insight.

Edinburgh University Economics Magazine

insightedinburgh.org

- RECOVERY -

issue 8, spring 2014

An ode to Philip Seymour Hoffman

Taking a fresh perspective on the economics of drug addiction

page 8

Procreation permits in China

Investigating alternative methods of population control

page 12

The three arrows of Abenomics

Analysing the impact of Japan's recent economic reforms

page 14

Table of contents:

focus: balance

comment

note

A note from the Editor-in-Chief

Welcome to the second edition of Insight magasine in this academic year 2013-2014. Firstly, I would like to congratulate Philip Duffy for winning the CRCC writing prize last edition as well as everyone else for their contributions to this edition.

The world economy has gone through an incredibly tough time in the past few years. The learning process that occurs in the recovery period following a serious event is crucial to ensuring the same mistakes are not made again. This is an important concept that will be explored in this issue.


Ian Billett
Editor-in-Chief


Alina Mika
Head of Production


Paul Collins
Director of Photography


Vainius Glinskis
Publication Editor


Clara Mascaro
Publication Editor


Cecilia Mihaljek
Publication Editor


Briana Pegado
Publication Editor


Kati Venho
Publication Editor

economicssociety
the university of edinburgh

Contact us at **insight.edinburgh@gmail.com**

A special thank you to Christina Napier from the School of Economics
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Climate Change: the recovery that the UK economy cannot afford

Rosie Stock Jones argues that climate change is a reality, which needs to be addressed by UK policy makers sooner than later

SINCE JUST BEFORE Christmas last year, the UK has been persistently battered by high winds and heavy rainfall, causing severe travel disruption, loss of power and the flooding of thousands of homes, as well as large areas of agricultural land. December 2013 was the wettest, and one of the stormiest, on record, and research company Capital Economics estimates that the economic cost of these storms, from which the country is only just beginning to recover, will reach around £13.8 billion. Whilst the number of houses flooded in the last few months is far less than were affected by the summer floods of 2007 due to increased spending on flood defences by the Environment Agency, the costs to the economy in terms of lost business from travel disruption and flooded farmland are significant. This is because the area affected; the Thames Valley and M3 and M4 corridors, accounts for roughly 13% of GDP. UK GDP growth in 2012 was just 0.3%, and consequentially, there is a fear that the cost of recovering from the storms could stall or reverse the UK's long awaited economic recovery.

Climate change is happening now: more than just a slogan

This cost is large, and one very topical question concerns whether the past winter's weather is linked to climate change, and if so, what the implications of this are. A look at global weather in the past year contextualises the UK storms and strongly suggests a role for climate change. In the USA several Midwestern states such as Illinois and Minnesota have been experiencing temperatures as much as 12-16 degrees centigrade colder than the average over the past 25 years. In Australia, the Climate Council has reported that heat waves are becoming hotter, longer and more frequent, and in November the Philippines experienced their deadliest typhoon on record; Typhoon Haiyan. Haiyan is also the strongest storm at landfall ever recorded and thought to be the fastest ever recorded typhoon.

These instances of extreme global weather give weight to climate change claims and Lord Stern, author of the 2007 Stern Review on the Economics of Climate Change commissioned by the British government, has stated that these storms are part of an international pattern of extreme weather, illustrating the danger of climate change. In addition, the chief scientist at the Met Office, Dame Julia Slingo, has come out to say evidence suggests that there is a link between the extreme in the UK this winter and climate change.

Number 10

Conventional discounting models: a bad fit for current climate change?

If climate change is happening now and incurring costs today, then the conventional economic conclusions, about the benefits of reducing emissions, do not necessarily hold. The basic concept behind the economics of climate change is that we should abate, or reduce, climate change at the level where the marginal costs of this matches the marginal benefit. This benefit from abatement is generally subject to a discount rate of between 2 and 5%, as the costs are considered to be incurred in some future period. The idea behind this discount rate is that, due to the trend of increasing global GDP and technology, future generations will be better equipped to deal with climate change. Naturally, the higher the discount rate, the less abatement it is optimal to undertake now. The Stern Review came under criticism from leading environmental economists such as William Nordhaus for advocating a low 0.1% discount rate, as this low rate justifies spending as much 15% of world GDP on abatement in order to mitigate an estimated annual damage of just 0.1% world GDP. However, if these storms are the impact of climate change, then the cost being considered is not in the future, but now.

The Stern Review predicts that a 4 degrees centigrade increase in temperature will impose a minimum 5% annual consumption cost, whilst the Intergovernmental Panel on Climate Change predicts a 1-5% economic cost. Global temperatures have risen 0.8 degrees so far and already the UK is looking at a cost to our economy of 1% GDP, if the Thames Valley area takes a month to recover. Furthermore the head of biodiversity of the Environment Agency has said that there has been very serious damage to wildlife, which is not specifically an economic cost, but is something that we nonetheless value. CO2 levels in the atmosphere reached 400ppm last year, and the estimated temperature change for this level is 1 – 2.2 degrees centigrade. However if these levels reach 600ppm, the maximum predictions reach 5 degrees centigrade, and if the costs of a 0.8 degrees increase in global temperatures are this high, and being felt now, then the discount rate being used is much less relevant; the marginal costs of abatement need to be weighed against the current benefits of abating.

Climate change conservatism: damaging GDP growth?

Yet in the UK there is a growing political faction which denies that climate change is a problem. Ed Davey, Secretary of State for Energy and Climate Change, has recently warned against the dangers of 'climate conservatism' which has the potential to destroy the political consensus needed to implement effective climate policy. Nigel Farage, leader of the increasingly popular UK Independence Party, for example, appears happy to be pictured in the midst of the floods wearing his wellington boots but denies the connection to climate change and even wants to ban the teaching of climate change in schools. This approach is the opposite of that taken by Anote Tong, President of Kitibati, which is estimated to be submerged within 60 years due to rising sea levels. Tong has already bought large areas on Fiji to substitute for disappearing agricultural land, and is in talks concerning the eventual migration of islanders. For Tong, academic debate about uncertainties has become irrelevant; the impact of climate change is being felt now and it is no time for politicians to deny the issue.

The storms that have been affecting the UK for the past few months have served to illustrate that the UK cannot afford to be conservative about climate change. An imminent cost of up to 1% of GDP cannot be argued away with a debate on discount rates; it is a real cost, and with all likelihood, a sign of the costs to come. If British politicians ignore this sign, then everyone, not just those unlucky enough to have their homes flooded, will pay with reduced growth. The government should learn from Anote Tong, and take action. They should not only keep to the 2008 Climate Change Act commitment to cut emissions 80% by 2050, and increase investment in renewable energy, but take the lead in global negotiations. As the costs of climate change become increasingly evident, world leaders will realise, like Tong, that they must act. However, the longer serious action is left, the higher the recovery costs of extreme weather such as the British storms will become.

Gary Killon

India after the global recession: still a BRIC?

Riona MacLachlan evaluates the current state of the Indian economy and explains the government's response

United Nations

THE INDIAN ECONOMY is the world's tenth largest by nominal GDP and is one of the 'BRIC' quartet: it's the 'I' of the rapidly developing economies that also includes Brazil, Russia and China. When other countries, as well as its BRIC counterparts, have recovered from the global economic crisis, why has India not yet recovered? Indeed Asia's third largest economy has even been experiencing a decrease in economic growth.

A critical problem facing the Indian economy is the sharp and growing variations among India's different states and territories in terms of poverty, quality of infrastructure and socio-economic development. A third of the Indian population live in the six lowest-income states - Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and Uttar Pradesh – where, it is suggested that poverty has been caused by the lack of availability of unskilled work. Other Asian tiger economies such as Taiwan, South Korea and China relied in their early years on manufacturing which provided jobs for the poor, and then progressed to skilled jobs which increased their growth rates even more. The Indian government plans to give skills training to 500 million people by 2022, and intends to get the stagnating manufacturing sector involved, which could potentially help India's poorer states develop. The current government has also concluded that most of its welfare spending fails to reach its intended recipients due to corruption, further widening the gap between the rich and the poor. Unless the government addresses the skills and corruption issues, economic development in the poorer areas of India is unlikely to materialise.

The spillover effects of a weak currency

A rapidly depreciating currency has also been a concern in the Indian economy. The Indian rupee has grabbed headlines around the world: on the 28th August 2013, the rupee hit an all-time low of 68.7 against the US Dollar. Lack of confidence in the Indian economy led to mass selling of the rupee which flooded the market, leading to the initial decline in value; as a result confidence in the economy fell further, leading to capital flight. In order to control the fall in the rupee, the government introduced capital controls on outward investment by both corporate bodies and individuals in order to prevent more capital flight occurring.

The weak currency has also affected the current account deficit. The weakened rupee has increased the price of imported components for manufacturing and even though it has made these goods more attractive in the global economy, it has increased the prices for India's population. The Indian government responded by raising the import duty on gold (the purchase

Eric Miller, World Economic Forum

of which had been one of the biggest contributors to the deficit). The current account deficit fell after this policy was implemented, but a large deficit remained. At the end of 2013, HSBC analysts wrote 'Looking ahead, the deficit is likely to widen again as imports get a lift from seasonal demand and a gradual recovery in domestic demand. The current account deficit is expected to have widened during Q3 (October-December) as festive seasonal demand brought in additional imports. That has already been evident from the trade deficit for October, which widened to USD 10.6bn from 6.7bn in September' [blogs.ft.com, 5 December 2013].

Measures such as the import duty will only have a limited effect until improvements are made to the poor road infrastructure in India, for example, connections to small villages in India are inadequate and main road connections are of poor quality. This kind of poor infrastructure disrupts investment and exports. Poor road connections to smaller villages also make the collection of income and corporation taxes difficult in these areas, damaging public finances as tax revenues are less than they might be.

A fall in foreign investment has also contributed to India's economic problems. Foreign investors have pulled money out of the country and are wary of returning because of the government's failure to enact key reforms. The current government, which took office in 2004, assumed growth was on 'autopilot' and failed to address serious structural problems such as the quality of infrastructure. Flush with revenues, it began major redistribution programmes, neglecting its consequence: a higher fiscal deficit. Foreign investment in India has become less likely as other destinations have become more attractive than India, with conditions improving more rapidly in other major economies, such as United States.

The way forward

The Reserve Bank of India took a number of monetary easing and liquidity enhancing measures to facilitate flow of funds from the financial system to meet the needs of productive sectors. On 29 October 2013, the interest rate rose from 7.5% to 7.75% to try and fight inflation by encouraging saving rather than spending, thus reducing demand-pull inflation. The increased interest rate also encourages investment as investors gain more return from a higher interest rate. On 28 January 2014 the interest rate was raised again by quarter of a percent to 8% in order to stem inflation. Cost-push inflation has also occurred as a result of the weak rupee, making imported components more expensive. In order to reassure investors, the Indian economy needs to show signs of recovery in terms of the current account deficit and inflation, and also needs to pursue policies that target private investment into the economy.

The Indian government is taking steps towards stabilising its economy, but India will need to regain the confidence of investors by enforcing structural reforms and continuing to take measures to control inflation and the weakening currency. A restoration of faith in the Indian economy could be a key factor in encouraging foreign investment, as well as reassuring the Indian population that their economy is recovering. If those outside India and those inside India both have confidence in the direction that India is taking, then India's status as a leading developing economy should be assured, such that she can be seen to match the other leading developing economies, and thus retain her status as a BRIC nation.

Pierre Dore

The economics of drug addiction recovery: a tribute to Philip Seymour Hoffman

Satnaam Dusanj investigates the economic ideas behind the burden of drug addiction.

ON SUNDAY 2ND February around 11.15 am, Philip Seymour Hoffman was found dead on the floor in his New York apartment from heroin overdose. One of this generation's finest actors passed away after a relapse into serious drug addiction 23 sober years after last leaving rehabilitation. This is my ode to Philip Seymour Hoffman in economic verse.

Rational choices?

A water sports instructor once told me: "life is dead simple: it's all about choices". Well, economics tells us that the rational person makes the optimal choices in this world to maximise their utility (or happiness) consistently over time. This is the nature of Becker and Murphy's famous theory of the rational addict, an individual who makes consistent actions so they may be happiest over time, and chooses drugs when faced with no better alternative. The case of Hoffman contradicts the economics. He went 23 years with a Best Actor Oscar in the middle without choosing drugs having known its effects, only to relapse in 2012. Let me clarify: define addiction as an increase in the current consumption of a substance results in increased future consumption of it. This is essentially the definition given by the medical profession to show how drug usage leads to users developing a tolerance for them. That is, your body grows accustomed to it and no longer responds in the same way as happened in previous consumption. This then implies that your present level of consumption has to be greater than all previous consumption so you may gain any of that "short-lived, 30 minute nirvana" at all, and economics calls this the greater marginal utility from present consumption due to increased past consumption.

We usually don't make optimal decisions for the long term. It probably is best for our long term health to quit smoking but many of us choose not to. Is this simply lack of self-control? How many times have you said you'll go to the gym and not done so? You chose not to follow your own longer term plan, and the preference among the two options reverses (over time). This definitely shows a lack of self-control or, what we can call, bounded willpower. This stems from a poor value given to the future, and it's natural among humans. We have a tendency to favour the present, and are more able to deal with it. This view of how we behave given how we value the passing of time is called hyperbolic discounting of time. We gain greater pleasure from choosing actions with smaller payoffs immediately than those with larger payoffs in the future. While not completely perfect, various studies have shown it comes much closer to representing the human capacity to make choices over time than the rational agent.

Present vs. future preferences

Advances in neuroscience help to explain what actually occurs when we make choices. The frontal lobe of our brains, in particular, seems to be crucial in how we behave. Neuroeconomist, George Loewenstein, has long distinguished between the affective system in the frontal lobe – that which controls our impulsive nature – and the cognitive system in the frontal lobe – that which is associated more with our rational and planned nature. In one system, we choose in excitement or worry or short term fulfilment. In the other, we behave according to how we want to be in the future. The key is that we generally all have potential to do both yet people may have their affective and cognitive systems work to different degrees.

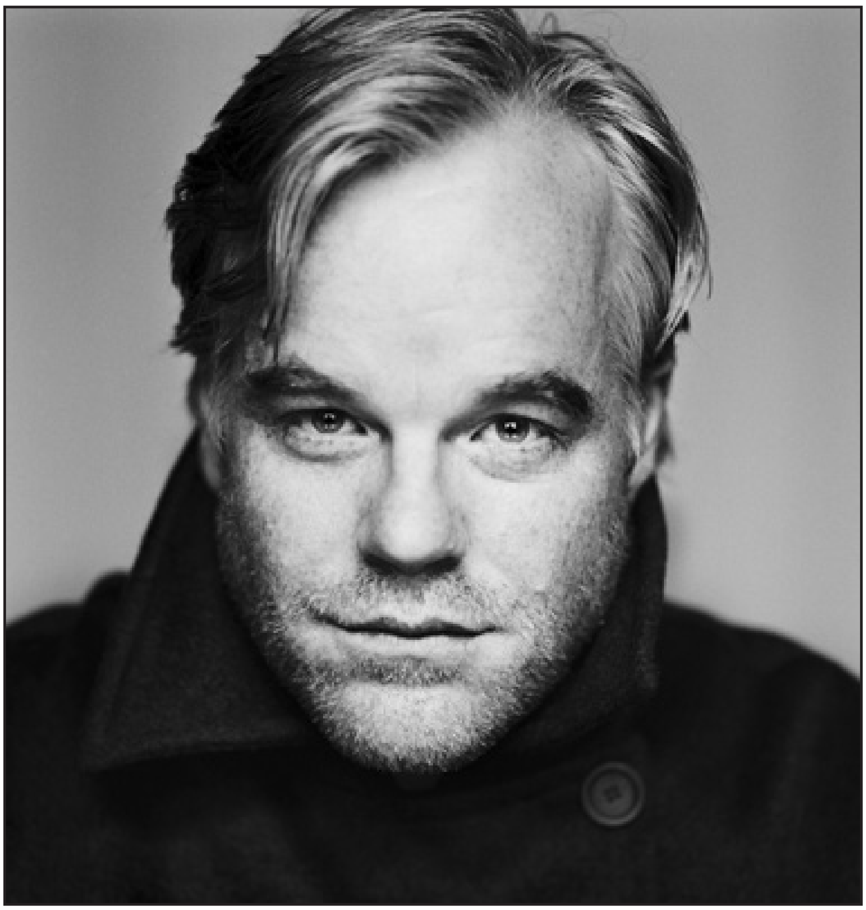
For the most part, we are able to resist our impulses particularly when they represent the threat of long term harm. We call this a choice to delay gratification. The person that chooses to not eat any sugar products after a long, tiring day has, in simple terms, used their cognitive system to overcome their affective one, using their forward-oriented self to control their impulsive self, suggestive of the different personal identities we assume over time. This is what we term self–control. If this usurping of one system over the other at different times can happen, then the cognitive system needs to be controlled to remain dominant for the former addict, in particular. This is what we term willpower. If we split our person up into a present and future self to represent this lack of constant identity, giving each a different set of preferences, say, the present self that wishes to substance abuse and the future self that wishes to abstain, then we can work out the best strategy of willpower to abstain from drug use for the former addict.

This cooperation between an individual, split into different parts, is essentially what Monterosso & Ainslie term choice bundling. In their 2007 paper on willpower, they incorporate a self-control mechanism that means we make a choice that is part of a larger category of choices. The best way to do this given our hyperbolic time discounting preference is to group future choices together with the present. For instance, if the person wanting to quit smoking in the New Year realises that smoking in January is conditional on the fact that they are expected to smoke every month after that, their choices in the present carry far more weight.

Monterosso & Ainslie show this better in a game between present and future selves using the classic prisoner's dilemma game. In this case, players i.e. present self and future self, have the option of cooperating (one self does not consume drugs) or defecting (one self consumes drugs). They choose their strategies in each time period, say each month for the smoker. Furthermore, they both choose their options simultaneously. If both cooperate, they both gain utility from working together (and, more importantly, not becoming an addict). If the present self defects (consumes drugs) and the future self cooperates (does not want to consume drugs) then they will lose out in the next round. This is because the next round sees the future self respond to the strategy previously chosen by the present self and they likely defect too, no matter what the present self chooses in this round.

Addiction, Recovery, Relapse

This then might go some way to explaining the relapse of a seemingly recovered addict like Hoffman. After 23 years of continuous cooperation with



his present and future selves – and testimonies from many addicts make it clear that their taste for the drug does not completely leave them throughout their life – Hoffman only has to defect once and this crashes the system. One bad move is critical in this game because it damages future mutual cooperation between the two selves. This is why Russell Brand has said there is no chance he ever expects himself to handle drugs. If he takes it again, it will be enough for serious relapse. And Monterosso & Ainslie show some neuroscience studies have found that this is similar to the effort gone into a self-control "muscle" to show restraint for long periods of time. However, when this muscle is relaxed, perhaps so a person can celebrate or when they come into a great difficulty in their life, it truly opens up and results in no self-restraint applied by the present self. This is how we often interpret binges, and binges are so often fatal with serious drugs.

Take a former addict who fights a long, arduous battle between their different states of mind to finally reach equilibrium and a balance in their life. The break in the equilibrium is not caused by a need for short term pleasure but, rather, the fact the former addict feels they can handle the effects. Notice, then, the first line of the well-used and well-documented 12-step progamme in drug recovery:

"We admitted that we were powerless over our addiction – that our lives had become unmanageable."

This programme puts no effort into its participants from the start. It is not their will that they are addicted, they are powerless. It makes sure participants carry no overconfidence in their dealing with their choices. This overconfidence can result in a present self rationalising the defective choice in the game and shattering any future cooperation. Participants are powerless and they pray for "freedom from…wishful thinking" as part of the programme. It is implies that the real, crisis point lies in how the individual believes they will handle the prospect of a choice once they are by themselves. This is why the best former addicts have the greater support network and are constantly reminded that they have no choice when it comes to drugs. If that support disappears, relapse is often the only solution.

Breaking Free

Recovery from drug addiction requires much more than initial willpower. It is classified as a disease in much of the world and strong medical treatment is required. However, the seemingly recovered addict and their relapse is crucial in the fight against dangerous drugs. Former addicts accuse society and its laws and its marginalisation of its addicts as a deterrent to recovery. They are made to feel as if the problem is purely their fault. If cooperation is broken in the sequential game, usually from a loss in the support network, the resulting relapse can be deadly as in the case of Philip Seymour Hoffman. Relapse calls into question what a recovered or former addict even means. Can an individual who becomes an addict ever cease to be an addict? These uncomfortable truths require careful thought, but economics argues never losing sight of the addict. As the 12 step recovery programme says: "every day brings you one day closer to your next relapse".

Pierre Dore

Procreation control: child's play?

Andrea Schmidtova analyses procreation permits and other methods of curbing population growth

IN 1968, THE U.N. declared that deciding on one's family size is a fundamental human right. However, due to the fear of overpopulation hindering future economic growth, governments of many developing countries have considered implementing tools of procreation control as a means of economic recovery. The most famous example is China's one-child policy. Although it has raised many eyebrows, its alternative – tradable procreation permits, which were proposed by Kenneth E. Boulding in his book "The Meaning of the Twentieth Century" (1964) – are highly questionable on moral grounds despite achieving greater market efficiency. The commoditisation of human life is a dangerous, unprecedented social experiment preventing the poor from procreation, which severely violates basic human rights on multiple levels.

Policy choice

China's one child policy can be seen as an analogy to a quota system in international trade. A government sets a desirable maximum amount or value of goods and services which are allowed to be imported or exported. Anything above the quota is either completely forbidden from being traded or punished by a fine (e.g. a higher rate of taxation). Similarly, the Chinese government set a quota of one child per family, which results in a fine proportionate to one's income if breached. Since their implementation in 1979, the strict rules have been somewhat relaxed, for example if neither of the parents have siblings or a girl is the first child in rural families, two children are allowed. Still, the policy is egalitarian in a sense that every family, regardless of their characteristics, is granted access to having one child. As a result, quotas inherently give rise to market inefficiency, as the "good" (in our case the right to have a child) is allocated equally across the population instead of being based on the value that each agent places on it.

In contrast, a scheme of tradable procreation permits removes the inefficiency by allowing agents to trade their surplus units with one another. According to Boulding, the government would allocate a permit for one child to every woman, just like in the quota system, with one key difference: should a woman choose not to have children, she would be allowed to sell her permit to the highest bidder on the market. If such voluntary transactions take place, in theory they are Pareto improving. In other words, the seller receives a monetary compensation higher or equal to the value she placed on having a child, whereas the buyer exchanged a sum of money lower or equal to the utility gained from having more children for the right to do so, meaning that at least one party to the trade was made better off without making the other worse off, and total welfare has increased.

Therefore, in theory, procreation permits would be the preferred policy, since they increase market efficiency and allow people to sell their unwanted right to having children. However, there are a

Trevor Patt

Mitch Timpson

number of non-market based considerations to take into account.

Unborn children equivalent to emissions?

Procreation permits could be mistakenly paralleled to emission controls. Such a comparison would only be appropriate if solely infertile women were allowed to sell their permits at various points over their lifetime. This would be equivalent to poor countries selling off surplus permits in the international market due to their own production constraints, making them strictly better off. If the whole population of a country is allowed to trade procreation permits on a national level, it may result in poor people avoiding their current economic plight by giving up the right to reproduce in the future, equivalent to developing countries selling all their permits at once and foregoing all their future emissions and thus production. That would further hinder their limited opportunities of recovery and in the long run only deepen inequality. In addition, a policy aimed at reducing inequality, which in effect eradicates the poorest part of population instead of assisting it to improve the living conditions, cannot be deemed successful as it only treats the symptoms instead of removing their cause.

Luxury goods and the black market

Although permit trading improves efficiency by allocating the good to the consumer with the highest ability and willingness to pay, Boulding only considers absolute monetary valuations. Even though the poor might be willing to pay the same relative proportion of their income as the wealthy, the ability to pay is restricted by one's initial endowments and so their total monetary value would be lower. For the policy to have any effect, the government would have to provide fewer permits than is the equilibrium demanded quantity. The shortage of permits would force the free market price to shoot up above the equilibrium, consequently pushing the poor out of the buy-side of the market and making children a luxury good.

Furthermore, there is no guarantee that all trades will be voluntary. A black market for permits could form and transactions might be forced, as is the case for illegal organs trafficking. Additionally, a trading scheme enables a perverse form of investment in which permits could be bought up not for own use but for profit in the expectation of a future price increase.

Finally, is the attempt at assigning a monetary value to a future human life not just as immoral as trafficking of living individuals? The extreme gap between the ability to pay of the groups creates a huge opportunity cost of having a child for the poor, forcing them to sell permits as a one-off source of income. Also, the decision to sell is based on current preferences and lifetime discount rates of people's utility functions, which are known to be changing in response to different circumstances. However, the one-off transaction of selling permits would be irreversible in most cases, because the poor would have already spent some of the selling price.

Kenneth Boulding's solution to overpopulation is revolutionary; however, the efficiency attained by free markets cannot be the sole goal of policies if they are highly objectionable on moral grounds. After all, economics is not just a science of complex optimisation, but as Adam Smith said, it is a branch of moral and political philosophy.

The Chance and Challenge of Japan

Daniel Q. Lin discusses the effectiveness of Shinzo Abe's Three Arrows

JAPAN USED TO be the second largest economy in the world, but was replaced by China in 2010 when its GDP was US$ 404.4bn less than China. Why has Japan's economy been slowing? What is causing Japan's economy to stagnate? How effective has Abenomics been for Japan's economic recovery? This article will investigate the effects of these policies.

Because Japan has been suffering deflation for decades, the primary objective of Abenomics is to create inflation. The term Abenomics refers to economic policies which involve Quantitative Easing, Fiscal Stimulus and Structural Reform as advocated in December 2012 by the current Prime Minister, Shinzo Abe. These policies are also known as the 'Three Arrows of Abenomics' which are supposed to reduce government debt and increase the stability of long run economic growth.

The three arrows are:

1. Quantitative Easing (QE): The idea is to increase purchases of government bonds by 50tn Yen (US$500bn) per year, which is equivalent to 10% of its GDP in order to reach the target of 2% inflation set by the Bank of Japan.

2. Fiscal Stimulus: To increase public spending on infrastructure and renewable energy.

3. Structural Reform: Involves regulatory reform in key sectors such as agricultural, healthcare and energy and to create economic partnerships with other countries, such as TPP (Trans-Pacific Partnership).

Nekkymomo

Battles won

So far, the results are encouraging as the first two arrows have been effective. The value of the Yen has depreciated significantly as a result of printing money. This increased the money supply, lowered interest rates and encouraged people to spend more. This will boost exports as Japanese goods become relatively cheaper in global markets. More exports will increase corporate profits and attract more investment, which raises the value of the domestic stock market.

Increasing share price invigorates corporate capital expenditures by making it easier for companies to raise funds and encourage them to invest in business expansions. Higher profits lead to higher incomes and will increase consumption, which results in even higher corporate profits. This becomes a cyclical effect. In addition, increasing public spending not only boosts business and consumer confidence, which leads to increased consumption, but also increases employment.

Given that GDP=C+I+G+X-M, when each component rises, economic growth will also increase. In October 2013, inflation rate reached 1.1%, which was on track to meeting the 2% inflation target. Meanwhile, the

Jeremy Royall

consumer price index (CPI) increased by 0.9% from a year earlier. In the first half of 2013, Japan had 4.3% annual growth rate, this decreased in the 3rd quarter but was still higher that expected. However, in the last three months of 2013 there has only been 1% annual growth which less than half of the expected value.

The war is not over yet

The slowdown in GDP growth rates is mainly due to the negative effects of the first two arrows of Abenomics. For example, after the Yen depreciated, the value of exports increased by only a very small amount. This depreciation sharply increased the cost of imported energy after Japan shut down all of its nuclear power plants following the 2011 earthquake and tsunami. In addition, as energy costs increased so did production costs, making Japan less price competitive in the export market, further decreasing exports.

Furthermore, given that Japan has the largest debt in the world (which is about 240% of its GDP) increasing government spending might be risky if Japan fails to grow. However, increased government spending on infrastructure will reduce unemployment in the long run. Meanwhile, spending on research for renewable energy and energy saving technology will decrease the trade imbalance for energy.

Structural reform is the most difficult goal to achieve but also the most important. This policy aims to increase income by 3% a year and per capita income by 40% to above $60,000 in 10 years. Other reforms, such as an increase in the flexibility of labour markets, productivity of service sectors, female participation and free trade will also help Abe achieve his goals.

However, Japan is faced with some serious demographic worries, the rapidly increasing proportion of elderly people reduces labour market participation and increases the dependency ratio. When Japan joins the Trans-Pacific Partnership (TPP), it will have to reduce agricultural import tariffs, which risks harming the local agricultural industry. However, in return, member countries of TPP will also reduce their barriers to Japanese exports, such as manufacturing goods and electronics. Given that high tech goods are more valuable than agricultural goods Japan might gain more than it loses.

To lower government debt, Japan will increase its consumption tax in April 2014 from 5% to 8% and then to 10% in April 2015 in order to pay for rising welfare costs. Although increasing the consumption tax might reduce the current account deficit, it could also decrease consumption and lead to a slowdown of economic growth. Given that the first quarter growth of 2014 is only 1%, economic growth might be wiped away with a higher tax.

In conclusion, Abe's three arrows are somewhat effective, but Japan might need stronger policies to achieve its targets. If Mr Abe reinforces each policy after reviewing their effects, he might still be able to lead Japan towards sustainable growth.

Fact-checking Immigration

Philip Duffy gives an economic overview of the immigration debate in the UK

AS THE UK economy finally begins to show signs of tentative recovery, the once dominant issue of the economy is being displaced by the issue of immigration as the biggest concern for the average voter, according to opinion polling by Ipsos Mori. With the anti-immigration UKIP party seemingly setting the political agenda in the run-up to European elections in May 2014, it is likely that the issue will only be regarded with more interest in the coming months. Immigration, however, cannot be considered in isolation from other important issues, principally that of economic recovery and the long-term fiscal sustainability.

Immigrants not more costly than native workers

Common economic arguments against further immigration into the UK include; the displacement of 'native' labour and wage suppression, a perception of higher demand on public services, including welfare benefits and other social support, from immigrant populations, and excess demands on resources such as housing, land and environmental assets. Recent studies by some highly regarded think tanks have tried to quantify some of these objections.

The 'Centre of Research and Analysis of Migration' provides an empirical analysis of the net fiscal contributions of immigrants (from outwith and within the European Economic Area – EEA) Although there is some evidence that non-EEA pre-1995 immigrants did impose more costs to the taxpayer than they contributed in taxation, in general, immigrants have contributed more than the 'native' population. The REE (ratio of revenue against expenditure) for 'native' workers stood at 0.88 (where greater than 1 means contributing more than taking out). This is compared against an REE of 1.00 and 1.34 for immigrants from the EEA (pre-1995 and post-1995, respectively). Given that current legislative changes have severely restricted non-EEA immigrants since the mid-90s, these figures suggest that immigrants are not, and will not be, a fiscal drain on the public finances in the short-term.

Lou Saiko

Is immigration a sustainable solution to budget deficits?

However, an important omission from this analysis is the fact that it uses a static approach. The researchers calculate the taxes immigrants pay and the amount of public expenditure they absorb over a year. This method tends to overestimate immigrant contributions, as a more accurate approach would be to estimate the entire stream of future taxes and expenditures associated with immigrants and their descendants. However, these calculations are very difficult to do with any semblance of accuracy. One of the much touted advantages of immigration is that it will help offset the negative effects of unfunded pension liabilities as the UK's demographic structure continues to evolve. According to the latest projections from the Office for Budget Responsibility, the dependency ratio (economically inactive population to economically active population) could be 8 points higher by 2060 without an annual increase in net migration of 260,000 persons.

However, ever increasing net migration will undoubtedly cause more fiscal liabilities in the future. The young and hard-working immigrant today will be a pensioner by 2060. Will the solution to unfunded pensions in 2060 be to increase immigration further still?

Whether it is this generation or the next, at some point in the not too distant future, the UK (along with other Western societies) is going to have to bail out the profligate baby-boomer generation; nothing will be achieved by kicking the proverbial can down the road. Recent research into the effects of

Sebastian Derun

immigration on public pension reforms across Europe suggests that allowing immigration levels to rise over the past two decades has, in a sense, smoothed the somewhat painful adjustments to pension entitlements, which can only be viewed as a positive development. Mass immigration has softened the impact of inevitable fiscal retrenchment and pension reform; but, it is by no means a silver bullet, and to argue that perpetual levels of high net immigration will allow us to live beyond our means in the long-run is simply not credible.

While immigration seems to have had a positive effect on the overall public finances, the effect of influxes of cheap labour into the UK labour market has undoubtedly had negative impacts in some sectors. In late 2012, The UK Migration Advisory Committee reported empirical evidence that suggested that, when the economy was below full capacity, for each additional 100 non-EU migrants in the labour market, there was an associated drop in employment of 23 native workers (although the statistical significance of this has been very recently questioned in a government report). However, these headline aggregate figures hide inconvenient complexities.

Impacts vary depending on the sector

At the lower end of the wage spectrum, an oversupply of low-skilled workers will depress wages as more workers compete for fewer jobs (a Marxist might call this capitalism's reserve labour army). In the boom years, the macro-economic impact of this downward pressure on wages was broadly positive for the economy, in terms of keeping inflation in check. Post-2007, however, the erosion of real wages (and working conditions) in some sectors of the economy is all but evident. In contrast to wage suppression at the bottom of the income distribution, many other sectors have seen benefits. Our universities, for example, have undergone rapid expansion since the 1990s, fuelled, in no small part by overseas students and their fees. In terms of entrepreneurialism, there may be unquantifiable multiplier effects from immigrant workers in the economy, which sustain further employment and economic activity. Again, however, these positives may be dulled in times of recession.

Finally, in terms of the argument that higher immigration is pushing up house prices and leading to the over-exploitation of national resources, in so far as more people exacerbates an already existing problem, it should be enough to say that simply closing the border will not solve the problem.

Immigration is a complex issue, worries about the negative impacts of foreigners have abounded throughout history, especially in times of economic hardship. Our economic recovery, however, could be irrevocably threatened if sensible and evidence-based policy on immigration is not pursued. Indeed, increased immigration since the 1990s has plausibly lead to a dampening of the painful tax increases and public spending cuts which would have to have followed the financial collapse of 2007. That fact may be of little comfort to the unemployed and underemployed workers across the UK, but the idea that wholesale curbs on immigration will be any more or less painless than the Chancellor's current adjustment programme is wishful thinking at best, and the politics of prejudice and envy at worse.

Think contemporary art is worthless? Think again.

Cecilia Mihaljek explores the resurgent contemporary art market

FOR PLACES THAT celebrate breaking the rules, museums have a plethora of them: no running, no bags, no touching . Museums pour a lot of resources into keeping art works intact, but considering current market conditions, some safety tape and a few security guards are a small price to pay. In 2013, Sotheby's auctioned an Andy Warhol silkscreen diptych for $380.6 million (£228.9 million). In the same year, Christie's auction house reported a record $7.3 billion (£4.4. billon) in total sales. Accordingly, the price of a booth at the world's most prominent and competitive art fair, ArtBasel, cost upwards of $50,000 (£30,070). At a time when most other markets are recovering the art industry is booming, but is difficult to fully assess the nature of its recovery and prosperity.

Art markets: an abstract concept

In 2012, the European Fine Art Foundation (EFAF) estimated the total size of the global art market to be €41.6 billion, basing the figure on public auctions and a survey of over 6,500 galleries. While this is a useful benchmark, quantifications of the art market are best taken with a grain of salt. There are thousands of buyers and sellers globally. Many auctions and transactions are carried out privately – not to mention that there is no universal agreement of where material culture ends and "art" begins. In fact, the term "art market" is flawed in itself - the plural form, "art markets", would be more appropriate. The most fundamental distinction is between primary and secondary markets. The former refers to new, emerging artists whose works are being sold for the first time, whereas the latter denotes everything that has passed through more than one dealer's hands, from ancient Chinese pottery to Koons' sculptures. These primary and secondary markets are made up of countless other markets, often intersecting each other, like differences in the market for a certain country, time period, style, or artist. Although surveys such as EFAF's are helping to bridge the gap, the study of art markets is still fragmented. It relies largely on anecdotal and widely public evidence or indicators e.g. sales at auctions and fairs.

Soaring Prices

Difficult as it may be to draw universal conclusions about art markets, there is a noticeable trend across the board: rising prices. A leader in art market data, Artprice's Art Price Global Index recorded a 15% price level increase in 2013, making it the "best year ever" for at sales. Much like the Consumer Price Index, which measures price changes over time for a typical basket of consumer goods, Artprice's index follows the market value of over 500 artists' works. The analogy of the artists' works viewed as a basket of goods allows us to put art in the context of a general price level. In most economies, the target annual inflation rate is around 2%; thirteen percentage points below the art market's 15% point increase. This highlights how dramatically the art industry is growing in comparison to the rest of the economy.

Nevertheless, every index (including CPI) is flawed. The Artprice Global Index runs an even greater risk considering the size, diversity and information asymmetry in the art industry. While, it is possible that Artprice's calculations are a few percentage points off, the trend the index identifies is spot-on. Art advisor Candace Wallace gives an example of these discrepancies in her 2012 TED Talk on a 20-edition Glenn Ligon print. In April 2012, one of the prints was put on offer for \$32,000 (£19,245). In May, one month later, the exact same print was being offered for \$60,000 (£36,084). There are countless examples like this one across the market that give insight into the transactions that take place.

Art as an asset

Examining why there has been a recent surge in prices is complicated by the unusual nature of demand for art. On the one hand, art is an asset, a status symbol and an investment. On the other, it is something to be seen, enjoyed and admired. There is reason to believe that the former is becoming more and more of a driving force in the art industry. Tax-free ports, originally used in order to avoid bureaucracy when shipping artworks across international borders, are increasingly in demand as storage units.

It is estimated that up to 80% of some collectors' art assets are kept safe in such ports, suggesting that the interest is financial rather than personal. This trend is particularly worrying for museums: prices are being pushed up to the point where most institutions can no longer afford them, but while patrons are not interested in lending out their investments once they are safely tucked away. After the 2008 crisis, art prices took a slight dip but consistently outperformed equities. It may not be unreasonable to economists to suggest that investors are trading in volatile stocks for tangible, long-term investments like art.

However, the greatest cause behind a surge in prices is new money from South America, the Middle East and Asia. Buyers in developing markets previously took up a 5% to 10% share of global art buying, now these buyers represent a 30% share. Sotheby's successfully launched auctioneering in China, but is slowly falling into the shadow of Poly Auction, a Chinese auctioneering firm. With an initial public offering of \$331 (£199) million, Poly Auction recently became listed on the Hong Kong stock market recently on March 6th. In terms of their size and power, Chinese auction houses are a force to be reckoned with. But it is likely that traditional western auctioneering giants such as Christie's and Sotheby's will enjoy their advantage a few more years, or as long as because Chinese auction houses remain plagued with forgery, corruption and defaulting buyers.

Many have expressed concern that the art market is a bubble, bound to burst in the near future. Although the skyrocketing prices of artworks may not be sustainable, it is unlikely that entire art markets will collapse: whereas 47% of Americans own stocks, only the top 1% are financially active in the art world. To put it bluntly, the rich will stay rich and they will continue to buy art.

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