창업생태계 재구조화를 통한

혁신 성장 전략 연구

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2008년 글로벌 금융위기 이후 대부분의 선진국은 경제의 활력이 저하되고 특히 청년층을 중심으로 높은 실업률이 지속되는 등 저성장 상태가 지속되고 있다. 이러한 경기 침체와 더불어, 기술의 급격한 진보로 인해 기업과 산업의 수명주기가 단축되는 변화를 겪고 있다. 새로운 혁신 역량을 갖춘 새로운 기업들의 시장 진입이 빨라지면서 전통적인 기업과 산업은 큰 위기를 겪고 있다. 오늘날 많은 나라에서는 이러한 경제적 환경 변화에 대응하여 경제에 활력을 제공하고, 새로운 일자리를 창출하기 위해 창업을 적극적으로 육성하고 있다. 창업은 새로운 아이디어와 기술을 경제에 새롭게 투입하는 역할을 하여 경제 혁신의 원동력이 된다.
그러나, 창업은 인적자본, 문화, 자금, 기술 등 창업과 관련된 모든 요인들이 상호 작용한 결과 이므로 창업의 성과에는 열정 있는 창업가 개인의 노력도 중요하지만, 창업 기업을 둘러싼 이해관계자, 환경이 더욱 중요한 역할을 한다. 최근 많은 연구에서는 이러한 프로세스 전반을 ‘창업 생태계’라고 정의하고, 창업 생태계의 건강이 창업의 성패를 좌우하는 중요한 열쇠로 규정하고 있다. 정부의 창업 생태계 형성과 지원 노력의 정당성을 인정받기 위해서는 우선 창업생태계 내에서 정부의 역할에 대해 논의가 필요하다. 이 논문에서는</td></tr>
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한국의 창업 생태계와 정부의 정책 사례를 중심으로 창업생태계 발전을 위한 바람직한 정부의 역할을 논의하고자 한다.

2. 창업 생태계의 정의

생태계란 용어는 영국의 식물학자인 Tansley (1935)가 처음 사용하였다. 그는 생태계는 organisms과 이를 둘러싼 환경을 모두 포함하는 것으로 정의하였다. 생태계는 organisms과 이를 둘러싼 환경인 무기체가 상호작용하는 공간을 의미한다. 이는 단순히 하나로 묶는다는 것을 넘어서서 다양한 요소들이 체계적으로 조직되어 있으며 평형상태를 이루고 있는 하나의 "체계"라는 의미이다.

Business 분야에서 생태계적 관점에 대한 논의는 1990년대부터 등장하였다. James F. Moore는 1993년 기업의 경영환경을 '경쟁의 생태계'로 표현하면서 처음 생태계라는 용어가 등장하였다. 이후 많은 연구자들이 'entrepreneurial ecosystem'을 다양하게 정의했다. 한편, 'entrepreneurial ecosystem'는 대기업, 중소기업, 창업기업들과 같이 기업의 규모나 특성에 관계없이 기업 활동의 전반에 걸쳐 적용되는 개념인 반면, '창업 생태계'는 창업 기업에 적용되는 개념으로 둘은 차이가 있다.

창업 기업은 일반적으로 창업한지 얼마되지 않은 기업 혹은 창업 과정에 있는 초기 단계의 기업을 지칭하는 표현으로 널리 사용되고 있다. 그러나, 사람들의 '창업기업'에 대한 인식을 고려하면 단순히 역사가 짧은 기업을 '창업기업'으로 정의하는 것은 바람직하지 않다. 사람들은 새로운 물건이나 서비스를 제공하는 기업, 혁신적인 기술을 보유한 기업, 빠르게 성장할 가능성이 있는 기업과 같이 세상을 바꿀 가능성이 있는 기업을 '창업 기업'으로 인식한다. 많은 academic literature에서도 '창업기업'의 주된 기능을 혁신으로 인식하고 있다. 이 연구에서도 '혁신성'을 '창업기업'의 주요한 특성으로 인식하고 '창업 생태계'를 '아이디어와 기술을 가진 창업자, 가능성이

있는 초기기업, 멘토와 자본을 보유한 인큐베이터, 그리고 이해관계자들이 참여하여 상호작용을 통해 지속적으로 보완, 발전, 유지되는 체계'로 정의하겠다.

3. 창업 생태계에 대한 정부의 역할

3.1. 창업 생태계에 대한 선행 연구

다양한 기관과 학자들이 창업 생태계의 구성요소에 대해 정의했는데, 연구자마다 구성 요소를 다양하게 정의하고 있지만, 공통적으로 창업 생태계의 구성요소로 정부 또는 정책을 포함하고 있다. 정부는 세금과 보조금과 같은 금전적인 지원을 통해 기업 활동을 돕고, 규제 및 정책을 통해 기업의 활동을 규율한다는 측면에서 창업 생태계에 중요한 영향을 미치기 때문이다. 그러나, 많은 창업 생태계에 대한 연구는 정부의 역할보다는 대학이나 지원 기관(벤처 캐피탈, 인큐베이터)을 중심으로 이루어지고 있다. 반면, 창업 생태계에 대한 많은 연구에서 정부의 역할은 부수적인 기능이나, 외생 변수로 고려되면서 크게 논의되고 있지 않다. 그러나, 창업 생태계를 완전히 이해하기 위해서는 또 다른 중요한 구성요소인 정부의 역할에 대한 논의가 필요하다. 다음 장에서는 창업 생태계에서 정부의 역할에 대한 2가지 관점을 먼저 제시하고 이를 토대로 바람직한 정부의 역할을 고찰하겠다.

3.2 창업 생태계에 대한 2가지 관점

Bottom-up 접근

이 관점은 창업생태계도 자연의 생태계와 같이 외부적인 충격이 없으면 균형을 유지하며, 외부 충격이 발생하더라도 균형을 회복하려는 resilience를 갖으며, 시간을 거쳐 스스로 진화한다고 본다. 생태계 내에서 창업 기업들이 다윈의 적자생존이나 자연선택을 통해서 스스로 균형상태를 유지하고 진화한다고 주장한다. 즉, 새로운 창업 기업들이 나타나지만, 경쟁력을 갖추지 못한 기업들은 도태되고, 경쟁력 있는 기업만 살아남아 생태계를 유지, 발전시킨다는 것이다. 이러한 견해에 따르면, 정

부의 개입은 시장에 의한 자유로운 선택의 결과에 왜곡을 초래하여 오히려 창업생태계에 악영향을 초래하기 때문에 정부의 개입이 최소화되어야 한다고 주장한다.

Top-down 접근

이 견해는 '창업 생태계'가 자연에 존재하는 생태계와는 다른 '인공적인' 생태계라는 점을 강조한다. 창업 생태계는 비교적 짧은 시간에 개인, 기업 등의 상호 작용으로 구축된 인공적인 생태계이며, 균형 또한 자연 생태계보다 불안정하고 계속 변화할 수 있다. 또한, 자연 생태계에 비해 구성 요소들이 생태계 전체에 미치는 영향이 크고, 구성 요소의 변화는 생태계 전체의 균형의 변화를 초래할 수 있다. 이렇게 창업 생태계를 자연의 생태계와는 다르게 인식하는 입장에서는 창업 생태계에 대한 정부의 인위적인 개입이 필요하다고 주장한다.

소결: Bottom-up-Top-down approach

'Bottom-up', 'Top-down' 중 어느 한 가지 접근만으로는 창업생태계에서의 정부의 역할을 제대로 설명할 수 없다. 정부는 창업생태계의 개입을 최소화하면서 생태계 자체 능력에 의해 균형을 이루고 진화해 나갈 수 있도록 해야 한다. 하지만, 창업생태계가 형성될 수 있도록 제도를 만들고 take-off 할 수 있도록 지원해야 하는 책임도 동시에 갖고 있다. 이렇게 창업생태계에 대한 정부의 역할의 양면성을 지니고 있기 때문에 접근 방식 또한 'Bottom-up', 'Top-down'의 융합이 필요하다. 즉, 원칙적으로 정부의 창업 생태계에 대한 개입은 최소화되어야 하지만, 창업생태계의 초기 단계, 미발전 단계에서는 보다 적극적인 역할을 수행해야 한다. 다만, 이러한 정부의 역할도 old public administration에서와 같이 결정하고 지시하는 역할이 되어서는 안된다. 창업 생태계를 조성하고, 조정하는 역할에 국한되어야 한다. 이러한 접근 방법을 Colombo et al.(2019)은 'Bottom-up-Top-down approach'로 정의했다.

3.2. 바람직한 정부의 역할

'Bottom-up-Top-down approach'에 따르면 정부는 창업생태계를 보완하는 측면에서 역할이 인정된다. 창업생태계는 발달단계에 따라 필요한 요소들이 달라지기 때문에 정부의 역할도 이에 맞춰 바뀌어야 한다. 일반적으로 창업생태계가 진화, 발달함에 따라 스스로 유지하고, 조정하는 능력(self-sustaining and self-governing ability)을 갖추게 된다. 따라서, 초기에는 정부가 창업생태계에 대한 적극적인 역할을 수행하지만, 창업생태계의 발전에 따라 정부는 생태계내 구성원에게 점차 역할을 넘겨주고 역할을 축소하여야 한다(Isenberg, 2011).

창업생태계 초기 단계 정부는 창업생태계가 형성될 수 있도록 창업생태계와 이해관계자에 대한 제도나 규칙을 설정하는 'rule settler'의 역할을 해야 한다.

창업생태계 성장 단계 정부의 지원 정책은 창업생태계가 정책에 의존하는 결과를 초래하고 창업 생태계를 왜곡할 수 있기 때문에 정부의 직접적인 개입은 축소하고 창업 생태계 내에서 운영될 수 있도록 역할을 점차 이양해야 한다. 그러나, 여전히 창업 생태계가 스스로 진화하거나 조정하기에는 불완전하므로 정부는 여전히 지원하는 역할을 수행해야 한다. 또한, 정부의 지원 역할을 수행하는 경우에도 시장의 왜곡을 최소화하기 위해 직접적으로 player로 참여하기 보다는 시장의 메커니즘 활용 등을 통해 간접적으로 지원하는 방향으로 전환해야 한다.

창업생태계 성숙 단계 이 단계에서는 창업 생태계가 스스로 발전하고 규율할 수 있을 정도로 완벽하게 작동하게 된다. 따라서, 정부가 창업 생태계를 육성하기 위한 지원이나 개입의 필요성이 거의 없어지게 된다. 정부의 개입은 생태계를 왜곡하여 오히려 성장을 저해하는 역효과를 낼 수 있기 때문에 정부의 개입은 최소화되어야 한다. 한편, 창업 생태계에 대한 정부의 조정과 감독의 필요성은 높아진다.

4. 한국의 창업 생태계

4.1 한국의 창업 기업 현황

한국은 2000년대 이후 창업활동이 활발하게 증가하면서 양적인 성장을 이루었다. 그러나, 질적인 성장은 양적인 성장을 따라가지 못하고 있다. 벤처기업의 경영성과를 나타내는 매출액 증가율과 영업이익률은 하락세를 보이고 있다. 2012년 벤처기업의 매출액 증가율은 15.8%를 기록했으나, 2018년에는 7.9%까지 하락했다. 영업이익률도 2014년 5.8%에서 2018년 4.0%까지 하락했다. 한국의 창업 기업의 성장이 더딘 이유는 다양하지만, 창업생태계의 효율성이 낮은 것도 중요한 이유 중에 하나이다. 왜냐하면, 창업 생태계는 창업기업이 성장에 필요한 요소들을 제공하고, 혁신이 지속적으로 일어날 수 있도록 유도하는 체계이기 때문에 좋은 창업생태계에서는 창업기업의 성과도 더 높게 나타나기 때문이다

4.2 한국의 창업 생태계 현황

창업생태계의 효율성, 2011년부터 시작된 Global Startup Ecosystem Report는 창업자, 투자자의 전략적 의사결정을 위한 객관적 데이터 제공과 개별 생태계의 취약점 파악 및 보완을 위한 정보제공 등을 목적으로 전 세계 주요 도시의 창업생태계 순위를 발표하고 있다. 2019년 54개 도시를 한 평가에서는 창업생태계가 우수한 30개 도시(The Next 30)에 포함되지 못했다. 이는 한국의 창업생태계가 빠르게 발전하고 있지만 아직은 글로벌 top tier에 속하지는 못한다는 것을 보여준다.

창업생태계 발전 단계, 한국의 창업생태계는 과거 자금, 네트워크 등 창업을 위한 모든 요소들이 크게 부족하여 정부의 지원에 의존할 수밖에 없는 초기상태에 머물렀다. 그러나, 최근 자금, 네트워크 등 창업 생태계의 구성요소들이 부족한 상태에서 벗어나, 양적으로 빠르게 확충되고 있으며, 필요한 자원을 생태계내에서 획득할 수 있게 되었다. 그러나, 창업기업이 필요한 모든 자원을 생태계 내에서 원활히 확보할 수 있는 성숙단계에 비해서는 여전히 부족한 상태이다.

4.3 한국의 창업 생태계 지원 정책

대체로 1980~1990년대가 한국 창업생태계의 태동기라는 점에 대해서는 크게 이견이 없다. 이후, 한국의 창업생태계 지원 정책은 시기별로 큰 변화를 보이게 된다. 한국의 창업생태계 지원 정책의 변화는 연구에 따라 3단계에서부터 5단계로 구분하기도 한다. 한편, 창업 생태계 지원 정책의 방향이 정권의 성격에 따라 변화해왔다는 점을 고려하면 이를 정권별로 구분할 수도 있다. 이 보고서에서는 한국의 창업 생태계 지원 정책을 정권별로 구분하여 살펴보도록 하겠다.

1997~2007, 진보 정권

1997년 출범한 *Progressive regime(Democratic Party)*은 1997년 외환위기가 대기업 중심의 경제체제에서 기인한 것으로 인식하고 경제체제를 대기업 중심에서 혁신적인 중소기업 중심으로 바꾸기 위해 벤처/창업 기업을 육성하기 위해 많는 노력을 실시했다. 이 시기 창업 생태계의 기반이 전무했기 때문에 한국 정부는 창업 생태계 조성을 위한 제도적 기반을 구축에 집중했다. 그 결과 2001년 벤처기업이 1만개를 돌파하는 등 창업 생태계도 폭발적인 성장을 이루었다. 그러나, 양적 성장에 치중하여 부실한 벤처/창업 기업도 확대되었고, 2000년대 초반 '닷컴 버블'이 붕괴되면서 창업 생태계도 같이 몰락하게 된다. 이를 계기로 한국 정부는 창업생태계의 질적 성장을 유도하는 방향으로 정책을 전환한다.

2008~2016, 보수 정권

이명박 대통령이 신자유주의 정책 기조 하에서 'Business friendly'를 정책의 기본 방향으로 설정하고 대기업에 대한 규제를 최소화하고자 했다. 그 결과 정책의 포커스도 창업/벤처기업 보다는 대기업에 맞춰질 수밖에 없었다(Kim, 2011). 또한, 전세계적인 금융위기 극복을 위해 경제적 파급 효과가 큰 대기업을 중심으로 한 경제정책을 추진할 수밖에 없었던 것도 창업/벤처 생태계 지원 정책이 상대적으로 덜 중요하게 다루어진

원인 중 하나이다.

그러나, 2013년 '창조 경제'를 정책 기조로 하는 박근혜 정부 출범 이후 창업이 '창조 경제'의 핵심수단이라는 인식하에서 창업생태계 지원 정책도 다시 확대된다.

2017~, 진보 정권

문재인 대통령은 기존의 창업 생태계 지원 정책의 큰 틀을 유지하면서 창업 생태계 지원은 더욱 확대했다. 첫째, '창업'이 역대 최고 수준으로 증가한 청년 실업 해소에 중요한 수단이었기 때문이다. 둘째, 창업생태계 조성은 문재인 정부의 경제정책의 3가지 기둥인 소득주도성장, 혁신성장, 공정경제와 모두 연결되는 핵심 수단이다. 창업은 대기업과 중소기업 간의 불균형 해소, 일자리 창출을 통한 국민소득 증대, 생산성 제고를 통한 성장을 유도하기 때문이다.

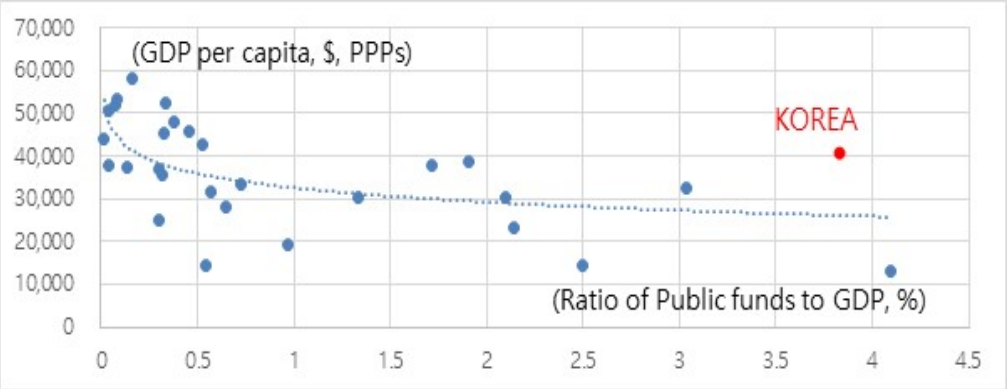
4.4 한국의 창업 생태계 지원 정책 평가

초기 한국 정부의 창업생태계 지원 정책은 'Top-down' approach 방식에 의존했다. 창업 생태계의 기반이 전무했기 때문에 창업 생태계 육성을 위해서는 정부가 직접 player로서 제도를 갖추고, 자금을 공급하는 역할을 할 수밖에 없었기 때문이다. 2008년 이후 한국 정부의 창업생태계 지원 정책의 기본방향은 정부의 직접적인 개입은 최소화하고 간접적인 지원으로 전환하는 방향으로 전환을 목표로 하고 있다.

그러나, 이러한 목표에도 불구하고 한국 정부의 창업생태계 지원 정책은 'Top-down' approach에서 크게 변하지 않은 것으로 평가된다. 2013년 발표한 '대학창업 5개년 계획'에서 창업 관련 지표를 대학의 평가에 반영한 것, 2014년 설치한 '창조경제혁신센터'에 대해 대기업을 지정하여 의무적으로 참여하도록 한 것들이 이러한 정부 중심의 창업생태계 조성 정책의 예이다. 또한, 2017년 발표한 10조원 규모의 '혁신 모험 펀드' 조성 정책도 여전히 정부 주도의 자금 공급 정책이 지속되고 있음을 보여준다. 특히, 한국의 GDP대비 중소기업에 대한 정책자금

규모는 다른 OECD 회원국에 비해 매우 높은 수준이다. OECD 회원국의 1인당 GDP와 GDP대비 정책자금 비중을 비교하면 1인당 GDP가 상승할수록GDP대비 정책자금 비중을 축소되는 반비례 관계를 보인다. 그러나, 한국의 경우 2018년 기준 GDP대비 정책자금 비중이 3.8%로 추세선을 크게 벗어나 있다는 것을 알 수 있다. 이는 창업생태계의 발전단계에 비해서 과도하게 정부의 자금지원에 의존하고 있음을 알 수 있다.

1인당 GDP와 GDP대비 정책자금 비중 비교



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5. 한국의 창업 생태계 지원 정책의 문제점

5.1 Top-Down 측면의 문제점

창업 생태계 발전 제약

현재 정부의 창업 기업 지원은 창업 생태계를 구성하는 모든 구성 주체, 엑셀러레이터, 대학, 밴처 캐피탈 등 까지 지원 대상이 확대되고 있다. 또한, 사업화 뿐만 아니라, R&D, 창업교육, 시설, 장비 지원, 컨설팅 등 창업을 위한 모든 단계를 지원하고 있다. 이러한 창업 생태계에 대한 정부의 직접 개입 확대는 필연적으로 창업 생태계의 경쟁력을 저하시킨다. 첫째, 창업 기업은 필요한 자원을 생태계 내에서 확보하지 않고 손쉽게 정부를 통해 얻는 것을 선호하게 된다. 이는 창업기업과 생태계의 단절을 초래하고 계속 정부에 의존하게 만들어 장기적으

로 창업기업의 경쟁력을 저하시킨다. 둘째, 엑셀러레이터/인큐베이터, 대학, 밴처 캐피탈 등의 역할과 활동을 위축시키면서 이들의 경쟁력을 저하시키게 된다.

창업 기업의 성장 제약

Park et al. (2018)은 정부의 정책자금 지원이 창업/벤처기업의 사업확장 의도에 미치는 영향을 분석하기 위해 5년 이내 신생기업을 대상으로 실증 연구를 실시했다. 그 결과 그들은 정부의 정책자금 지원이 창업 기업의 성장을 촉진하기 보다는 창업기업의 성장의 인센티브를 저해하는 효과가 있다고 결론을 내렸다. 대부분의 창업기업에 대한 지원은 기업이 성장하면서 축소되거나 중단되므로 정부의 지원에 크게 의존하는 창업 기업이 정부의 지원이 축소되거나 중단되지 않도록 사업을 현상 유지하려는 '피터팬 증후군'이 발생할 수 있기 때문이다. 특히, 한국의 경우 중소기업에 대한 관대한 지원 제도를 운영 중이기 때문에 이러한 유인은 더욱 커진다.

정부 정책 결정의 비효율성

정부의 지원 정책은 연속성을 확보하기 어렵고 비효율적이기 때문에 창업생태계와 창업기업의 성장이라는 본래의 목표 달성에 실패할 수밖에 없다. 한국의 창업 생태계 지원 정책은 창업생태계의 성장이 가장 중요한 목적이 아닌 다른 목표를 위한 수단으로 작용해 왔다. 예를 들어 박근혜 정부에서는 창조경제의 육성, 문재인 정부에서는 청년 일자리 창출과 같은 더욱 중요한 목적을 위한 하나의 수단으로서 설정된 것이다. 그러나, 창업생태계 육성과 다른 목표가 항상 동일한 정책 방향을 추구하는 것은 아니기 때문에 오히려 창업생태계 육성이 저해되는 경우도 있다. 또한, 정부의 정책 지원이 장기적으로 일관성 있게 유지되기보다는 정권이나 유행에 따라 변하기 쉽다는 점도 문제이다. 이는 창업 기업이나 창업을 준비중인 사람들이 장기적인 관점에서 계획을 추진하기 어렵게 하기 때문에 창업 기업의 성장과 발전을 저해하게 된다.

5.2 Bottom-Up 측면의 문제점

경제 구조적 환경: 대기업 중심 구조

창업생태계가 발전하기 위해서는 다수의 창업가와 자본가가 존재하고 기업의 생성, 진화, 그리고 소멸이 자유로우며 생태계 내 기업 및 구성원간 정보 공유가 용이할 뿐 아니라 기업 간 관계가 대등하게 이뤄진 완전경쟁적인 기업생태 환경이 조성되어야 한다. 그러나, 한국의 경우 대기업 중심의 독점적인 시장 구조로 창업 기업이 시장에 새롭게 진입하기 어렵고, 이미 규모의 경제를 이룩한 대기업과 비용 측면에서 경쟁이 쉽지 않다. 또한, 대기업과 창업 기업이 이용할 수 있는 자금, 인력, 기술 등에도 차이가 있어 공정한 경쟁이 불가능하다. 한국의 대기업과 창업 기업 간의 공정하지 못한 경쟁 구조는 창업 생태계 성장의 중요한 요건인 완전 경쟁적인 기업 생태 환경을 충족하지 못하게 하고 그 결과 창업기업의 성장을 저해했다.

사회 구조적 환경: 약한 사회 안전망과 학벌 중심 사회 구조

한국은 창업생태계의 안전망으로서 가장 기본적인 파산/면책 규정이 엄격한 편이다. 한국은 파산시 면책되는 재산이 최저생계비에도 미치지 못할 정도로 낮아 사회안전망으로서 역할을 하기에 충분하지 않다. 또한, 사회복지제도도 미흡한데, 이는 과거 한국은 고도성장기 복지지출보다는 경제성장에 집중하면서 복지제도의 도입과 확충이 지연된 데서 기인한다. 최근 복지지출이 빠르게 증가하고 있으나, 여전히 OECD 회원국과 비교해 사회안전망은 미흡하고 사회복지지출 비중은 낮은 편이다. 이렇게 부족한 창업생태계 안전망은 창업 실패시 개인의 파산으로 이어져 재기가 어렵기 때문에 한국의 창업기업과 생태계의 성장을 저해하고 있다.

문화적 구조: 창업에 대한 Stigma와 학벌 중심 엘리트 구조

한국의 경우 과거 고도 성장기에는 많은 기업가 정신을 갖춘 창업 기업이 계속 등장하면서 많은 기업들이 실패하고 일부 기업이 크게 성공하면서 대기업으로 성장하는 과정을 통해 창업 생태계의 역동성을 유지해 왔다. 그러나, 최근 창업에

	대한 부정적인 인식이 확산되면서 기업가 정신이 크게 후퇴했는데, 여기에는 창업에 대한 사회적 낙인에 상당 부분 기인한다. 이러한 한국의 창업에 대해 부정적인 인식은 1990년대 후반 경제위기로부터 시작되었다. 경제위기 과정에서 많은 기업들이 파산하면서, 기업가들이 재기가 곤란할 정도로 실패하는 것을 목격하면서 창업에 대한 부정적인 인식이 시작되었다. 그 후 2000년대 초반 '닷컴 기업'으로 대표되는 벤처기업들이 대규모 연쇄 파산이 시작된 '벤처 버블 붕괴'이후로 이러한 창업에 대한 부정적인 인식은 더욱 확산되게 되었다. 한국의 창업생태계의 발전을 저해하는 또 다른 문화적인 구조는 학벌중심의 사회 구조이다. 학벌은 '동일한 출신학교를 중심으로 이루어진 집단 또는 네트워크'로 정의될 수 있다. 그러나, 한국의 경우 이러한 집단 또는 네트워크가 다른 집단에 대한 배타적인 성향, 자기 집단에 대한 편향 등과 결합하면서 부정적으로 인식되고 있다. 학벌 중심의 문화는 창의적인 인재들이 자신들의 적성이나 소질과 관계없이 학벌 취득에만 노력을 하게 만든다. 그리고, 좋은 학벌을 취득한 이후에는 별다른 노력 없이도 대기업, 공공기관 등에 취직하여 안정적인 성공이 보장되어 있기 때문에 창업과 같은 위험을 부담하려고 하지 않게 된다. 결국, 창의적인 인재들이 창업 생태계로 유입되는 것이 막히게 되면서 창업 생태계가 성장하지 못하게 되는 것이다. **제도적 구조: 과도한 규제와 부족한 시장 감독 기능** 창업 생태계를 규율하는 제도는 창업 생태계의 형성에 가장 핵심적인 요소이며, 창업 생태계의 초기 단계부터 가장 우선적으로 설정되어야 하는 요소이다. 창업 생태계 내의 참여자들이 활동에 제약을 받지 않고, 자기가 갖은 능력을 최대한 발휘할 수 있도록 보장하는 것이 좋은 제도이며, 이러한 제도가 마련되어야 정부의 개입 없이도 창업 생태계가 스스로의 규율을 통해 발전할 수 있다. 그러나, 한국의 경우 창업 생태계의 자율성을 보장하는 제도적 기반이 미흡한 부분이 많다. 대표적인 예가 과도한 규제와 부족한 창업 생태계에 대한 감독 기능이

다.

한국의 경우 창업관련 규제는 적은 편이지만 반대로 진입 규제는 매우 강한 편이다. OECD에서 발표하고 있는 Product Market Regulation(PMR)에 따르면 2018년 한국의 PMR 순위는 36개 OECD 회원국 중 33위에 해당되었다. 이는 OECD 주요 회원국, 평균에 비해서도 매우 강한 수준이며, 경제 규모를 감안하더라도 다른 국가에 비해 매우 강한 편이다. 이러한 진입 규제가 창업 기업의 성장을 가로 막은 대표적인 사례가 '우버'와 비슷한 승차 공유 서비스를 제공하기 위해 설립되었다가 최근 영업을 중지한 '타다'이다. 이 사례는 한국의 진입 규제와 기득권 보호가 얼마나 강력하고 이러한 상황에서 창업기업이 얼마나 성장하기 어려운지를 단적으로 보여준다.
창업 생태계이 정부의 개입 없이도 스스로 성장할 수 있도록 하는 다른 중요한 요소 중에 하나가 정부의 감독 기능이다. 창업 생태계의 제도가 마련되더라도 이에 대한 감독이 미흡하면 '보이지 않는 손'이 작동하지 않을 수밖에 없기 때문이다. 한국은 특히 창업 생태계가 수직적 분업관계의 특성을 보인다. 따라서, 창업 기업은 대기업 간의 관계에서 불리한 위치에 놓일 수밖에 없다. 그 결과 대기업이 지위를 이용하여 거래 대상인 창업 기업의 납품하는 가격을 불합리하게 인하하거나, 계약 이후 기술만 빼앗고 계약을 파기하는 기술 탈취와 같은 불공정거래가 빈번하게 발생하고 있다(Yang 2017). 그러나, 창업 생태계 내의 규율을 위반하는 불공정 행위와 같은 일탈에 대한 정부의 감독과 시정 기능은 미흡하다.

6. 정책 대안

한국의 창업 생태계의 발전을 위해 한국의 창업 생태계 지원 정책은 역할의 전환이 필요하다. 한국 정부는 그 동안의 창업 생태계에 대한 직접적인 육성과 지원을 통해 선진국의 창업 생태계를 catch-up 하고자 노력했다. 그러나, 한국의 창업생태계가 초기 단계에서 벗어나 이미 스스로 성장할 수

	있는 성장 단계로 진입한 이상 정부의 직접적인 개입을 통한 육성은 더 이상 효과적인 정책이 될 수 없다. 오히려 과도한 개입은 창업 생태계의 경쟁력을 저하시킬 수 있기 때문에 최소화될 필요가 있다. 한국 정부의 창업 생태계 성장을 위한 지원 정책은 크게 다음과 같은 두 가지 방향으로 추진되어야 한다. 첫째, 창업 기업에 대한 직접 지원보다는 창업 생태계에 대한 지원으로 정책을 변경해야 한다. 창업 기업에 비해 성장이 더딘 창업 지원 기관과 같은 생태계 구성원의 성장을 통해 창업 기업이 정부의 지원 없이도 성장할 수 있도록 하는 것이다. 또한, 창업 기업을 지원하는 경우에도 창업 생태계내 메커니즘을 활용한 간접적인 지원을 통해 창업 생태계에 empowerment 해야 한다. 둘째, 창업 생태계를 제약하는 환경에 대한 개선을 보다 적극적으로 추진해야 한다. 창업 환경은 생태계의 발전 초기에는 정부 지원보다 중요도가 낮을 수 있지만, 창업 생태계가 지속적으로 성장하기 위해서는 건강한 창업 환경이 필수 요소이다. 그러나, 창업 환경은 경제, 사회 구조적 문제와 관련이 있기 때문에 창업 생태계의 구성원들의 노력 만으로는 변화시킬 수 없기 때문에 정부의 적극적인 개선 노력이 필요하다.

1. Introduction

Since the global financial crisis in 2008, most developed countries have struggled low growth rates and high unemployment rate. Along with this economic slowdown, we are experiencing changes that shorten the life cycle of businesses and industries due to rapid advancement in technology. As new companies with innovative technology and idea are entering the market, traditional companies and industries are facing a great crisis. Many countries today are actively fostering start-ups in order to revitalize the economy and create new jobs in response to these changes in the economic environment. Start-ups are regarded as the driving force behind economic innovation by injecting new ideas and technologies into the economy. This can be explained by the process of 'Creative Destruction (Schumpeter 1942)'. Start-ups pursue new business opportunities of high risk and high profit through new technologies and ideas and contribute to economic growth by replacing inefficient industries and creating jobs.

Many researches have founded that start-ups activity induce economic growth and has a positive correlation with economic growth and job creation. Lee (2005) divided 28 countries into high and low activity of start-ups countries for three years from 2000 to 2002 and analyzed the causality between economic growth and activity of start-ups in both groups. As a result, he concluded that high activity of start-ups had a positive effect on economic growth with a time lag of about two years. Kim & Kim (2014) also argued that the increase of the number of start-ups causes a positive effect on economic growth and employment with a time lag, by analyzing 17 industries in Korea between

2003 and 2010.

Since start-ups are the result of interaction of all elements related to start-ups such as human capital, culture, funds, and technology, the environment surrounding the start-ups have a greater influence on the performance than the individual efforts. Many recent researches defined this overall process as the 'Start-ups Ecosystem (SE)' and concluded a healthy SE is a key determinant of the to the success or failure of start-ups. Namely, start-ups can grow faster in a good SE, such as Silicon Valley. As a result, many countries are mimicking 'Silicon Valley Standard' and expanding support to make a Silicon Valley like SE. However, in order to be recognized for the legitimacy of the government's establishment and support efforts, it is necessary to discuss the role of the government in a SE.

In this dissertation, I would like to discuss the desirable role of a government for the development of a SE, focusing on case study of Korean government's SE policy. Korea is actively supporting SE in order to transform economic structure from conglomerates/chaebols which has been a key player since the developing era to start-ups and ventures. However, the outcome is still insignificant. In this regard, it is expected to be a good example to understand the role of a government in facilitating a SE.

In order to achieve these research objectives, in this paper, first, I will define the concept of a SE and analysis its components through literature review of prior researches. Second, in order to analysis the desirable role of a government for fostering

a SE, I will present two approaches of the role of a government, ‘Top-down' and ‘Bottom-up'. The proponent of ‘Top-down’ approach insists that a government should actively intervene as a player to foster a SE. On the other hand, the proponent of ‘Bottom-up’ approach insists that a government intervention should be minimized. However, since both approaches have weaknesses, I will conclude with an optimal approach that is a ‘Top-down-Bottom-up’, in which the role of a government should be changed depending on the stage of development of a SE. Third, the ‘Top-down-Bottom-up’ approach will be applied to evaluate the Korea's policy on fostering a SE.

As a result, I will present that the gap between the development stage of Korea's SE and the government's policy is hindering the growth of Korea's SE. That is, Korea's development stage of SE has passed the ‘Beginning’ and is entering the ‘Growing’, but the Korean government's SE support policy is still remaining the 'Top-down' approach that is effective in the ‘Beginning’. Finally, based on the results of the analysis, I will suggest desirable policy alternatives to foster start-ups and its ecosystem.

2. Definition of a SE

The term, ‘Ecosystem’, was first used by British botanist Tansley (1935). He defined the ‘Ecosystem’ as encompassing both organisms and the surrounding environment. And he also emphasized, “*organisms cannot be separated from the environment of the biome – the habitat factor in the widest sense… with which they form one physical system*.” Willis (1997) also suggests a contemporary definition of an ‘Ecosystem’: *“a unit comprising a community (or communities) of organisms and their physical and chemical environments, at any scale, desirably specified, in which there are continuous fluxes of matter and energy in an interactive open system”(*Vogel, 2013). In sum, an ‘Ecosystem’ means a space where organisms interact with other organisms and the environment surrounding them. This means more than just ‘Sum’, rather, it is a ‘system’ in which various elements are systematically organized. Today, the term ‘Ecosystem’ is used to describe the interdependence and complementary relationship between a specific object, other objects, and the environment, and is widely used in various fields of social science beyond ecology.

Discussion of the ecological perspective in the business field has emerged since the 1990s. James F. Moore first used the term ‘Ecosystem’ in business field in 1993, expressing the company's business environment as a ‘Ecosystem of competition’. Later he created the strategic planning concept of a business ecosystem in his book ‘The death of competition (1996)’. He defines it as *“an economic community supported by a*

*foundation of interacting organizations and individuals... producing goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they coevolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies…"(*Vogel, 2013). Cohen(2006) was the first to use the concept of 'Entrepreneurial ecosystem' instead of 'Business ecosystem'. He defined it as *"... an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures*" (Borissenko et al. 2016).

Since then, many researchers have defined the "*entrepreneurial ecosystem*" in various ways. Stam and Spigel (2016) define 'Entrepreneurial ecosystem' as *"a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within a particular territory*". Mason and Brown (2014) define the 'Entrepreneurial ecosystem' in a more detailed manner as *"a set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of 'Blockbuster Entrepreneurship', number of serial entrepreneurs, degree of sellout mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment*". Qian et al. (2013) define 'Entrepreneurial ecosystem' as "*those economic, social, institutional and all other important factors that interactively influence the*

creation, discovery and exploitation of entrepreneurial opportunities". Creation of new opportunities is seen as essential to 'Entrepreneurial ecosystem' (Borissenko et al. 2016).

Meanwhile, the 'Entrepreneurial ecosystem' is a concept that is applied to all aspects of business activities regardless of the size or characteristics of the enterprise, such as large enterprises, small and medium-sized enterprises (SMEs), and start-ups. On the other hand, the SE is a concept applied only to the Start-up. Start-up is generally used as an expression to refer to an enterprise that has just started a business or an early-stage enterprise in the process of starting a business. However, there is no clear consensus for distinguishing start-ups from ordinary enterprises (Robehmed, 2013).

Luger & Koo(2005) proposed three criteria: 'New', 'Active' and 'Independent' to define a 'Start-up'. Namely, they defined a start-up as a business entity: "which did not exist before during a given time period (new), which starts hiring at least one paid employee during the given time period (active), and which is neither a subsidiary nor a branch of an existing firm (independent)."

However, considering the people's perception of a 'Start-up', this definition is flawed. We are not simply referring to enterprises with a short history as 'Start-ups'. People recognize a 'Start-up' as an enterprise that offers new things or services, enterprises with innovative technology, and enterprises that are likely to change the world. In many academic literatures, the main function of start-ups is recognized as innovation (Nanda et al, 2013; Müller et al, 2012; Dempwolf et al, 2014). Eric Ries(2014) defined a start-

up in his book, ‘The Lean Start-up’, as “*A human institution designed to create a new product or service under conditions of extreme uncertainty*.” reflects this perspective.

In this regard, the definition of a 'Start-up' in this article will include ‘Innovation’ as a major factor. And this has the same meaning as Venture Business, a starting company that takes innovation as the main requirement in Korea's 'Act on Special Measures for The Promotion of Venture Business'. In sum, a 'Start-up' can be defined as a newly established enterprises that are independent of other entities, supplying goods or services in a new, innovative way.

On the other hand, since start-ups are only a part of enterprises, there is a difference in concept between a SE and an 'Entrepreneurial ecosystem'. However, many of the researches on the SE use the definition or model of the 'Entrepreneurial ecosystem' without distinguishing the difference between the two notions (Motoyama & Knowlton, 2017; Kim 2015; Cheah 2016). This seems to be due to the fact that, unlike the ‘Entrepreneurial ecosystem’, there are not many prior studies on the SE and the definition of the concept of start-ups is not clear. Also, simply defining a start-up as a new enterprise means that a SE also becomes part of the 'Entrepreneurial ecosystem', so there is no practical benefit to distinguish between them. However, as discussed above, when defining a start-up as an enterprise with 'Innovativeness' rather than simply a new one, a SE is inevitably different from an 'Entrepreneurial ecosystem'. This is because in the ecosystem where 'Innovativeness' is emphasized, the range of stakeholders and the degree of influence are different from the general 'Entrepreneurial

ecosystem'. Therefore, in this study, I will define the SE based on 'Innovativeness' as follows.: ‘A system that continuously develops and maintains through interactions by participating and interacting with entrepreneurs with ideas and technologies, potential initial companies, incubators with mentors and capital, and stakeholders.’

3. Role of Government in a SE

3.1. Academic literature review about model of a SE

The Model of SE illustrates all the stakeholders that make up SE and the relationships between them. I could find not so many models to explain SE in academic literatures, because many researches on the SE have used the model of a 'Entrepreneurial ecosystem'. This is because many models actually describe the growth of the business ecosystem through innovation despite the name 'Entrepreneurial ecosystem', and most of the companies to be explained in these models are innovative enterprises and start-ups.

For example, Vogel(2013) revealed in the article of the 'Entrepreneurial ecosystem' that the scope of research is limited to enterprises that lead innovation and social evolution as follows: "*While entrepreneurs drive change and innovation, they alone cannot be held responsible for creating the next steps in the societal evolution and the development of tomorrow's jobs*.". Therefore, despite the name of the model, it is natural to accept that the model of 'Entrepreneurial ecosystem' in many previous articles actually means model of a SE. Therefore, in this article, I will review various models of a 'Entrepreneurial ecosystem' to set the model of SE.

Etzkowitz(2017) explained that through the Triple helix model, the 'Entrepreneurial

ecosystem' consists of three stakeholders: industries, universities, and governments. And he argued that cooperation is important through loose connections between these three stakeholders in order to achieve sustainable economic development.

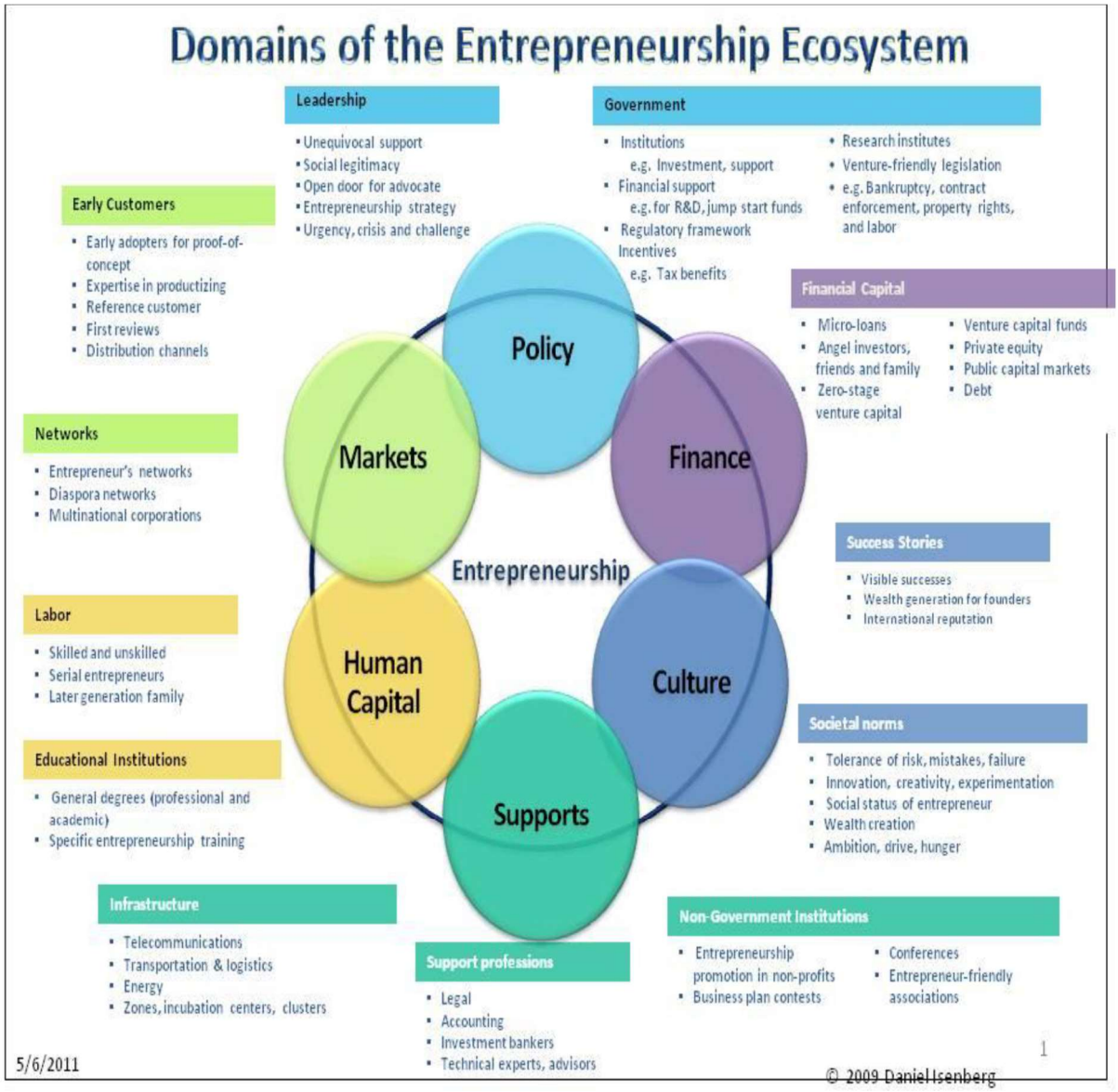
Wilson(2012) presented the quadruple helix model, which consists of four stakeholders: government, business, civil society, and academy, to explain an 'Entrepreneurial ecosystem'. He explained that the interconnection and cooperation of these four stakeholders are the most important factors for regional innovation. And, he insisted that cooperation between the stakeholders is maintained through cross-sector networks formed on the basis of mutual trust between the public and private sectors.

Foster et al. (2013) derived the following eight SE components based on the World Economic Forum survey of 1,000 global companies. : ①Accessible markets, ②Human Capital/Workforce, ③Funding & Finance, ④Support System, ⑤Regulatory Framework and Infrastructure, ⑥Education and Training, ⑦Major University as Catalysts, ⑧Cultural Support. Spigel(2015) presents the 10 components that make up the 'Entrepreneurial ecosystem' at the cultural, social and material level, and analyze the relationship between supports and reinforcements that contribute to the regeneration of these elements. The 10 components he proposed are: ①Supportive culture, ②Histories of entrepreneurship Worker talent, ③Investment Capital, ④Social Network, ⑤Mentor and role models, ⑥Policy and governance, ⑦Universities, ⑧Support Services, ⑨Physical infrastructure, ⑩Open markets. He emphasized that for the sustainable development of the 'Entrepreneurial ecosystem', it

is important to connect elements that provided or benefited to entrepreneurs, such as support organizations, entrepreneurship investment systems, and universities and technology transfer programs.

The Asepen Network of Development Entrepreneurs (ANDE) presented the 'Entrepreneurial ecosystem' model and measurement method by deriving the commonly presented evaluation elements from evaluation models of the nine organizations. According to this, the 'Entrepreneurial ecosystem' is composed of the following eight components(ANDE, 2013). ①Finance: VC, Angels, Stock Markets, ②Business Support: Incubators, Accelerator, ③Policy, ④Market ⑤Human Capital, ⑥Infrastructure, ⑦R&D, ⑧Culture. Isenberg(2011) analyzed the prior researches on the components of a 'Entrepreneurial ecosystem' and derived 12 main components in the following six common domains (Figure 1). ①Policy: Leadership, Government, ②Finance: Financial Capital, ③Culture: Societal norms, ④Supports: Non-Government Institutions, Support profession, Infrastructure, ⑤Human capital: Labor, Educational Institutions, ⑥Markets: Early Customers, Networks. He emphasized that these components do not exist individually, but only exist as components of an entire ecosystem in order for an 'Entrepreneurial ecosystem' to have self-sustaining.

<Figure 1. The Model of Entrepreneur ecosystem by Isenberg>



*source: Isenberg(2011)

Summarizing prior researches on the 'Entrepreneurial ecosystem' model, a government or policies are commonly included as a component of an 'Entrepreneurial ecosystem'.

This is because a government has a significant impact on an 'Entrepreneurial ecosystem' in terms of helping business activities through financial supports, such as taxes and subsidies, and governing ecosystem through regulations and policies. Meanwhile, various components presented in ‘Entrepreneurial ecosystem' models are still important components in a SE. However, a SE model should be based on an ‘Entrepreneurial ecosystem' model, but it is natural to adjust the roles and relationships between the components. For example, start-ups are more dependent on government support due to lack of resources than other enterprises. Therefore, we need to focus more on the role of a government in a SE than in an entrepreneurial ecosystem.

However, many researches on a SE is focused on universities and supporting institutions (venture capital, incubators) rather than the role of a government. The first research trend is a university-centered SE model. From this point of view, the focus is how to provide innovation to a SE and build an innovation cluster around the role of the university as a source of knowledge and human resource. The second research trend focuses on venture capitals or incubators. It focuses on how venture capitals or incubators can efficiently provide resources such as funding, human resource, and technology to start-ups. On the other hand, the role of a government in a SE is considered as a secondary factor or an exogenous variable. Therefore, in order to fully understand a SE, an in-depth analysis of the role of government, another important component, is needed. In the next chapter, two perspectives on the role of government in a SE will be presented, and then based on this, the desirable role of government will be presented.

3.2. Two perspectives on the role of government in a SE

Bottom up approach

In order to examine the role of government in a SE, it is necessary to first discuss the nature of a SE. An 'Ecosystem' in nature maintains the equilibrium and even if it temporarily deviates from the equilibrium due to external shock, it has resilience to return to the equilibrium again. In addition, it evolves by itself over time (Roundy et al, 2017). One view of the role of government in SE argues that it is similar to that of nature. They claim that an ecosystem maintains its own equilibrium and evolves through 'The survival of fittest' and 'The natural selection' in 'Darwinian Theory'. In other words, many start-ups appear, but most of the uncompetitives eventually will be perished, only the competitives will survive. In addition, start-ups that cannot adapt to changes in the environment will be perished and only start-ups that successfully adapt will be able to survive. Through this process, an ecosystem achieves sustainable development.

This argument can be explained by economics. A. Smith argued in ‘The wealth of Nations’ that if self-interested individuals or economic actors reasonably carry out economic activities for their own benefit, demand and supply are automatically regulated and balanced by the market. Meanwhile, he described this process of equilibrium as 'The invisible hand'. In a SE, formal and informal interrelationships such as culture, rules, norms, and behavioral patterns inherent in an ecosystem can act

as an 'Invisible hand' to self-regulate the ecosystem.

For example, growth of promising start-ups can be accelerated, as valuations of start-ups assessed and funded by venture capital and incubators, and funding is provided based on these valuations. On the other hand, uncompetitive start-ups will be stagnant or perished. In addition, the growth of start-ups will lead to the evolution of the entire ecosystem by facilitating the participation of new actors in profitable sectors. In this way, the 'Invisible hand' of the market maintains the equilibrium of ecosystem and facilitates evolution without government intervention. According to this perspective, government intervention causes distortions in the outcome of free choice by the market, which in turn has a negative impact on a SE.

Colombo et al. (2019) emphasized this self-regulating function of a SE and defined the approach that government intervention should be minimized as 'Bottom-up'. The most famous literature on this approach is Isenberg, who defines an entrepreneurial ecosystem as "*self-sustaining, without an objective that motivates all of the actors*". He argues that an entrepreneurial ecosystem governs itself through the interaction of multiple participants with different interests within the ecosystem. In this case, it is explained that the cost and benefit of stakeholders are adjusted by the 'Invisible hand' of the market, and the ecosystem maintains the equilibrium (Colombo et al. 2019).

Top down approach

The opposite perspective on the nature of a SE emphasizes that it is an 'artificial'

ecosystem that is different from the ecosystem that exists in nature. The natural ecosystem has achieved an equilibrium as a result of evolving through the interaction of the environment with organisms for a long time. In addition, in a natural ecosystem, each organism constituting an ecosystem cannot exert a significant influence to cause a change in an equilibrium.

On the other hand, SE is an artificial ecosystem built through the interaction of Stakeholders in a relatively short period, and the equilibrium is also more unstable and can be changed continuously unlike that of the natural ecosystem. In addition, compared to natural ecosystems, each component has a greater impact on the entire ecosystem, and changes in components can lead to a change in the equilibrium.

In this perspective of recognizing SE differently from the natural ecosystem, it is argued that a government's artificial intervention in a SE is necessary. In other words, the government's intervention can develop SE in a better direction and help restore an equilibrium from external shocks such as environmental changes. This approach to emphasizing a government's active involvement and role in a SE can be defined as 'Top-down' (Colombo et al. 2019).

Stam(2015) regarded the SE as an ‘Open system’, and argued that a government should play the role of a ‘Feeder’ that supplies necessary resources within an ecosystem. This argument implies that a government can design a SE from scratch or change the direction it wants through active intervention of top-down decision-making. In a 'Top-

down' approach, a government prefers to be the leader of the ecosystem and decide the direction of the ecosystem because it has all the necessary information about the ecosystem. In particular, it can be more justified when an ecosystem is under-developed and faces global competition (Colombo et al. 2019).

Sub-conclusion: Bottom-up-Top-down approach

There are different perspectives on the role of a government in a SE. However, considering that a SE achieves an equilibrium and evolution through interactions between participants, it is natural that excessive government intervention needs to be minimized.

First, it is because a government's intervention weakens the competitiveness of a SE by distorting the market mechanism. For example, public funding for start-ups could undermine the function of private venture capital (Isenberg 2011). In addition, if non-market mechanism public funds exceeding an optimal level are supplied to the ecosystem, the evaluation of start-ups by the market may become meaningless, so the competitiveness of the entire ecosystem may be weakened because marginal start-ups with low competitiveness can survive.

Second reason is inefficiency of bureaucracy in the process of government's intervention. According to the Niskanen model, bureaucrats produce more public services than an optimal level, as the larger the budget implies the greater the authority and influence in their positions. Due to these inefficiency of the bureaucracy, a

government's intervention in a SE inevitably exceeds the socially optimal level. Therefore, a government's intervention can be a factor that weakens the competitiveness of a SE rather than facilitating it.

Third, a government cannot create or coordinate an ecosystem. SE appears in different aspects depending on the circumstances or stakeholders. In addition, since the equilibrium of an ecosystem is also a result of the interaction between the participants and the environment, each ecosystem has different features and equilibriums. If, for the government to intervene an ecosystem, all information about the stakeholders in an ecosystem and the consequences of interaction must be predicted, but this is impossible. Therefore, in many cases, intervention of government in a SE is made in a way that mimics the model considered ideal, the 'Benchmark'. However, since there is no silver bullet, a government's efforts to create an ideal SE can adversely affect in a SE.

Fourth, considering the actual case of a SE, the private-led SE showed much higher performance than the government-led SE. Silicon Valley of the U.S. is evaluated as the most successful private-led SE. It is governed by the interaction of various participants such as start-ups, venture capitals, incubators, and universities, and is producing high performance without government intervention. Lucas(1993) explained that in the case of the U.S., the proportion of the government among investments in R&D and start-ups has gradually decreased and the proportion of the private sector has increased, and emphasized that the autonomous business environment by the market mechanism is an important factor for success of American start-ups. On the other hand, success story of government-led SE is still hard to find.

However, a government's intervention is also necessary because there are many cases in which a SE cannot be maintained and developed by itself. First, it is the setting rules for SE. In a natural ecosystem, components such as soil, water, and air must be established in order to interact with each other. The same goes for SE. For stakeholders in SE, such as enterprises, investors, incubators, and universities, to interact together, rules on the relationships and roles of stakeholders are required. In addition, it is necessary to monitor and regulate factors that hinder the efficiency of a SE, such as monopolies and collusions. However, since it is not easy to regulate it within a SE, a government intervention is imperative.

Second, the government's intervention is inevitable in countries with insufficient development of a SE. The development of a SE has a path dependence, so when growth and evolution begin, it continues to progress, but it will remain in a stationary or low-development state unless there are catalysts (Thomas et al. 2013). Therefore, deliberate intervention of government is required in the beginning so that a SE can take-off.

Third, today, borders disappear, and competition between nations and ecosystems takes place, not within a region or within an ecosystem. The decline in the competitiveness of an ecosystem will lead to the decline of the entire country beyond an ecosystem (Peris-Ortiz et al., 2016). Therefore, sustainable growth of the country, the role of a government is required to remove factors that hinder the boost-up of an ecosystem, such as regulations, and actively support what an ecosystem requires.

In the end, only one approach, ‘Bottom-up’ or ‘Top-down’, cannot properly explain the role of a government in a SE. A government intervention of SE should be minimized to ensure that an ecosystem is balanced and evolved by its own capabilities. However, at the same time, government have the responsibility to support SE to be formed and to take-off. Since the government's role in a SE has both sides, the approach also needs to be harmonized with ‘Bottom-up’ and ‘Top-down’. In other words, in principle, the government's intervention in a SE should be minimized, but it should play a more active role in the beginning and undeveloped stages of SE. However, even if such government intervention is necessary, intervention should not be the role of decide as in ‘Old public administration’ perspective. But it should be limited to the role of rule-setting and coordinating. Colombo et al. (2019) defined this harmonized approach as a 'Bottom-up-Top-down approach'.

3.3. Desirable Role of Government in a SE

According to the ‘Bottom-up-Top-down approach’, the role of a government is recognized in the aspect of complementing SE. Since the elements required by the SE constantly change as an ecosystem evolves, the role of a government must also change according to the change of it. In addition, as a SE evolves and develops, self-sustaining and self-governing ability improves. Therefore, in the beginning, a government plays

an active role in a SE, but as it develops, a government must gradually hand over the role to participants of an ecosystem and reduce the intervention (Isenberg, 2011).

The Beginning stage

A government should play a role of 'Rule settler' that sets systems or rules for SE and stakeholders. However, even if the system is established, a SE does not form by itself. This is because the participation of stakeholders who can stimulate a SE is insufficient in the beginning stage. Most of the potential participants are reluctant to participate in a SE because information is insufficient in the beginning and the uncertainty about success is large. Therefore, a government needs to play an active role of supplying the scarce resources to the SE instead of private sectors.

For example, in the beginning, there is insufficient financial resources in a SE. This is because banks have minimum standard for loans such as assets and credit rate, so it is not easy for small start-ups to receive funds through banks. Due to the lack of success stories for start-ups, it is difficult for venture capital, which provides funding for start-ups, to participate in the market. This is because the valuation system for the technologies and ideas of start-ups has not been established, so the market for the supply of funds itself cannot be formed. In this situation, a government should play a role of supplying funds to the SE by directly providing a loan or establishing an investment institution for start-ups.

As another example, in the beginning, interactions between stakeholders in a SE cannot

occur because the network is not formed. There are universities with technology, and start-ups that want technology, but it is difficult to connect between them, due to lack of network, so interaction does not occur. In this situation, a government should play a role in establishing network and connecting these stakeholders so that interactions can ignite.

The Growing stage

Since a government's support policy can result in a SE being dependent on policies and distorting a SE, a government's direct intervention should be phased out and the role should be gradually transferred to private sectors so that it can be operated by itself. However, as SE is still incomplete to evolve or adjust itself, a government must play a supporting role. But, in order to minimize market distortion, even when a government support the SE, they should switch policies to indirect support using market mechanisms, rather than directly participating as a player.

For example, the supply of funds, such as loans to start-ups, should be phased out and transferred to a venture capital. A government should provide funding to these institutions and allow them to allocate funds so that the mechanisms of SE can operate.

In addition, it is necessary to replace the establishment of a network between participants of SE, which the government carried out, with private institutions such as incubators and accelerators. For the evolution and development of SE, a government should remove regulations that hinder the growth of SE and improve the infrastructure

and culture. A government should further expand its role in improving the environment around SE while minimizing direct intervention in the growing stage.

The matured stage

At this stage, a SE is fully functional enough to evolve and regulate itself. Therefore, there is no need for support or intervention for a government to facilitate SE. Rather, government intervention should be minimized because it can have an adverse effect of hindering growth by distorting the ecosystem.

Meanwhile, the need for coordination and supervision of SE is increasing. As a SE evolves, the number of participants and stakeholders increases, and information on each participant becomes insufficient. These lack and asymmetry information can cause moral hazard to members, leading to the collapse of an ecosystem (Hermalin et al. 1991). In order to prevent moral hazard, a government must play the role of resolving information asymmetry through information provision and monitoring moral hazard (Cunningham et al. 2019).

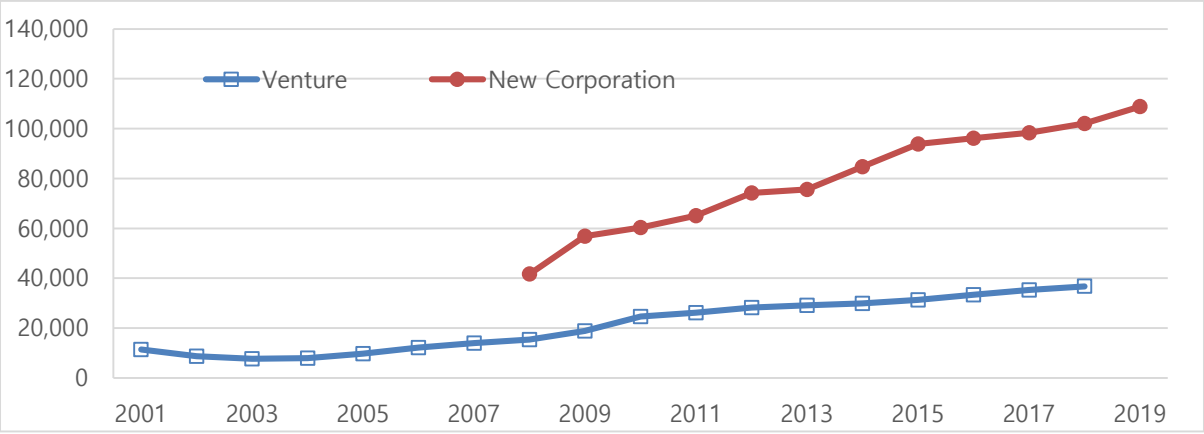
Meanwhile, as a SE develops, the dynamics of SE may diminish due to monopoly and collusion. Therefore, a government should establish a system that monitors and promotes competition so that competition and cooperation are boosted within a SE.

4. Current situation of SE in Korea

4.1. Performance of Start-ups in Korea

Since the 2000s, Korea has achieved quantitative growth of start-ups as start-up activities have increased rapidly. The number of newly established enterprises(start-ups) increased from only 41,782 in 2008 to 108,874 in 2019, an annual average increase of 9.1%, and the number of ventures more than tripled from 11,392 in 2001 to 36,820 in 2018 (Figure 2).

<Figure 2> Number of New Corporations and Ventures in Korea

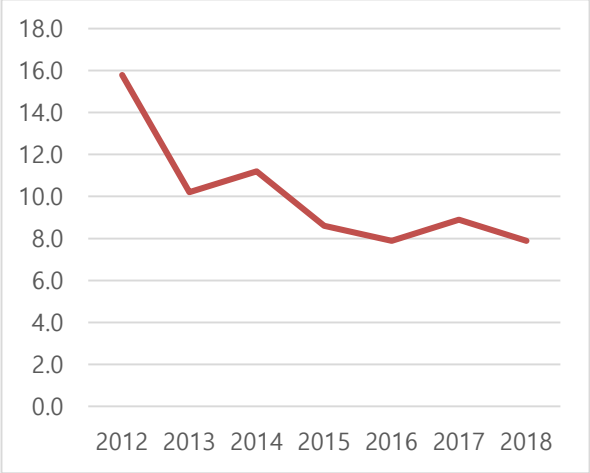


*Source: Ministry of SMEs and Startups,

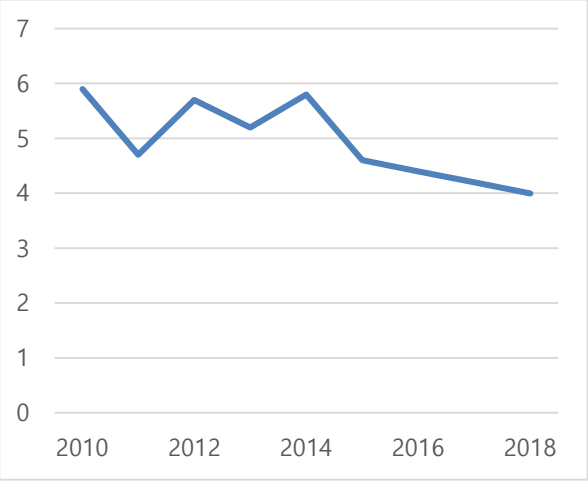
https://www.mss.go.kr/site/smba/foffice/ex/statDB/temaList.do

However, qualitative growth has not kept pace with quantitative growth. The growth rate of revenue and operating gain to revenue, which indicate the business performance of ventures, has been decline. In 2012, the growth rate of revenue of ventures recorded 15.8%, but in 2018 it fell to 7.9% (Figure 3). The ratio of operating gain to revenue also fell from 5.8% in 2014 to 4.0% in 2018 (Figure 4). This means that start-ups and ventures that have entered a SE are less profitable and have lower growth potential than existing ones, hindering the overall growth potential of SE.

<Figure 3> Revenue Growth of Venture Business (%)



<Figure 4> Ratio of operating gain to revenue of Venture Business (%)



*Source: Ministry of SMEs and Startups,

https://www.mss.go.kr/site/smba/foffice/ex/statDB/temaList.do

Another indicator of how healthy and fast developed SE is the number of ‘Unicorn’. ‘Unicorn’ is a term first used by venture investor Aileen Lee in 2013 to refer to a start-up with a value of over $1 billion. In other words, the ‘Unicorn’ is the innovator that is recognized for its value in the global market as it grows rapidly and leads the entire SE. According to CB insights, as of May 2020, the number of ‘Unicorn’ worldwide is 470. Of these, there are only 10 ‘Unicorns’ in Korea, accounting for only 2% of the total. This is a significantly smaller number compared to 225 in US. or 120 in China.

In sum, the number of start-ups in Korea has been increasing rapidly in recent years, but this quantitative growth does not lead to qualitative growth. Since many start-ups lack of potential to grow and innovativeness, the growth of an entire SE is delayed. And also, rapid grow start-ups that lead a SE are insufficient. There are various reasons for the retarded growth of Korean start-ups, but the inefficiency of a SE is one of the important reasons. This is because a SE provides the resources necessary for start-ups to grow and induces innovation to occur continuously. Therefore, in a good SE, the performance of start-ups is also higher (Stam et al, 2016). Representatively, it is a good example that most of today's ‘Unicorns’ are appearing in innovation clusters with well-equipped SE such as Silicon Valley.

4.2. Performance of SE in Korea

Efficiency of SE

Many researches have suggested models to measure the efficiency or competitiveness of SE, but few researches have compared and evaluated it by applying models. The Global Startup Ecosystem Report (GSER) released by the 'Startup Genome' is one of the few researches that evaluates the efficiency of SE by cities. Started in 2011, GSER publishes the rankings of SE in major cities around the world for the purpose of providing objective data for strategic decision-making by start-ups and investors, as well as providing information for identifying and supplementing weaknesses in individual ecosystems. In the evaluation of 54 cities in 2019, Korean cities were not included in the 'The Next 30' which have excellent environment for start-ups. This shows that although Korea's SE is rapidly developing, it is not yet among the global top tier (GSER 2019).

Stages of development of SE

When we divide the development stage of SE into three categories: beginning, growing and matured, the beginning stage means a state in which basic elements of SE are missing. The growing refers to a state in which the basic elements of SE is inefficient, but most of them are organized and are developing rapidly. The matured refers to the stage in which all the elements required by the SE are organized efficiently, creating synergy without external intervention.

In light of these criteria, it can be assessed the SE development stage of the Korea is just passed the beginning and is entering the growing. In the past, the SE in Korea

remained in the beginning where all elements for start-ups, such as funds and networks, were lacking, therefore had no choice but to rely on government support. However, in recent years, elements of SE are rapidly expanding, so, start-ups can acquire necessary resources within the ecosystem.

In terms of funding, Korea's venture investment in 2019 rose 24.9% year-on-year to 427.7 billion KRW, which is 0.22% of GDP, the next highest level after the United States, Israel and China, and the number of angel investors increased from only 25 in 2015 to 198 in 2019.

In terms of networks, the number of accelerators that foster start-ups and connect them with other participants of an ecosystem has rapidly grown from 54 in 2017 to 214 in 2019. As a result, the number of enterprises receiving benefit of venture investment also increased from 1,399 in 2018 to 1,608 in 2019 (Ministry of SMEs and Startups, 2020). After all, as most start-ups in Korea can now acquire resources, such as funding and technology, within the SE, it can be evaluated that the SE in Korea is pass over the beginning where resources are missing.

However, there is still a long way to reach to the matured. In the matured, like Silicon Valley in the U.S, all necessary resources for start-ups can be acquired within the ecosystem easily, and high performance is achieved through interactions with other participants. However, in Korea, the performance of the SE is not good enough. The number of ‘Unicorns’, which is a representative competitiveness of the SE, still has a

big gap with the U.S. and China, moreover the survival rate of start-ups for 5 years, is 28.5%, which is much lower than the average of 41.7% of OECD member countries (Ministry of SMEs and Startups, 2019). This means that the SE in Korea is not efficiently providing the resources and support that start-ups need for growth.

In sum, it can be said that the SE in Korea is still far from the matured. As a result of GSER's 2019 SE assessment, Seoul is not included in the matured stage of 'The Next 30', but it included in 'Challenger SE', a region where the SE is rapidly developing, supports this augment (GSER 2019).

4.3. History of Korea’s SE support policy

There are various opinions on what is the beginning of Korea's SE support policy. In some researches, 1986, when the ‘Support for Small and Medium Enterprise Establishment Act (SME Establishment Act)’ which was the basis for the establishment of venture capital, was regarded as the starting point of Korea's SE support policy (Lee et al., 2017). Ha et al (2013) criticize that it cannot be the starting point of SE support policy in Korea yet. This is because venture capital was institutionalized under the ‘SME Establishment Act’, but not only did not provide an exit market at the time, but there were not enough business mechanisms to institutionalize innovative founders. At the same time, he insists that starting point of SE support policy in Korea is opening of the KOSDAQ market in 1996 and the enactment of the publication of the ‘Act on

Special Measures for The Promotion of Venture Business (Venture Business Act)' in 1997. In sum, the Korean SE support policy began to initialize in the 1980s and 1990s. Since then, Korea's policies to support SE have changed significantly over time. Changes in Korea's SE support policy can be classified into three to five stages depending on research.

Ha et al. (2013) classified Korea's policies to support SE into three stages. The first is the 'Initial stage', from 1997 to 2001, when the system to support SE was established. The second is the 'Adjustment stage', from 2002 to 2004, when the restructuring of SE was proceeded after the collapse of the 'Dot com bubble'. Finally, the third is from 2005 to 2012, when the main SE support policies were introduced, starting with the 'Venture Revitalization Measures' at the end of 2004.

'Korea Institute for Industrial Economics & Trade (KIET)'(2015) also divided Korea's SE support policy into three stages. They set the period from 1986 to 2001 as the 'Policy inception period', from 2002 to 2006 as the 'Coordinating period', and after 2007 as the 'Policy reignition period'. Lee et al. (2017) classified SE support policy into five stages in connection with the change in the role of the Ministry of SMEs. The first period was set from 1986 to 1997, when the 'SME Establishment Act' was enacted, and it was named 'The Early Period'. The second period was from 1998 to 2001, when the venture business boom occurred, and it was named 'The Growth Period'. After the collapse of the venture bubble, from 2002 to 2004, the restructuring of SE support policy was in progress, they set this period as the third period named 'The Adjustment

Period'. The fourth period was set from 2005 to 2006, and it was named as 'The Improvement Period'. They explained that the innovation-friendly SE was established during this period. The last period was named 'The Re-leaping Period' set from 2007 to 2012, when the development of SE re-began with the establishment of a market-friendly environment.

On the other hand, considering that the policy principle of SE has changed according to the nature of the regime, it can be classified by regime. In this article, I will look at the policies to support SE in Korea, classified by regime.

1997~2007, Progressive regime

The Progressive regime (Democratic Party), which was came in 1997, recognized that the Asian financial crisis in 1997 was caused by the economic system centered on large companies. Therefore, many policies for ventures and start-ups was introduced to change the economic system from large companies to innovative SMEs. Since there was not enough infrastructure for SE at this time, the Korean government focused on establishing an institutional environment to create SE.

In 1996, the KOSDAQ market was established so that ventures can easily raise funds. And in 1997, 'Venture Business Act' was enacted, accordingly, government designated enterprises with high potentiality as Ventures. In 1998, tax grant for ventures was also expanded. In addition, a 'Lab Start-up' system was established to promote start-ups of universities, strengthening the connection between universities and start-ups. As a result,

the SE achieved skyrocketed growth, with the number of venture companies surpassing 10,000 in 2001.

However, due to the focus on quantitative growth, marginal ventures and start-ups also increased, and as the 'Dot com bubble' collapsed in the early 2000s, the SE also struggled. In response of the crisis, the Korean government shifts its policy toward inducing the qualitative growth of SE. In 2002, in order to reinforce the competitiveness of venture, technical and business performance evaluation was strengthened when designating ventures. In 2005, the government set up a 'Fund of Funds', which still plays the important role in funding Korean ventures and start-ups and expanded its scale to 1 trillion KRW by the end of 2005.

2008~2016, Conservative regime

Since the inauguration of President Lee Myung-bak in 2008, the policy to support SE has not been progressed. There was no major change in the existing policies to support SE, and no new major policies was introduced. President Lee Myung-bak set 'Business Friendly' as the policy under the neo-liberal principle and attempted to minimize regulations on large enterprises. As a result, the business policies focused on large enterprises rather than ventures and start-ups (Kim, 2011).

The other reason that the venture and start-up support policy was treated as relatively less important is that in order to overcome the global financial crisis, the regime have no choice but to make a change its policy direction to support large companies.

However, after the inauguration of president Park Geun-hye in 2013, the ‘Creative economy’ was set as the policy principle, SE support policy has strengthened again as it recognized that start-ups were a key tool for the ‘Creative economy’. In 2013, the ‘Five-Year University Start-up Plan’ was announced by setting facilitating start-ups as the goal of the university. In 2014, 19 ‘Creative Economy Innovation Center (CEIC)’ were established in 19 regions, each serving as a start-up hub. The CEIC is an institution that provides all the services necessary for start-ups such as consulting, mentoring, commercialization, sales, technical support, and investment. In addition, Korean government let large companies voluntarily participated in the CEIC in order to promote the connection between large companies and start-ups,

2017~, Progressive regime

President Moon Jae-in, who took office in 2017, has further strengthened support for the SE while maintaining the major policies of SE support. It is because start-ups were an important tool in resolving youth unemployment, which hit the highest level ever. In addition, SE was a key tool of linking all three pillars of the Moon Jae-in administration's economic policy: income-led growth, innovative growth, and fair economy. It’s because start-ups induce growth through resolving the imbalance between large companies and SMEs, increasing national income through job creation, and enhancing productivity.

In these policy principles, they announced 'Innovative Start-ups Promotion Measures' in 2017, which include foundation of 'Innovation Adventure Fund' volume of 10 trillion KRW to accelerate the flow of funds into SE, expansion of income deductions for venture and angel investment, and government investment for large companies related ventures.

4.4. Evaluation of SE support policy in Korea: ‘Top-down’ approach

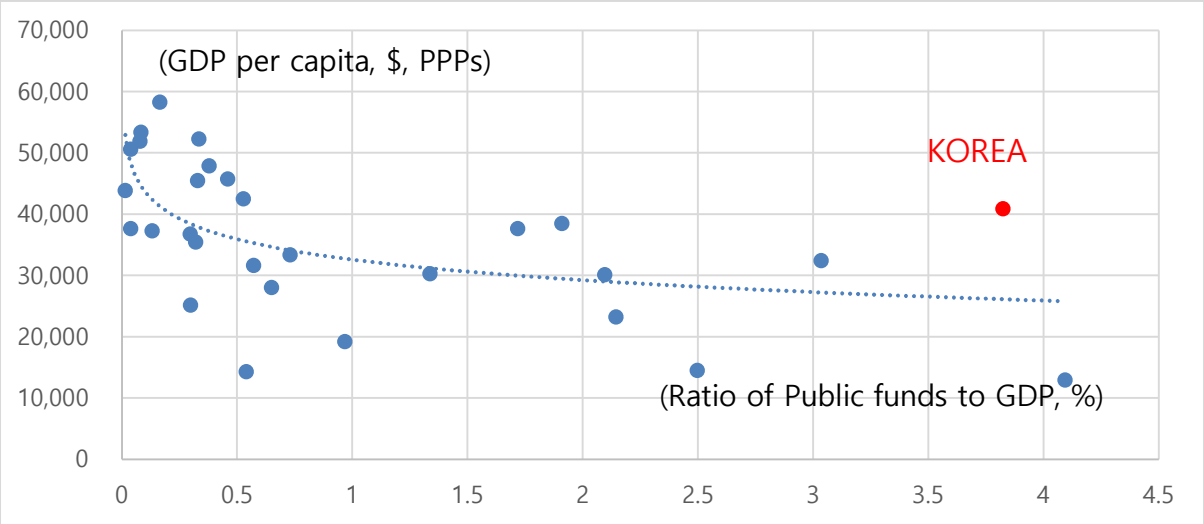
Initially, the Korean government's policies to support SE relied on a ‘Top-down’ approach. This is because the infrastructure of SE was insufficient, so they had no choice but to play a role of providing resources and establishing a system as a direct player. Since 2008, the principle of the Korean government's support policy for SE aims to shift toward minimizing direct government intervention and converting to indirect support.

The ‘Innovation Plan for Start-ups Development Policy for Enhancing Global Market Competitiveness’, announced in 2016, presents this principle shift. In this plan, six innovation principles for policy of start-ups presented as follow, 1) establishment of strategy, 2) focus on performance, 3) private (market) initiative, 4) linkage between policies, 5) focus on SE, 6) pursuit of efficiency. Through this plan, they have attempted

to transform the existing government-led SE into a sustainable structure led by SE. However, despite these plans, the Korean government's policies to support SE are evaluated to have not changed significantly in the ‘Top-down’ approach.

The following policies show that the government-centered SE policy continues. 1) In the ‘Five-Year University Startup Plan’ announced in 2013, the indicators related to start-ups were reflected in the assessment of university. 2) A large company was designated to participate in the CEIC established in 2014. In addition, the policy to raise a 10 trillion KRW ‘Innovation adventure fund’ announced in 2017 shows that the government-led funding policy is still dominating. Indeed, the amount of public funding for SMEs compared to GDP in Korea is very high compared to other OECD member countries. Comparing the ratio of GDP per capita and public funds to GDP of OECD member countries shows an inverse relationship, so if the GDP per capita increases, the ratio of public funds to GDP will decrease (Figure 5). However, in the case of Korea, the ratio of public funds to GDP in 2018 is 3.8%, which is far from the trend. This suggests that Korea's SE is excessively dependent on government funding compared to its development stage.

<Figure 5> Comparison of GDP per capita and the ratio of public funds to GDP



*Source: Reorganized based on data from Financing SMEs and Entrepreneurs 2020 AN OECD SCOREBOARD

5. Problems of Korea's SE Support Policy

There are many researches analyzing the problems of the Korean SE. However, most of the researches were conducted by setting a good SE such as 'Silicon Valley' as a role model and analyzing the weaknesses compared to the Korea's SE. Then, they suggest the direction of SE support policy based on these results. In other words, the research is conducted on the premise that the different factors from 'Silicon Valley' is problems of SE.

However, this premise is not correct in that the equilibrium or characteristic of SE is determined by the interaction of participants, so it is bound to differ from each country or region. Therefore, factors that promote the development of SE are bound to be different. In other words, because the SE is uniquely formed according to interactions, the same results cannot be achieved by replicating one SE to another (Isenberg, 2014). As a result, the problems of a country's SE cannot be properly evaluated by analyzing the method of comparing it with the role model of SE. A SE support policy can be properly understood only in the context of the relationship between the situation in which each ecosystem is faced and the government policy.

As presented above, the desirable role of a government in a SE varies with each stage of the development. In other words, in the beginning, a government must play an active role, such as establishing an institution, but as SE develops, a government should

minimize direct intervention and switch to functions such as supervision so that a SE evolve on its own. Support for SE also needs to be transformed to an indirect method using mechanisms within the ecosystem rather than direct support.

In the case of Korea, the SE has passed the beginning stage and is entering the growing stage. However, the support policies for the SE in Korea still has not depart from a ‘Top-down’ approach based on direct intervention. This discrepancy between the development stage of SE and support policies is hindering the development of SE in Korea. In this article, I will analyze problems of Korea's SE Support Policy by the perspective of 'Bottom-up-Top-down' approach, dividing problems caused by a government not departing from ‘Top-down’ approach and not playing a sufficient role in the aspect of 'Bottom-up'.

5.1. Problems in aspect of ‘Top down’ approach

Constraints on development of SE

Excessive intervention and support hinder the development of SE. The government financial support for Korea's SE have expanded from 61.58 billion KRW in 2017 to 145.17 billion KRW in 2020, a 2.5-fold increase in just three years (MOSS, 2020). In addition, the scale of ‘Fund of funds’ to support ventures and start-ups is continuously expanding as new policy measures are added. Not only the scale of support, but also the

beneficiary and scope are expanding. In the past, SE support policies were focused on supporting the commercializing the ideas of start-ups. However, support targets are expanded to all members of SE such as accelerators, universities, and venture capital now. In addition, it has been expanded to not only commercialization, but also all stages for start-up, such as R&D, training, equipment support, and consulting.

This expansion of direct government intervention inevitably weakens the competitiveness of SE. First, start-ups prefer to obtain necessary resources easily through the public institutions not acquiring them within an ecosystem. This leads to the disconnection of the start-ups and an ecosystem, making them continue to depend on the government, and deteriorating the competitiveness of start-ups in the long run. Second, excessive intervention by the government reduces the roles and competitiveness of accelerators/incubators, universities, and venture capitals.

In fact, in Korea, venture capital has low profitability and is mostly small. This is because start-ups/ventures are relying on government support rather than venture capital, and venture capitals also tend to rely on government funds rather than own investment. In case of accelerators/incubators, numerous government-led institutions such as the CEIC, regional start-up hubs, and start-up support centers have been established. These institutions are causing the side effects of crowding out private accelerators/incubators. This is because, as the number of government-led start-up support institutions increases, the space in which the private sector operates cannot but decreasing. In addition, as the private and the public sector compete for limited resources, the private

accelerator/incubator inevitably cannot grow enough to achieve an economy of scale. In fact, in Korea, even though the number of accelerators/incubators has increased significantly, most of them remaining small and in inefficient.

Constraints on development of Start-ups

Excessive support for start-ups restrains development of start-ups rather than grows. Various researches have been conducted on the relationship between government financial support and business activities. While Gonzalez and Duguet argued that excessive government support does not hinder business activities, Busom argued that government support crowds out activities of some business (Park et al. 2018).

In Korea, Park et al. (2018) conducted an empirical study on start-ups less than 5 years to analyze the effect of government financial support on the intention of start-ups and ventures to expand their business. As a result, they concluded that the government financial support reduced the incentives for the growth of start-ups rather than enhanced.

The reason that excessive government support restricts the growth of start-ups is as follows. First, most government support for start-ups are tapered or stopped as the start-ups grows. Therefore, some start-ups that rely heavily on government support try to maintain the status quo so that government support is not tapered or stopped. This phenomenon is defined as ‘Peter Pan syndrome’. In particular, this phenomenon may occur frequently in Korea, because government support is relatively generous.

Second, start-ups should be evaluated in the market according to their innovativeness and productivity, and the process of growth and entry-exit should take place naturally by the 'Invisible hand'. However, government support hinders the role of this ‘Invisible hand’ in an ecosystem and let low-productivity start-ups survive as a ‘Zombie’. In addition, due to the nature of government support, which provides more support to marginal enterprises with low productivity takes all the benefits rather than those with high productivity. Therefore, innovative start-ups are excluded from the government support and compete with the low productivities in an unfavorable situation, resulting high productivities makes stagnate.

Inefficiency of decision-making process in government policy

Since government's support policies are inefficient and discontinuous, it inevitably fails to achieve the original aim of the growth of start-ups and SE. Korea's SE support policy has served as a means for other goals than the growth of the start-ups and SE. For example, it was established as a means for other purposes, such as fostering a ‘Creative economy’ in the Park Geun-hye administration, and creating youth jobs in the Moon Jae-in administration. However, since these policy principles do not always pursue the same direction as facilitating a SE policy, they often hinder rather than facilitate. For example, in a SE support policy aiming creation of youth jobs, it is more important to increase the number of start-ups rather than to facilitate them. Therefore, policy priority is given to ensuring that start-ups do not fail even if they are inefficient and incompetent.

Another inefficiency of government policy decision-making is that policies tends to change according to the regime or trend rather than being consistent over the long term. This makes it difficult for start-ups to make plans from a long-term perspective. In reality, the phenomenon of intensive support for the popular fields has been occurred repeatedly in Korea. During the period when the concepts of ‘Alpha-go’ and ‘4th Industrial Revolution’ were dominant, government support policies are concentrated on these fields, and later it changed to other fields such as, electric and hydrogen vehicles. In recent years, as the concept of social economy has become a major policy principle, support for start-ups in the fields of social enterprises such as social cooperatives and social ventures is booming.

Inefficient target setting when supporting start-ups is also a problem. Most of the policy support is focused on short-term performance or the field where performance can be easily measured rather than long-term growth or innovation (Jung et al. 1999). This make start-ups to choose businesses that can be easily supported by the government rather than innovative and challenging. In addition, in the business process, the government's performance assessment and supervision make start-ups focused on easy areas. This hinders innovation and impedes the growth of start-ups in the long run.

5.2. Problems in aspect of ‘Bottom-up’ approach

A SE is affected by the economic, social, cultural, and institutional environment

related to the ecosystem. And it also develops through the interactions between them. If the economic, social, cultural, and institutional environment are not suitable for start-ups, a SE cannot develop. As a SE transitions from the 'Beginning' to the 'Growing' and 'Matured' stage, a government should focus on improving the environment of SE rather than direct intervention. However, the Korean government did not transform its policies to a bottom-up approach that improves the environment while focusing on direct intervention centered on top-down even for the development of SE. This eventually led to a delay in the growth of SE and start-ups. In this chapter, I will present the absence of the government's role in the improvement of economic, social, cultural, and institutional environment.

Economic structure environment: Large companies centered on structure

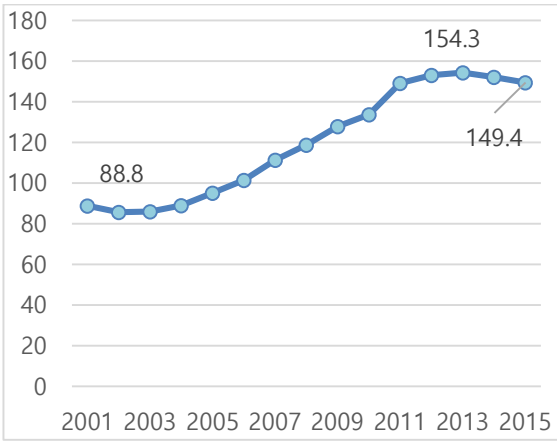
Winter (1984) divided the types of entrepreneurial environment into large-company-led and venture-led and suggested these two types as alternatives for economic development through technological innovation. In the case of large company-led, large companies lead technology innovation. Since the entry barrier is high, the inflow and outflow of resources to the SE are not easy. On the other hand, the venture-led type creates a suitable environment for start-ups as market access for start-ups is not difficult.

Since 1970, the growth rate of Korea has been rapid through an economic structure centered on chaebol or large companies. The economic structure began by concentrating limited capital on chaebols to increase efficiency, and to achieve economies of scale through capital accumulation. And, in fact, this made Korea to 'Catching-up' advanced

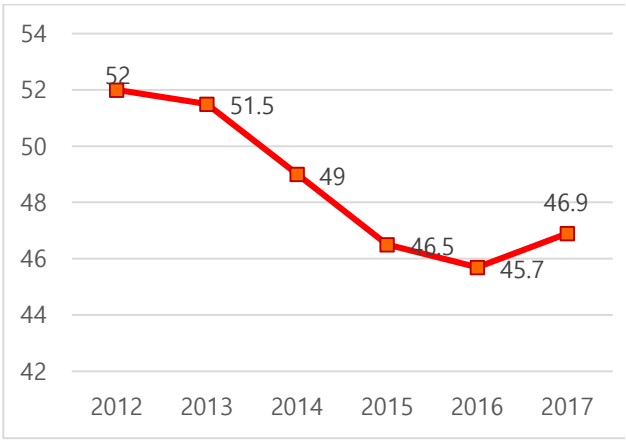
countries at once through compressed growth. However, even today, when Korea has entered advanced country group with the world's tenth largest economy, the economic structure centered on large companies has not changed but is rather solidifying.

The proportion of the top 30 chaebols in the economy (total assets in the 30s/GDP) increased from 55.3% in 1987 to 91.83 in 1998 and fell to 59.29 in 2002 after experiencing the economic crisis in 1997. However, as the chaebols that survived the economic crisis grew rapidly, so, the proportion increased to 104.5% in 2012 and exceeded 100% at 100.31% in 2016 (Wu, 2019). In the case of 'Conglomerates' designated by the Fair Trade Commission, the ratio of asset size to GDP increased from 88.8% in 2001 to 149.4% in 2015 (Figure 6), the proportion of sales decreased slightly from 52.0% in 2012 to 46.9% in 2017, but it is still close to half, showing that the concentration of economic power to large companies has continued since the 2000s.

<Figure 6> Proportion of economic power of Conglomerates (Total assets/ GDP, %)



<Figure 7> Proportion of sales of Conglomerates (%)



*Source: Fair Trade Commission, Market Structure Survey (26.12.2019)

http://www.ftc.go.kr/

Oh (2002) pointed out that the entrepreneurial ecosystem in Korea is led by large companies, and this slows the development of SE and start-ups. He argued that the following conditions are necessary for the development of SE. 1) many entrepreneurs and capitalists, 2) Entry and exist is easy, 3) information sharing between participants is easy, and 4) a completely competitive relationship between companies. This is because only in such an environment can efficiently allocate resources and maximize the value of start-ups.

In Korea, start-ups cannot access the market due to the monopolistic market structure centered on large companies, as well as compete in terms of cost with large companies that have already achieved economies of scale. In addition, fair competition is impossible because there is a big gap in the funds, human resources, and technology between large companies and start-ups. It is difficult for start-ups to raise funds through banks because banks prefer stable large companies over start-ups. Since human resources also prefer large companies to start-ups, there are fewer opportunities for start-ups to grow in a large-company-centered structure. In addition, profitable ideas and technologies of start-ups are bought by large companies in the pre-mature status, and in worst cases, large companies are imitated their ideas, so, start-ups lose the opportunity to grow. In sum, the economic structure centered on large corporations has had a great influence on the failure of Korean start-ups and a SE to grow.

Social structure environment: Poor social safety net

The social safety net, an institution to protect the people from social risks, is also applied to the SE. The safety net of SE is an institutional device that can guarantee minimum standard of living against the social risk that the entrepreneurs can lose everything and fall into the poor condition in the event of failure.

The social safety net of SE can be defined in terms of perspective. The first one is a narrowly defined perspective, limited to bankruptcy exemption regulations (Lee 2015). This means that a generous bankruptcy exemption regulation should be in place to ensure minimum standard of living so that the entrepreneurs can survive. Second, it is a perspective that broadly defines not only bankruptcy exemption regulations, but also the entire social welfare system, such as medical care, housing, and education. In this article, we focus on the broader perspective. In order for the social safety net to act positively on start-ups, it is necessary to reduce the burden on failure by ensuring minimum standard of living. And, since the minimum standard of living should enable daily life such as medical care, housing, and education, generous bankruptcy exemption regulation alone is insufficient to reduce the burden on failure.

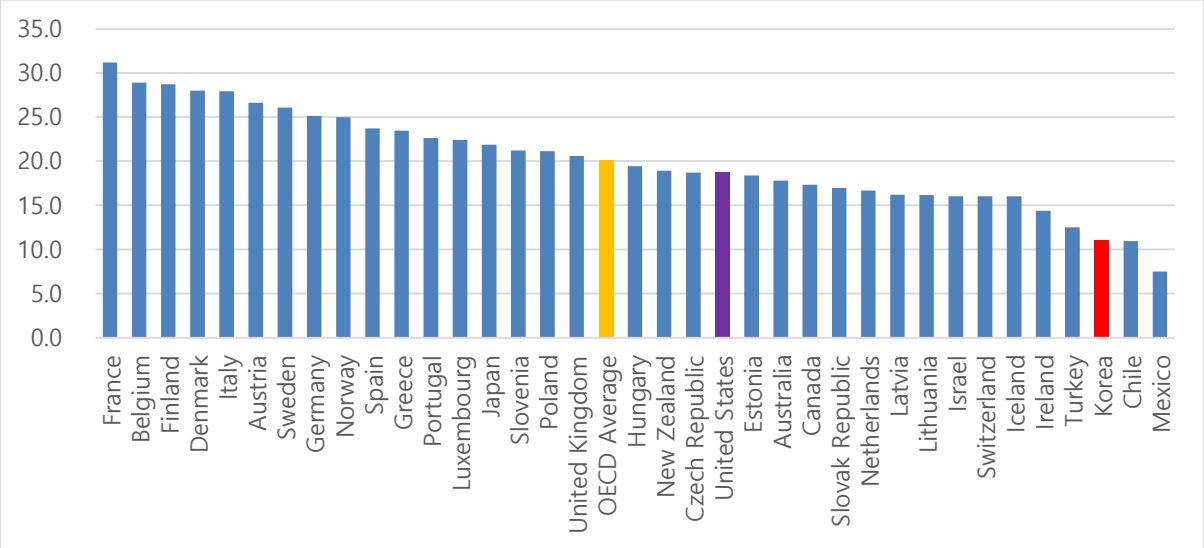
Hessels et al. (2008) also supports this argument by concluding that the social safety net promotes the development of the SE by enhancing entrepreneurship for entrepreneurs through the 2005 GEM results.

In Korea, bankruptcy exemption regulations, which are the most basic safety nets of

the SE, are relatively strict. The property exempted in case of bankruptcy is narrow that it does not even cover the minimum cost of living, so it is not sufficient to serve as a social safety net. Debt adjustment and debt relief to minimize the damages of the entrepreneur due to bankruptcy are also not frequent (Lee 2015).

The social welfare system, which is the safety net of the SE in a broader aspect, is also insufficient. The introduction and expansion of the welfare system was delayed as Korea focused on economic growth rather than welfare during the period of rapid growth. This legacy has affected until recently. The proportion of social welfare expenditure to GDP in Korea was 11.1% in 2018, a very low level compared to the average of major OECD countries as well as other countries (Figure 7). This lack of safety net is hindering the growth of SE and start-ups in Korea because it can lead to individuals to bankrupt when a start-up fails, making it difficult to recover or retry.

<Figure 7> Social expenditure percentage of GDP



*Source: OECD Stat. Social Expenditure Database

Cultural structure environment: Stigma for Start-ups and 'Hakbol' preference

The word 'Stigma' derives from the ancient Greek word meaning signs made by injuring or burning a person's body with a knife to denote an abnormal or low moral position. In modern times, the concept of social stigma was first used by Goffman (2009), who defined social stigma as spoiled social identity. He emphasizes that stigma is a result of social behavior and context rather than an individual's fault or character.

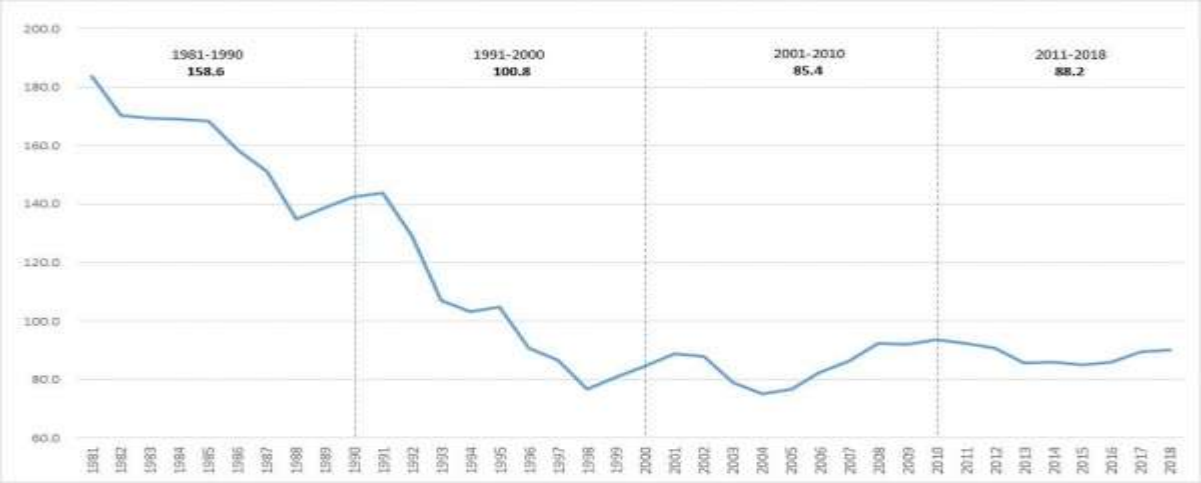
When a social stigma is formed, labeling, stereotyping, and structural discrimination are applied to the target individual or group. As a result, the probability of social failure is higher, and the stigma is reinforced (Yang et al. 2007).

This social stigma is also applied to SE. If failed cases are accumulated rather than successful start-ups, a stigma for start-ups in society is formed. This stigma instills negative perceptions about start-ups, and weakens the competitiveness of start-ups, as it made people hinder to challenge to new start-ups, banks be reluctant to lend to start-ups, and excellent talents avoid start-ups. As a result, it forms a vicious cycle of failure (Simmons et al. 2014). In fact, many researches on the relationship between start-up stigma and entrepreneurship have suggested that stigma has a negative relationship that lowers the activity of starting a business (Yoon 2012).

In Korea, during the period of rapid growth, many start-ups with entrepreneurial spirits continued to appear. Many of them failed, but some have achieved great success and have grown into large companies. It maintained the dynamics of the SE and entire economy. However, according to the Entrepreneurship Index, which was calculated by

synthesizing 14 index, such as corporate favorability and competition rate for public officials, recently announced by 'The Federation of Korean Industries', it fell sharply from 183.6 in 1981 to 90.1 in 2018 (Figure 8). Since the 2000s, the entrepreneurial spirit has retreated significantly, and this is largely due to the social stigma of start-ups.

<Figure 8> Entrepreneurship Index in Korea



*Source: The Federation of Korean Industries, http://ecoedu.fki.or.kr/issue/m_ecoedu.aspx

These negative perceptions about start-ups in Korea started from the economic crisis in the late 1990s. During the economic crisis, many companies as well as start-ups went bankrupt, and as people witnessed entrepreneurs' miserable situation, a negative perception of start-ups began. After that, in the early 2000s, after the collapse of the venture bubble, when large-scale of serial bankruptcies of start-ups and ventures represented by 'Dot-com companies' began, negative perceptions about start-ups

became enhanced. Even after that, success stories of start-ups were extremely exceptional, and there were more cases of failure than success. As a result, the negative perception on start-ups became more entrenched and it turn into a stigma. In fact, according to the research of Lee (2015), the fear and negative perception of failure when starting a business in Korea was 44.5% in 2013, which was higher than the US (35.0%), Switzerland (35.5%), and the UK (39.8%). Kwak et al. (2018) also argued that the negative stigma of start-ups is a factor that hinders the growth of SE in Korea, as pointing out that 92.2% of the respondents answered, “If you start a business and fail, it is likely to lead to personal credit delinquency”.

Another cultural structure that hinders the development of Korea's SE is a social structure that values, ‘Hakbol’ which means academic background. ‘Hakbol’ can be defined as 'a group or network formed by same high school or university'. However, in Korea, these groups or networks are perceived negatively as they combine with the exclusive tendency toward other groups and the preference toward their own group.

There are various researches on ‘Hakbol’ in Korea. Among them, Kim (2004) pointed out that the proportion of graduates from three prestigious universities exceeded 50% among high-ranking public officials of the 3rd level or higher and argued that Korea is a society centered on ‘Hakbol’, which is an important factor for success. Lee (2005) argued that there is an important relationship between ‘Hakbol’ and success in Korean society, based on the fact that 89.7% of the respondents who answered that treatment varies depending on the school level as a result of a survey on the perception of ‘Hakbol’. This ‘Hakbol’ structure makes creative talents only strive to acquire ‘Hakbol’ regardless

of their aptitude or talent. After acquiring a good ‘Hakbol’, they do not try to take the risks such as starting a business because it guarantees a success by finding a stable job at a large companies or public institution without any effort. Eventually, it hinders the development of SE by preventing the influx of creative talents.

Institutional structure environment: Excessive regulation and lack of market supervision

The governing system is the most essential and basic element in the formation of SE, so it should be set first from the beginning. A good system does not restrict the activities of the participants and promotes the participants' abilities to be maximized. When such a system is in place, A SE can develop through its own discipline without government intervention. However, in Korea, the institutional foundation for ensuring the autonomy of the SE is insufficient. A typical example is excessive regulation and lack of market supervision on a SE.

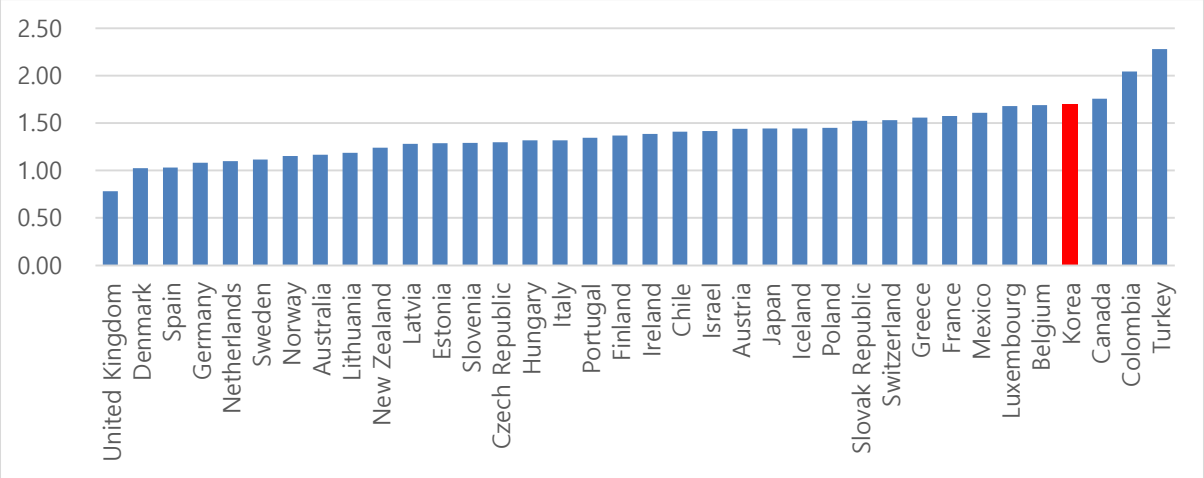
Usually regulation is revealed in a form of government intervention in the market and restricting the activities of companies or individuals in order to realize a desirable economic and social order (Choi, 1992). And regulations reduce the uncertainty arising from the decision-making of individuals and the interactions between stakeholders and serve as a foundation for the various incentives because it distinguishes between what is prohibited and what is allowed. However, despite these positive effects, excessive and rigid regulations limit the activity of individuals. Indeed, many previous researches point out that excessive regulation can hinder the growth of SE.

Kim et al. (2016) argued that, as a result of an empirical analysis of the effect of regulation on technological innovation in the manufacturing sector, the higher the level of regulation, the lower the technological innovation activities and performance of the companies. Blind (2012) analyzed the effects of regulation on innovation in 21 OECD countries. He set the dependent variable representing the level of innovation as the number of patents and analyzed the influence of various regulations on the number of patents. As a result, he concluded that competitive and environmental regulations had a negative impact on innovation.

There are two ways in which regulation affects SE. The first way is the regulation on the start-up itself, such as cost and time required for starting a business, and administrative procedures. World Bank announces the degree of these regulations related to start a business through the ‘Doing Business Index’ every year. Korea ranked 60th in 2010 but rose to 11th in 2019. From this, we can see that regulations related to start a business, which negatively affect start-ups, have been greatly improved. The second way is market entry regulation, which inhibits market formation by prohibiting or restricting the entry of specific technologies or businesses. Entry restrictions not only limit the creativity and freedom of start-ups for new technological innovations, but also reduce the possibility of technological innovations that can occur in conjunction with. In addition, in order to amend or abolish a regulation, it takes a lot of time to reach an agreement between stakeholders. In this process, 'Regulatory delay' occurs, so the regulation does not keep up with the changes in the economic and social environment, eventually the growth of start-ups is inevitably slowed.

In Korea, there are few regulations related to start a business, but on the contrary, entry regulations are relatively strong. According to the Product Market Regulation released by the OECD, Korea ranked in 2018 ranked 33rd out of 36 OECD member countries (Figure 9). This figure is much higher than the OECD average or major countries even considering the size of the economy.

<Figure 9> Product Market Regulation index (2018)



*Source: stats.oecd.org, Product Market Regulation 2018

A representative example of such entry regulations hindering the growth of start-ups is ‘Tada’, which was established to provide a ride-sharing service similar to ‘Uber’, but it recently shut down. In Korea, private hired transportation services cannot be provided except for taxis. However, ‘Tada’ started a ride-sharing service similar to Uber using a loophole in laws - when renting a car with 11 passengers or more, it is allowed to provide driving services. However, in March 2020, a law banning the ‘Tada’ service was passed due to the collective backlash of taxi drivers who feared the infringement

of their vested interests. This case clearly shows how strong Korea's entry regulations and vested rights protection are, and how difficult it is for start-ups to grow in this situation.

Another important factor that enables a SE to grow without government intervention is the government's supervision. This is because even if the system of SE is well-organized, if supervision is insufficient, the ‘Invisible hand’ will inevitably not operate. The feature of SE in Korea is hierarchical division of manufacture relationship. In other words, because start-ups depend on large companies for resources and sales, they are bound to be in a disadvantageous position in relation to large companies. As a result, unfair transactions such as the unreasonable reduction of the prices using their position, or the hijacking of technology occurs frequently (Yang 2017).

However, a government's supervision and corrective measures for such unfair transaction are insufficient. This is because the punishment against unfair transaction is not strong and the actual punishment rate is not high enough. The ratio of the penalty against gains through transactions behaviors in Korea is only 9%. This is very low compared to 57% of the U.S. and 26% of the European Union. In addition, out of the 2,977 cases of fair-trade violations in 2019, only 233 cases, or 7.8% of the total, were accused or surcharged.

6. Policies alternatives

6.1. Overall

For the development of SE in Korea, a policy change is necessary. The Korean government has endeavored to catch-up SEs of advanced countries by the measures of direct intervention. However, as long as Korea's SE has passed by the beginning stage and has already entered the growing stage, fostering through direct intervention cannot be an effective policy anymore. Rather, excessive intervention needs to be minimized because it can lower the competitiveness of SE.

So, the Korean government's support policy for the growth of SE should be promoted in the following two directions. First, the policy should be changed to support SE rather than direct support for individual start-ups. Government should enable start-ups to grow without government support through the growth of support institutions, which have left behind compare to start-ups. In addition, even when supporting start-ups, it is necessary to be empowered to the SE through indirect support using mechanisms within SE. Second, Government should actively promote the improvement of the environment. A SE may be less important than the government support in the beginning stages, but a healthy environment is an essential element for the SE to continue to grow. However, since the environment of SE is related to economic and social structure, it cannot be changed by the efforts of each participant of SE. So, the government's active improvement efforts are needed.

6.2. Top-down: Policy shift to support SE

Increasing support for SE

The budget for start-up support in Korea is composed mainly of direct support for start-ups, accounting for more than 90% of commercialization, R&D, and facility support. However, the support system centered on start-ups should be shifted to support for SE.

First, the tax benefits for investment in start-ups should be enhanced so that the role of investors who supply funds to the SE can be expanded. It can contribute to promoting investment by increasing the profitability of the investment. Second, government should expand incentives and budget support for universities and research institutions that supply technology and ideas to the SE. In addition, support for start-ups of universities divided by field should be unified in order to increase efficiency. Now, MoE (Ministry of Education) is currently in charge of supporting start-ups for universities but, that of research institutes is regulated by the MSIT (Ministry of Science and ICT). Third, tax benefits should be provided to workers who are employed in start-ups so that excellent talents can flow into the SE.

Using the SE mechanism

Even if the policy focus is shifted from start-ups to the SE, the need for support for

start-ups is still important. However, the support method for start-ups also should be changed to a direction that utilizes mechanisms within a SE, rather than a government's direct intervention. In other words, which start-ups should be selected and supported must be determined by the SE, and the government must only provide funds to investment organizations in the SE. This is because when the government directly selects start-ups to be supported, it is difficult to select promising start-ups due to the inefficiency of the bureaucracy. Moreover, it can hinder the growth of the SE by reducing the role of SE.

The 'Tech Incubator Program for Startup (TIPS)' is a representative example of supporting start-ups using a SE mechanism. TIPS is a mechanism in which the government invests the same amount for start-ups invested by incubators and accelerators. In this system, the government does not intervene in the selection and support of start-ups at all, and only provides funds according to the decision of the SE itself. The amount of support for start-ups using the TIPS was 54.3 billion KRW in 2020, which is only 3.7% of the total start-up support budget. However, this program should be further expanded.

Currently, a high portion of venture capitals that provide funding within the SE rely largely on public ‘Fund of funds’. However, the funds invested by the ‘Fund of funds’ are subject to control over management, investment decision procedure and performance. According to a research by Kang (2019), ‘Fund of funds’ not only provide financial resource to venture capital, but also make venture capital change their behavior. As a result of the research, the rate of return was high, and behavior of risk aversion

was observed. This conservative investment behavior can be positive in the short term, but it is negative for start-ups where risk-taking and challenge are imperative. As a result, in the long run, it hinders the growth of the entire SE. Therefore, government should enhance the autonomy of SE by easing the control and monitoring when investing by the ‘Fund of funds’. In addition, incentives should be expanded so that private funds can be raised by SE itself, rather than relying on the public fund.

Setting long-term vision

The biggest problem with the government's top-down support for SE is that it sets short-term and quantitative goals due to restrictions or audit. In Korea, most of start-up policies also set short-term and quantitative goals such as the number of start-ups. This short-term and quantitative goals can rather hinder achieving more important goal, growth of SE. Therefore, rather than setting short-term and quantitative goals, the government should play a role of setting a long-term vision and sharing it with the participants of SE. In addition, the audit of the government's start-up support policies by the ‘National Assembly’ or the ‘Board of Audit and Inspection’ should be limited to obvious errors or corruption in the process and should avoid short-term performance-oriented assessment.

6.3. Bottom up: Improving structural environment of SE

Reforming economic structure

The economic structure in Korea should be shifted from large companies centric to start-ups/ventures centric, in order for the Korean SE to become self-sustaining. Reform of the economic structure centered on start-ups/ventures should be promoted in three directions.

The first one is to curb the excessive expansion of large companies. There may be controversy over whether it is desirable to restrict the activities of large companies as a result of competition in the market. However, in most countries today, it is positive to regulate large companies in order to prevent the evils of monopoly and concentrating economic power. In Korea, the growth of start-ups/ventures is hindered due to the abuse of market dominance and the excessive expansion of large companies, so, it is necessary to regulate them to foster start-ups/ventures.

The second is to introduce ‘Affirmative Action (AA)’ for start-ups and ventures. 'AA' is a policy first used by the Kennedy administration in the U.S. in 1961, and originally refers to a policy that gives preferential treatment to a specific race or class in order to alleviate conflicts and gaps between races and classes. 'AA' can be applied in the same way in economic policy. In the current economic structure, fair competition cannot be expected with mere ‘equal opportunity’, since large companies dominate the whole economy and all economic and social practices are centered around large companies.

Therefore, for fair competition, start-ups/ventures should be given more preferential treatment through measures such as procurement and funding by the government.

Third, the relationship between large companies and start-ups/ventures/SMEs should be transformed into a win-win horizontal relationship through cooperation rather than a vertical relationship. To this end, government should introduce a 'Profit sharing system' that shares the profits of large companies with start-ups/ventures/SMEs included in the value chain.

Expanding start-up safety net

It is necessary to minimize the risks and fears of start-ups by ensuring a minimum living standard and enabling re-challenge. First of all, in order to minimize the damage to entrepreneurs in the event of bankrupt, the bankruptcy exemption should be more generous, and debt adjustments through third party institutions should be activated.

Second, unemployment benefits or public assistance should be provided for a certain period of time. The impact of unemployment can be minimized through unemployment benefits when workers lose their jobs. On the other hand, it is difficult for entrepreneurs to make a living because they cannot receive unemployment benefits if they fail.

Lastly, the welfare system across society, such as medical care, education, and housing, should be improved to the OECD average level so that all people can be guaranteed a minimum living standard. This enhancement of the social safety net builds an environment in which entrepreneurs can start a business without fear of failure. So, in

the long run it can induce the development of SE.

building a 'Start-up friendly' culture

The most important thing to build a 'start-ups friendly' culture is to address negative social stigma against start-ups. This is because in this situation where there is a negative stigma on a start-up, it is not possible to expect the flow of excellent talent and funds into the SE. First of all, the government should alleviate the negative perceptions of the people about start-ups by creating various successful cases and actively publicizing these stories. In addition, regulations that stigmatize failed entrepreneurs should also be revised so that the failed entrepreneurs can re-challenge and success. For example, when selecting a beneficiary of fund, not excluding the failed entrepreneurs, but giving preferential treatment can be a way to remove this stigma. It also can be a good idea to include a business or start-up class at school so that the people can positively recognize start-ups from childhood.

Another aspect of the cultural structure that hinders start-ups, 'Hakbol' also should be abolished. By changing a social structure that is recognized for their abilities rather than academic backgrounds, the excellent talents should be able to flow into SE rather than pursuing stable jobs. The 'Blind recruitment', which recruit employees, excluding factors such as academic background, age, and gender, which are recently introduced mainly by public institutions in Korea, should be further spread throughout society. In addition, government should introduce 'Affirmative Action' which gives preferential

treatment to minority groups in the process of recruitment and promotion to alleviate ‘Hakbol’.

Reforming Regulation

In order for new technologies and ideas to flow into SE, regulations on new industries and new technologies must be minimized. Since the business policy in Korea is positive list regulation approach of ‘Prohibition in principle – allowance for exceptions’, so, if some start-ups launch new items that have not been available so far, they should obtain a permit. In this process, the launch of new items is often delayed or banned, resulting in loss of competitiveness. Government should change regulation paradigm to a negative list regulation approach of ‘Allowing in principle – prohibiting exceptions’ so that regulation does not hinder the growth of start-ups.

Among the systems recently introduced in Korea regarding regulatory reform, notable is the 'Regulatory Free Zones' and the 'Regulatory Sandbox'. The 'Regulatory Free Zone' is a framework that drastically eases regulations on new industries to be fostered by region. Each region serves as a test bed for new industries and is intended to expand nationwide in the future. The 'Regulatory sandbox' is a negative list regulation approach that exempts or suspends existing regulations for a certain period or specific areas when a company launches a new product or service that did not exist. This was introduced with the purpose of companies to conduct innovative business in an unregulated environment, such as a safe and freely playable sand box. This should be further spread

so that new industries and new technologies can grow without being affected by regulations.

In addition, regulations on new industries that restrict business activities should be continuously abolished. To this end, it is necessary to appoint a 'Regulatory Ombudsman' who reports the difficulty caused by the regulation and suggests improvements to the government on behalf of the companies. The government should continuously effort to address regulations that hinder business activities through these various channels of communications.

7. Conclusion

In the past, many developing countries have promoted government-led industrialization in which the government intervenes in specific industries and supports enterprises to escape poverty. This strategy has been successful in several Asian countries and accepted as a model for growth strategies in underdeveloped countries.

Today, as the importance of start-ups/ventures increases due to changes in the economy and industrial environment, many countries are attempting to apply the 'Government-led industrialization' strategy to fostering start-ups. However, unlike industrialization strategies, there are few successful stories of government-led start-ups

development. This is because, unlike industrialization, which is simply the result of expanding the quantitative input of capital and labor, start-ups appear as a result of the interaction between the participants of the ecosystem and the environment. Therefore, the government-led quantitative input and intervention alone cannot replicate other ecosystems or achieve the same results. However, this does not mean that the government's role in fostering start-ups should be completely excluded. The government also plays a role as an important participant of SE. In an environment where institution for starting a business is scarce, it is essential for the intervention and support of the government to take-off of SE. However, since the SE can evolve by itself, the role of the government in the beginning is gradually replaced by other participants, as a SE develops. If the government persist the role of the beginning even in the development of the ecosystem, it can restrict the growth of other participants, which will eventually affect the growth of SE. In other words, as the role of participants and resources required are constantly changing according to the development of SE, the role of the government must also change continuously.

Since the late 1990s, the Korean government has been playing a role in fostering start-ups and creating SE in the same way as the previous government-led industrialization strategy. The efforts of the Korean government have achieved some success, such as the steadily increasing number of start-ups. However, the overall start-up performance is still insufficient - promising ‘Unicorn’ start-ups are few, and the growth of SE stagnate. This is because Korea's start-up support policy has not departed from the past direct intervention-centered policy even in the growth of SE, resulting in a gap with the

environment. In order for Korea to transform into a startup-centered economy, the government's policies for start-ups must change. First, it is necessary to ensure that start-ups are supported by the SE, away from the principle that the government supports everything that start-ups need. To this end, the government should shift its policy focus from start-ups to a SE and expand the use of SE mechanism to induce the growth of SE. Second, the government needs to focus on improving the economic, social, cultural and institutional structures that hinder the growth of SE.

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