net profit per year of experience, where means returns about 5 million Rph. per year ($500 US).

Prior experience (purges some endogeneity) measures also correlates in expected ways, including prior enterprise complexity.

Robust to inclusion of the capital and labor stock of the enterprise (arguably quasi-fixed).

Robustness of experience measures to fixed effects (unobserved heterogeneity), at individual level (Iverson et al., 2009).
Further reduced-form empirical work—panel estimation, more work on individual characteristics and entrepreneurship, and evidence on "dynastic entrepreneurship", IV approaches to credit access.
Further Development (in progress)

- Further reduced-form empirical work–panel estimation, more work on individual characteristics and entrepreneurship, and evidence on "dynastic entrepreneurship", IV approaches to credit access.

- Dynamic model of enterprise investment and EHC. Use revealed-preference approach based on people’s enterprise choices and returns to back out innate and dynamically-evolving stock of EHC. Reference: Keane and Wolpin (JPE 1997).
Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such means to identify such entrepreneurs.
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such.
  - Means to identify such entrepreneurs.
- Ways to build up EHC—are policy interventions feasible?
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such.
  - Means to identify such entrepreneurs.
- Ways to build up EHC—are policy interventions feasible?
  - Skeptical about some training approaches.
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such.
  - Means to identify such entrepreneurs.
- Ways to build up EHC—are policy interventions feasible?
  - Skeptical about some training approaches.
  - Business mentoring (higher-value EHC).
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such.
  - Means to identify such entrepreneurs.
- Ways to build up EHC—are policy interventions feasible?
  - Skeptical about some training approaches.
  - Business mentoring (higher-value EHC).
  - Practical entrepreneurial training?
Policy Implications

- Distinguish micro and small enterprise policy in terms of welfare vs. growth/innovation, etc.
- Focus on higher-potential micro and small enterprises.
  - Building up private credit markets (credit bureau, credit history, markets for risk, etc.), if such.
  - Means to identify such entrepreneurs.
- Ways to build up EHC—are policy interventions feasible?
  - Skeptical about some training approaches.
  - Business mentoring (higher-value EHC).
  - Practical entrepreneurial training?
  - Microfinance as selection device.
Thank you!

Russell Toth
Cornell University
rdt28@cornell.edu
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
- Culture issue – Chinese vs. pribumi.
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
- Culture issue – Chinese vs. pribumi.
- The boundaries of the firm.
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
- Culture issue – Chinese vs. pribumi.
- The boundaries of the firm.
- EHC transmission interventions?
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
- Culture issue – Chinese vs. pribumi.
- The boundaries of the firm.
- EHC transmission interventions?
- Practical and context-relevant technology and knowledge transfer for low-EHC self-employed?
Future Work

- Higher-potential entrepreneurs (ITB Bandung project).
- Institutions and entrepreneurship.
- Culture issue – Chinese vs. pribumi.
- The boundaries of the firm.
- EHC transmission interventions?
- Practical and context-relevant technology and knowledge transfer for low-EHC self-employed?
- Optimal credit provision for SMEs – particularly adverse selection.